LABORATORY SERVICES MANUAL

State of Alaska
Department of Health and Social Services
Division of Public Health
Section of Laboratories
Revised 10-3-12

Laboratory Contacts

Alaska State Public Health Lab
Anchorage Laboratory
5455 Dr Martin Luther King Jr Ave
PO Box 196093
Anchorage, AK 99519-6093

Phone: 907-334-2100
Fax: 907-334-2161

Business Hours:
8 am – 5 pm Monday – Friday

Emergency Calls After Hours
1-855-222-9918

Alaska State Virology Lab
Fairbanks Laboratory
University of Alaska, Fairbanks
931 Sheenjek Drive
PO Box 60230
Fairbanks, AK 99706-0230

Phone: 907-474-7017
Fax: 907-474-4036

Business Hours:
7:30 am – 4:30 pm Monday – Friday

Emergency Calls After Hours
1-800-474-7018 option 6

Alaska State Public Health Laboratory Website

Chief of the Section of Laboratories
Dr. Bernd Jilly
Phone: 907-334-2109

Deputy Director of Laboratories
Dr. Jack Chen
Phone: 907-474-6566

State Public Health Laboratory – Anchorage
Kathy Ross, Acting Lab Manager
Phone: 907-334-2116

State Virology Laboratory – Fairbanks
Bonnie Bond, Lab Manager – Phone: 907-474-6060
Immunology – 907-474-6059
Molecular – 907-474-1696
Viral Culture – 907-474-6065

Analytical Chemistry
State Public Health Laboratory - Anchorage
Dave Verbrugge
Phone: 907-334-2156

Bioterrorism/Special Pathogens
State Public Health Laboratory – Anchorage
June Pounder, Phone: 907-334-2110

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Submitter Criteria

Clinical:

- All health care providers licensed or certified by the State of Alaska.
- Laboratories seeking reference or confirmatory testing.

Environmental:

- Animals suspected of rabies may be submitted by health officers, public health nurses, veterinarians, physicians, law enforcement and pet owners with prior approval from Section of Epidemiology 907-269-8000 during business hours or 1-800-478-0084 during non-business hours.
- Bioterrorism or Chemical Terrorism specimens may be submitted by law enforcement, health care providers and diagnostic laboratories upon consultation with Section of Epidemiology.
- Biomonitoring specimens may be submitted with approval from the Section of Epidemiology 907-269-8000 during business hours or 800-478-0084 during non-business hours.

Specimen Collection Kits

The State of Alaska Public Health Laboratories provides specimen collection kits free of charge to all Alaska Health Care Providers.

Please monitor expiration dates carefully. Samples collected in expired transport media are unsatisfactory and will not be tested.

Supply Request Form

APTIMA® CT/GC Collection Kits	Urine Transport Unisex Swab Transport(Endocervical, Urethral, Eye, Rectal, Oropharyngeal) Vaginal Transport
ETM	Enteric Transport Medium (Stool Cultures)
Ova and Parasite Kit (O&P)	10% Neutral Formalin and PVA Fixative Set
Cary Blair Swabs	Used for transport of isolated enteric pathogens
TB Sputum Cones	50 mL cones with sodium carbonate preservative
Pertussis Kits	Regan-Lowe Transport Media and NP Swabs for Culture and PCR Replacement Regan-Lowe Transport Media for expired kits Test Request Form & NP collection instructions
Mycology (Fungus/Yeast)	Sabouraud Dextrose and Mycosel Agar Set
Norovirus	Request from Section of Epidemiology 907-269-8000 during business hours or 1-800-478-0084 during non-business hours
Diphtheria	Culture Swab EZ
Pinworm	Pinworm Paddle
UTM Kit (Viral Cultures)	Universal Transport Media Kit with collection swabs (Viral Cultures)

** Please note – the Alaska State Public Health Laboratories do NOT supply **blood collection tubes** or **Biohazard Bags**.**

Request Forms and Specimen Labeling

- A properly completed **request form** must accompany each diagnostic specimen
  - ✓ Patient name and/or Identification number
  - ✓ Date of birth
  - ✓ Gender
  - ✓ Specimen source
  - ✓ Date of specimen collection (time if applicable)
  - ✓ Provider name & mailing address
  - ✓ Test(s) requested

- **Specimens** must be labeled with the name or identification number of the patient.

- Specimens must be collected properly (i.e. using the correct swab or the correct transport medium). Please refer to specific collection instructions for testing.

- To request additional testing on a specimen held by the laboratories, please fax or mail a new request form requesting the additional testing. Testing cannot be performed until the request for additional testing is received.

- Specimens that have leaked in transit will be rejected as unsatisfactory at time of receipt.

- **Unlabeled or mislabeled specimens are UNSATISFACTORY and will not be processed.**

Laboratory Request Forms:

Anchorage

Fairbanks

Rabies

Specimen Shipping

For current shipping regulations and instructions, please refer to IATA, DOT, US Postal Service, and American Society of Microbiology (ASM).

http://www.iata.org/index.htm

US DOT - Transporting Infectious Substances Safely

http://www.usps.com/

ASM Sentinel Laboratory Guidelines for Packaging & Shipping July 2011

Specimens must be shipped according to current federal, state and local laws. Upon request, Alaska State Laboratories provides ambient temperature shipping boxes that meet current shipping regulations.

Supply Request Form

Unless otherwise authorized, the State of Alaska does not provide postage or funds to ship samples to the laboratories.

Reports and Results

- Preliminary and final reports will be mailed to submitters as testing is completed.
- Submitters will be notified of significant or positive results by phone or fax (if requested).
- Section of Epidemiology is notified of results reportable to the Alaska Division of Public Health, but it is also the responsibility of the Health Care Provider and/or the referral laboratory to report accordingly.

Infectious Diseases Reportable to the Alaska Division of Public Health

Test	Acetone
	See Toxic Alcohols and Glycols

Test	Acid Fast Stain for Isospora, Cyclospora, and Cryptosporidium Oocysts
Testing Lab	Anchorage
Disease(s)	Isosporosis, Cyclosporosis, Cryptosproidiosis
Organism(s)	*Isospora belli, Cyclospora cayetanensis, Cryptosporidium parvum*
Test Method	Acid-fast stain
Specimen	Stool
Collection Container	O & P Collection Kit
Storage/ Transport	Ambient temperature.
Results	*Isospora belli* Observed/Not Observed *Cyclospora cayetanensis* Observed/Not Observed *Cryptosporidium parvum* Observed/Not Observed
Turnaround Time	3-5 days

Test	Adenovirus
Testing Lab	Fairbanks
Disease(s)	Common cold, croup, bronchitis, pneumonia, rash, epidemic keratoconjunctivitis
Organism(s)	Adenovirus (49 types)
Test Method	Culture and serum neutralization
Specimen	Nasopharyngeal swab, throat swab and eye exudates are preferred over stools. Use collection swab(s) included in UTM kit, place swab into Universal Transport Media.
Storage/ Transport	Store refrigerated. Ship with cool packs.
Results	Adenovirus POSITIVE/No Virus Recovered Strain typing is performed if a virus is isolated.
Turnaround Time	1–3 weeks

Test	Aerobic Bacterial Culture ID
Testing Lab	Anchorage
Disease(s)	Sepsis, infection
Organism(s)	Aerobic bacteria
Test Method	Culture and identification
Availability	Referrals only, no routine cultures.
Specimen	Blood, CSF, Tissue, Wounds
Storage/ Transport	Ambient temperature Package and label as Biological Specimens, Category B.
Results	Organism identified (genus and species)
Turnaround Time	2-5 days

Test	Aeromonas
Testing Lab	Anchorage
Disease(s)	Bacterial gastroenteritis
Organism(s)	*Aeromonas* species
Test Method	Culture
Specimen	Stool in Enteric Transport Media (ETM)
Special Conditions	Specimen should not be contaminated with water, urine, barium, antibiotics or mineral oil.
Specimen Collection	1. Collect stool in clean dry container or on plastic wrap stretched across toilet. 2. **Sample must be placed into ETM within one hour of sample collection**. 3. Carefully open ETM, use scoop mounted in lid to place approximately a walnut size amount of stool in to transport. Add enough stool to fill exactly to **red fill line.** Do not overfill.
Storage/ Transport	Ambient temperature
Results	*Aeromonas* species Isolated/Not Isolated
Turnaround Time	2-7 days

Test	Anaerobic Bacterial Culture ID
Testing Lab	Anchorage
Disease (s)	Sepsis, infection
Organism(s)	Anaerobic bacteria
Test Method	Culture and identification
Availability	Referrals only, no routine cultures. No post-mortem samples.
Special Conditions	Sample must be kept in anaerobic conditions during transport.
Specimen	Blood, Tissue, Wounds
Storage/ Transport	Store and transport at ambient temperature, under anaerobic conditions. Specimens must be received within 24 hours of collection. Package and label as Biological Substance, Category B.
Results	Organism identified (genus and species)
Turnaround Time	3-5 days

Test	Anthrax
Testing Lab	Anchorage
Disease(s)	Anthrax infection forms: Cutaneous, gastrointestinal, or inhalation. Malignant pustule, malignant edema, Woolsorter disease, Ragpicker disease
Organism	*Bacillus anthracis*
Availability	All clients upon consultation with Section of Epidemiology 907-269-8000 during business hours or 1-800-478-0084 during non-business hours. Contact the Alaska State Public Health Laboratory – Anchorage prior to submitting samples (907-334-2100)
Specimen	Bacterial isolate, cutaneous lesion, stool, rectal swab, blood cultures, whole blood, sputum, CSF, tissue, nasal swab (for intentional release exposures), environmental samples
Specimen Collection	Refer to ASM Sentinel Level Clinical Microbiology Guidelines (http://www.asm.org/index.php/public-policy/issues/sentinel-laboratory-guidelines). Contact the Alaska State Public Health Laboratory – Anchorage with questions.
Storage/ Transport	Store refrigerated. Ship with cool packs. Ambient temperature shipping is acceptable. Package and label as Biological Substance, Category B, ship as quickly as possible.
Results	Presumptive *B. anthracis* detected/not detected Confirmatory *B. anthracis* detected/not detected
Turnaround Time	2 days

Test	Blood Parasites
Testing Lab	Anchorage
Disease(s)	Malaria, Babesiosis, Trypanosomiasis
Organism(s)	*Plasmodium falciparum, P. malariae, P. ovale, P. vivax, Babesia species, and Trypanosoma species*
Test Method	Microscopic examination
Specimen	EDTA blood sample and peripheral blood smears (both thick and thin)
Collection Container	EDTA blood tube and peripheral blood smears (thick and thin)
Specimen Collection	Refer to CDC DPDx Website: http://www.dpd.cdc.gov/dpdx/HTML/DiagnosticProcedures.htm
Special Conditions	Specimens should be collected before treatment is initiated. Multiple specimens may be necessary at 8 to 12 hour intervals over 2 to 3 days. Include travel history if applicable. CDC Malaria Case Surveillance Report Form: http://www.cdc.gov/malaria/report.html
Storage/ Transport	Store refrigerated. Ship ambient temperature. Do not freeze. Samples >7 days old will not be tested.
Results	No Blood Parasites observed *Plasmodium falciparum* *Plasmodium malariae* *Plasmodium ovale* *Plasmodium vivax* *Babesia* species *Trypanosoma* species
Turnaround Time	1-2 days

Test	Botulism
Testing Lab	Anchorage
Disease(s)	Foodborne, wound, intestinal, or infant botulism
Organism(s) or Agent(s)	Botulinum neurotoxin producing species of *Clostridium* OR Botulinum neurotoxin
Test Method	Culture and/or toxin assay
Availability	All clients upon consultation with Section of Epidemiology 907-269-8000 during business hours or 1-800-478-0084 during non-business hours. Contact the Alaska State Public Health Laboratory – Anchorage prior to submitting samples (907-334-2100).
Specimen	Stool, enema fluid, gastric aspirate, pre-antitoxin serum, food, and environmental samples. Click here for Botulism Detailed Collection Instructions
Specimen Collection	Refer to ASM Sentinel Level Clinical Microbiology Guidelines. Contact the Alaska State Public Health Laboratory – Anchorage with questions.
Storage/ Transport	Store refrigerated. Ship with cool packs. Package and label as Biological Substance, Category B, ship as quickly as possible.
Results	Direct Toxin Assay *Clostridium botulinum* toxin detected (type specified) Non-specific toxicity demonstrated No toxin detected Culture *Clostridium botulinum* isolated (toxin producing type specified) *Clostridium botulinum* not isolated No growth
Turnaround Time	Toxin 14 days Culture 7-14 days

Test	Brucella
Testing Lab	Anchorage
Disease(s)	Brucellosis, Undulant fever, Malta fever
Organism(s)	*Brucella* spp.
Availability	All clients upon consultation with Section of Epidemiology 907-269-8000 during business hours or 1-800-478-0084 during non-business hours. Contact the Alaska State Public Health Laboratory – Anchorage prior to submitting samples.
Specimen	Organism isolate, blood, serum, spleen, liver, abscess, environmental samples, food
Specimen Collection	Refer to ASM Sentinel Level Clinical Microbiology Guidelines. Contact the Alaska State Public Health Laboratory – Anchorage with questions.
Storage/ Transport	Store refrigerated. Ship with cool packs. Ambient temperature shipping is acceptable. Package and label as Biological Substance, Category B, ship as quickly as possible.
Results	Presumptive/Confirmatory Brucella spp. detected/ not detected *Brucella* serum antibody Titer specified
Turnaround Time	7-21 days

Test	*Burkholderia mallei, Burkholderia pseudomallei*
Testing Lab	Anchorage
Disease(s)	Glanders, Melioidosis
Organism(s)	*Burkholderia mallei* or *Burkholderia pseudomallei*
Availability	All clients upon consultation with Section of Epidemiology 907-269-8000 during business hours or 1-800-478-0084 during non-business hours. Contact the Alaska State Public Health Laboratory – Anchorage prior to submitting samples.
Specimen	Organism isolate, blood, serum, urine, abscesses, tissue aspirates, body fluids (throat, nasal, skin or sputum for intentional release exposures)
Specimen Collection	Refer to ASM Sentinel Level Clinical Microbiology Guidelines. Contact the Alaska State Public Health Laboratory – Anchorage with questions.
Storage/ Transport	Store refrigerated. Ship with cool packs. Ambient temperature shipping is acceptable. Package and label as Biological Substance, Category B, ship as quickly as possible.
Results	Presumptive *B. mallei* detected/not detected *B. pseudomallei* detected/not detected
Turnaround Time	3-7 days

Test	Campylobacter
Testing Lab	Anchorage
Disease(s)	Campylobacteriosis
Organism(s)	*Campylobacter jejuni, Campylobacter coli, Campylobacter species*
Test Method	Culture and identification
Specimen	Pure culture isolates (Cary Blair Transport Swabs) Stool in ETM (see Enteric Stool Culture)
Storage/ Transport	Ship stool at ambient temperature, isolates should shipped on cold packs Package and label as Biological Substance, Category B
Results	*Campylobacter jejuni* *Campylobacter coli* *Campylobacter* species; sent to CDC for confirmation
Turnaround Time	2-5 days
Notes	Laboratories should send all suspected and/or confirmed isolates to ASPHL for confirmation and epidemiological studies.

Test	Carboxyhemoglobin
	See Toxic Alcohols and Glycols

Test	Chemical Terrorism Event
Testing Lab	Anchorage
Agent	**Unknown** toxic chemical exposure(s)
Test Method	Rapid Toxic Screen (performed by the Centers for Disease Control and Prevention in Atlanta, GA)
Availability	Clients with suspected exposure to an **unknown** toxic chemical(s), as determined and prioritized by Epidemiology and law enforcement Contact the Alaska State Public Health Laboratory – Anchorage prior to submitting specimens
Specimen	Urine and whole blood
Specimen Collection	Complete instructions are available at http://www.bt.cdc.gov/labissues/pdf/shipping-samples.pdf **Urine:** at least 25 mL in a screw-capped plastic container with a plastic lid; freeze immediately. **Whole blood:** Use **three** 5 or 7 mL purple-top (EDTA) tubes, and **One** 3, 5 or 7 mL plasma tube (EITHER gray-top [glycolytic inhibitor, potassium oxalate] OR green-top [sodium heparin]).
Storage/ Transport	Refrigerate blood samples. Freeze urine samples. Sample flow may vary according to the specific circumstances of an event, but generally specimens will be delivered to the Alaska State Public Health Laboratory – Anchorage for processing. Specimens from the first 40 victims will be shipped immediately to the Centers for Disease Control and Prevention in Atlanta, Georgia for the Rapid Toxic Screen. Samples from additional victims will be analyzed when the results of the screen are complete. Contact the Alaska State Public Health Laboratory – Anchorage for complete shipping instructions. Also please refer to guidance provided at the CDC website (link above). Package and label as Biological Substance, Category B. Ship urine (frozen on dry ice) and blood samples (refrigerated with cold packs) in separate coolers.
Results	Samples are screened for the presence of over 150 toxic chemicals. Detected chemicals are identified and quantified. Federal and state experts will assist with the interpretation of results.
Turnaround Time	Partial results will be communicated as tests are performed sequentially at CDC, beginning approximately 36 hours after specimen receipt at the Alaska Public Health Laboratory. Full Rapid Toxic Screen results for the first 40 victims will be available approximately 4 days after specimen receipt at the Alaska Public Health Laboratory.

Test	Chlamydia & Gonorrhea (NAAT)
Testing Lab	Anchorage
Disease(s)	Chlamydia, Gonorrhea, STD
Organism(s)	*Chlamydia trachomatis* (CT), *Neisseria gonorrhoeae* (GC)
Test Method	Nucleic Acid Amplification (NAAT). Target Mediated Amplification (TMA) for the detection of ribosomal RNA (rRNA) from *Trichomonas vaginalis*.
Availability	Please contact the Alaska State Public Health Laboratory @ 907-334-2100 to set up an account for testing.
Specimen	Urine Vaginal Endocervical Urethral (male only) Rectal Oropharyngeal Conjunctival on prior approval
Specimen Collection	Gen-Probe APTIMA Combo2 Transport Tubes: Urine Collection Kit (yellow kit): • First catch urine must be added to transport within 24 hours of collection. Vaginal Swab Collection Kit (orange kit): • Follow instruction provided in kit Unisex Swab Collection Kit (blue kit): • Used for Endocervical, Urethral, Rectal and Oropharyngeal • Add swabs to transport immediately. • Do not submit white shafted cleaning swabs for testing. Click here for Oropharyngeal Collection Instructions Click here for Rectal Collection Instructions **Region X Infertility Prevention Program Participants should use the three-part Region X requisition forms.**
Special Conditions	**Not a test of cure.** Tests that are performed less than 4-6 weeks after completion of therapy might be falsely positive due to the presence of nonviable organisms.
Storage/ Transport	Ambient temperature Urine specimens must be tested within 30 days of collection, swab specimens within 60 days.
Results	*Chlamydia trachomatis* Positive/Negative *Neisseria gonorrhoeae* Positive/Negative
Turnaround Time	1-2 days

Test	Cytomegalovirus (CMV)
Testing Lab	Fairbanks
Disease(s)	Cytomegalovirus disease, congenital cytomegalovirus syndrome, hepatitis, mononucleosis.
Organism(s)	Cytomegalovirus
Test Method	Viral culture
Specimen	Nasopharyngeal swab, throat swab, urine, biopsy
Storage	Store refrigerated. Ship with cool packs.
Transport	Store refrigerated. Ship with cool packs.
Results	Positive/No Virus Detected
Turnaround Time	1 week to 4 weeks

Test	*Coxiella burnetii*
Testing Lab	Anchorage
Disease(s)	Q-Fever
Organism(s)	*Coxiella burnetii*
Availability	All clients upon consultation with Section of Epidemiology 907-269-8000 during business hours or 1-800-478-0084 during non-business hours. Refer to ASM Sentinel Level Clinical Microbiology Guidelines. Contact the Alaska State Public Health Laboratory – Anchorage prior to submitting samples.
Specimen	EDTA whole blood for PCR collected 1-7 days from onset of symptoms and prior to antibiotics. Serum for IFA (acute 1-7 days and convalescent 21-35 days from onset)
Storage/ Transport	Store refrigerated. Ship with cool packs. Ambient temperature shipping is acceptable. Package and label as Biological Substance, Category B, ship as quickly as possible.
Results	Presumptive *C. burnetii* detected/ not detected Confirmatory (Serum only) *C. burnetii* detected/ not detected
Turnaround Time	2 days for PCR 2-3 weeks for IFA Referral Testing

Test	Cyanide
Testing Lab	Anchorage
Toxic Effect	Inhibition of oxygen use by cells
Test Method	Gas Chromatography with Mass Selective Detection
Availability	Test not performed routinely and only with prior approval. Contact the Alaska State Public Health Laboratory – Anchorage. Phone business hours 907-334-2100; after hours on-call pager 1-800-224-7063.
Specimen	Collect whole blood in one 3, 5 or 7 mL EDTA (purple-top) tube.
Storage/ Transport	Store refrigerated. Ship with cool packs.
Results	Quantitative cyanide concentration
Turnaround Time	4 hours from time of receipt

Test	Diphtheria Culture
Testing Lab	Anchorage
Disease(s)	Diphtheria
Organism(s)	*Corynebacterium diphtheriae*
Test Method	Culture and identification
Specimen	Obtain material from the inflamed areas in the nasopharynx. If the membranes are present and can be removed, swab from beneath the membrane.
Collection Container	Culture Swab EZ
Special Conditions	Ship as soon as possible.
Storage/ Transport	Ship at ambient temperature. Package and label as Biological Substance, Category B.
Results	*Corynebacterium diphtheriae* Isolated/Not Isolated
Turnaround Time	3 days

Test	*E. coli* O157
Testing Lab	Anchorage
Disease(s)	Hemolytic Uremic Syndrome (HUS), bloody stool
Organism(s)	*Escherichia coli* O157:H7*, Escherichia coli* O157:NM
Test Method	Culture/Serotyping
Specimen	Pure culture isolates of suspected *E. coli* O157 Stool in ETM (see Enteric Stool Culture)
Storage/ Transport	Ambient temperature Package and label as Biological Substance, Category B.
Results	*Escherichia coli* O157:H7 *Escherichia coli* O157:NM No *Escherichia coli* isolated
Turnaround Time	2-5 days
Notes	Laboratories should send all suspected and/or confirmed isolates to ASPHL for confirmation and epidemiological studies.

Test	Ectoparasites
Testing Lab	Anchorage
Disease(s)	Ectoparasites, arthropods, lice, crabs, mites, bedbugs
Organism(s)	*Cimex lectularius, Pediculus capitis, Pediculus humanus, Phthirus pubis, Pulex irritans*
Test Method	Morphological identification
Specimen	Suspect arthropod
Specimen Collection	Comb for nits, or use forceps to pluck hair; place into clean, dry tube with secure lid.
Storage/ Transport	Ambient temperature
Results	No Ectoparasites observed *Cimex lectularius* (bed bug) *Pediculus capitis* (head louse) *Pediculus humanus* (body louse) *Phthirus pubis* (crab louse) *Pulex irritans* (human flea)
Turnaround Time	1 day

Test	Enteric Stool Culture
Testing Lab	Anchorage
Disease(s)	Salmonellosis, Shigellosis, Campylobacteriosis, Cholera, Foodborne illness, Food poisoning, enteric bacterial infection, Hemolytic Uremic Syndrome (HUS), bloody stool
Organism(s)	*Salmonella, Shigella, Campylobacter*, *E.coli* 0157:H7 NOTE: Additional testing for *Yersinia entercolitica, Vibrio* species, *Aeromonas* species and *Plesiomonas* species are performed only upon request.
Test Method	Culture and Identification NOTE: Shiga-toxin testing by EIA for Enterohemorrhagic *E. coli* is performed on all stool cultures.
Specimen	Stool in Enteric Transport Media (ETM)
Special Conditions	• Multiple samples must be collected 24-48 hours apart. • Specimen should not be contaminated with water, urine, barium, antibiotics or mineral oil. • Consult laboratory if *Staphylococcus aureus* or *Bacillus cereus* are suspected.
Specimen Collection	1. Collect stool in clean dry container or on plastic wrap stretched across toilet. 2. **Sample must be placed into ETM within one hour of sample collection**. 3. Carefully open ETM, use scoop mounted in lid to place approximately a walnut size amount of stool in to transport. Add enough stool to fill exactly to **red fill line.** Do not overfill. Click here for detailed collection instructions.
Storage/ Transport	Ambient temperature. Samples must be tested within 10 days of collection.
Results	*Salmonella* species — Isolated/Not Isolated *Shigella* species — Isolated/Not Isolated *Campylobacter* species — Isolated/Not Isolated *Escherichia coli* 0157 — Isolated/Not Isolated Usual gram negative flora — Present/No Growth If Salmonella or Shigella are isolated, serotyping will be performed Example: *Shigella sonnei,* Serogroup D If additional organisms are requested: *Vibrio* species — Isolated/Not Isolated *Yersinia entercolitica* — Isolated/Not Isolated *Aeromonas* species — Isolated/Not Isolated *Plesiomonas shigelloides* — Isolated/Not Isolated
Turnaround Time	2-5 days

Test	Enterovirus
Testing Lab	Fairbanks
Disease(s)	Acute hemorrhagic conjunctivitis, acute pharyngitis, tonsillitis, herpangina, aseptic meningitis, nonspecific febrile illness, hand-foot-and-mouth syndrome, polio, acute flaccid paralysis, respiratory disease, rash
Organism(s)	Coxsackie A & B, Echovirus and Enterovirus
Test Method	Culture and serum neutralization
Specimen	Nasopharyngeal swab, throat swab, stool, vesicular fluid, biopsy tissue. Use collection swab(s) included in UTM kit, place swab into Universal Transport Media. Cerebral spinal fluid in sterile container.
Storage/ Transport	Store refrigerated. Ship with cool packs.
Results	Enterovirus specific virus classification Positive/No Virus Recovered Strain typing is performed if a virus is isolated.
Turnaround Time	2-4 weeks

Test	Ethanol
	See Toxic Alcohols and Glycols

Test	Ethylene Glycol
	See Toxic Alcohols and Glycols

Test	Fluorescent Treponemal Antibody (FTA-ABS)
Testing Lab	Anchorage
Disease(s)	Syphilis
Organism(s)	*Treponema pallidum*
Test Method	Indirect Fluorescent Antibody Confirmatory Test – FTA-ABS
Specimen Collection	Serum Plasma and hemolyzed blood are NOT acceptable
Storage/ Transport	Store refrigerated for up to 7 days, freeze sample if testing will be delayed. Ship ambient temperature.
Results	FTA-ABS Reactive/Nonreactive
Turnaround Time	1-5 days, testing routinely performed on Wednesday. Previously positive patients are not retested.

Test	Giardia/Cryptosporidium by DFA
Testing Lab	Anchorage
Disease(s)	Giardiasis, Cryptosporidiosis
Organism(s)	*Giardia lamblia, Cryptosporidium parvum*
Test Method	Direct Fluorescent Antibody (DFA) stain
Specimen	Stool in 10% Formalin and PVA Fixative (O&P Collection Kit) See Ova & Parasite Exam
Storage/ Transport	Ambient temperature
Results	*Giardia lamblia* Positive/Negative *Cryptosporidium parvum* Positive/Negative
Turnaround Time	5 days

Test	*Haemophilus influenzae* Culture/Serotyping
Testing Lab	Anchorage
Disease(s)	Bacterial Meningitis, Pneumonia, Otitis Media
Organism(s)	*Haemophilus influenzae*
Test Method	Culture, Identification, and Serotyping
Specimen	Pure isolate on chocolate agar slant
Storage/ Transport	Ship ambient temperature. Do not freeze
Results	*Haemophilus influenzae* Isolated/Not Isolated Serotyping Group a, b or f Typing for uncommon serotypes referred to CDC.
Turnaround Time	1-3 days
Notes	Laboratories should send all suspected and/or confirmed isolates to ASPHL for confirmation and epidemiological studies. Samples from sterile sites (blood, CSF) can be sent directly to CDC Arctic Investigations for PCR testing. Samples are shared between the two labs.

Test	Hepatitis (Viral)
Testing Lab	Fairbanks
Disease(s)	Serum hepatitis, epidemic hepatitis, non-A, non-B hepatitis
Organism(s)	Hepatitis A Virus, Hepatitis B Virus, Hepatitis C Virus
Specimen	Serum or plasma
Specimen Requirements	Follow-up testing of hepatitis B carriers is recommended every 6 months.
Test Method	EIA Serology
Storage/ Transport	Store refrigerated. Ambient temperature shipping is permissible. Do not freeze.
Results	Hepatitis A Virus Antibody Positive/Negative Hepatitis B Virus Antibody and/or Antigen Positive/Negative Hepatitis C Virus Antibody Positive/Negative Interpretation of Results
Turnaround Time	3-10 days

Test	Herpes Simplex Virus (HSV)
Testing Lab	Fairbanks
Disease(s)	Herpes, Human Herpes virus 1 and 2
Organism(s)	Herpes Simplex Virus Type 1, Herpes Simplex Virus Type 2
Test Method	Culture with IFA confirmation (Preferred method) EIA Serology – Typing by strain specific IgG
Specimen	**Culture:** Vesicle fluid, ulcer swabs, ocular swabs. Use collection swab(s) included in UTM kit, place swab into Universal Transport Media. **Serology:** Serum
Storage/ Transport	Store refrigerated. Ship with cool packs. Freeze-thaw cycles decrease isolation rate in culture. Ship to lab as soon as possible.
Results	Herpes Simplex Virus 1 Positive/No Virus Recovered Herpes Simplex Virus 2 Positive/No Virus Recovered HSV Type 1/HSV Type 2 Antibody Positive/Negative Interpretation of Results
Turnaround Time	1-3 weeks for serology 2–7 days for culture

Test	Human Immunodeficiency Virus (HIV–1)
Testing Lab	Fairbanks
Disease(s)	HIV, AIDS (Acquired Immunodeficiency Syndrome)
Organism(s)	Human Immunodeficiency Virus
Test Method	Screening: 4th Gen EIA (Detects: p24 Antigen, HIV 1&2 Antibody) Confirmation: Multispot Differentiation Assay*
Specimen	Spun serum or plasma. Serum separator tube preferred.
Storage/ Transport	For best test results and preservation of the p24 antigen, specimens should be collected and spun down in a serum separator tube and refrigerated immediately. Please send the specimen to ASVL as quickly as possible. Ideally, samples should be stored for no longer than 2 days at room temperature or 7 days at 2-8^0 C, including the time that samples are in transit. If you know that your transit time to ASVL is substantially greater than 2 days, you can improve p24 reactivity if you spin the sample down, transfer the serum to a transport vial, and freeze the serum. Then ship the frozen serum to us via priority mail or faster. **DO NOT** freeze samples still containing red blood cells.
Results	Human Immunodeficiency Virus Antibody Nonreactive for HIV Ag/Ab Reactive/Nonreactive for HIV-1 Ab Reactive/Nonreactive for HIV-2 Ab
Turnaround Time	1–3 days

* Specimens may be referred to the University of Washington Dept. of Laboratory Medicine or to CDC for confirmatory testing if ASVL obtains either discrepant results or a positive HIV-2 specimen. ASVL may need to request additional specimens for confirmation.

Test	Influenza Virus
Testing Lab	Primary: Fairbanks Surge: Anchorage
Disease(s)	Influenza, Flu
Organism(s)	Influenza Type A Virus, Influenza Type B Virus
Test Method	PCR (Polymerase Chain Reaction) Note: All respiratory specimens will be tested for influenza by PCR. Specimens that are positive for influenza by PCR will be finalized; specimens that are negative will be cultured for other viruses.
Availability	Test performed routinely. * Testing for Influenza A (H5) must be approved by the Section of Epidemiology. Business Hours: 907-269-8000; After Hours: 1-800-478-0084
Specimen	Acceptable specimens: Nasopharyngeal Swab(NP) Tracheal Aspirate (TA) Nasal Swab (NS) Broncheoalveolar Lavage (BL) Nasal Aspirate (NA) Bronchial Wash (BW) Nasal Wash (NW) Lung Tissue (LT) Dual NP/TS
Collection	Collection materials are available upon request: Swab: place swab into UTM and break swab **below** lid line Wash or lavage: aseptically transfer no more than 3 ml to UTM Lung tissue: transfer a pea sized piece (about 1 gram) into UTM Be sure cap is twisted down completely & tape in clockwise direction Place UTM inside the biohazard bag; put Lab Request in outer pocket
Storage/ Transport	Store the specimens in your refrigerator until ready to ship Pack samples on cool packs to preserve viral integrity Ship as a Biological Substance Category B UN3373 If you are in an outlying area: Use the pre-addressed **Priority** Mail Labels provided Mail Monday or Tuesday to avoid weekends at the Post Office
Results	**Possible Positive Results** **Negative Results** Influenza B Negative Influenza 2009 A/H1 Influenza A/H1 Influenza A/H3 Influenza A/H5*
Turnaround Time	PCR: 1-3 days

Test	Isopropanol
	See Toxic Alcohols and Glycols

Test	Lead (Blood)
Testing Lab	Anchorage
Test Method	Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Availability	All clients upon consultation with Section of Epidemiology 907-269-8000. Contact the Alaska State Public Health Laboratory - Anchorage prior to submitting specimens.
Specimen	Whole blood
Specimen Collection	Use one 5 or 7 mL non-SST K_2-EDTA, Royal Blue or Tan top tube. A 5 or 7 mL lavender-top (EDTA) tube is also acceptable.
Storage/ Transport	Store refrigerated. Ship with cool packs or ambient.
Results	A quantitative concentration will be reported.
Turnaround Time	1-2 days

Test	Mercury in Hair
Testing Lab	Anchorage
Test Method	Direct mercury analyzer
Availability	All clients as requested through Section of Epidemiology
Specimen	Hair
Specimen Collection	Sample collection kits are available from Section of Epidemiology 907-269-8000 during business hours or 1-800-478-0084 during non-business hours. Complete instructions and illustrations are available at http://www.epi.hss.state.ak.us/eh/hot0602/hairinfopacket.pdf
Storage/ Transport	Place the labeled zip-lock bag in a standard envelope and mail to the Alaska State Public Health Laboratory – Anchorage, to the attention of the Chemistry section. The sample is not a considered a biological substance and is not subject to dangerous goods shipping regulations.
Results	Quantitative mercury concentration
Turnaround Time	1 week

Test	Metals
Testing Lab	Anchorage
Agents	Inorganic chemical elements in urine: Berylium, Cobalt, Molybdenum, Cadmium, Antimony, Cesium, Barium, Tungsten, Platinum, Thallium, Lead, Uranium, Arsenic, Selenium
Test Method	Inorganic elements by Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Availability	All clients upon consultation with Section of Epidemiology 907-269-8000 during business hours or 1-800-478-0084 during non-business hours Contact the Alaska State Public Health Laboratory – Anchorage prior to submitting specimens.
Specimen	Urine
Specimen Collection	2-10 mL urine in a screw-capped plastic container with a plastic lid. Please also submit an empty, labeled specimen container from the same lot to test for background contamination.
Storage/ Transport	Refrigerate and store at 4°C or below for Anchorage area delivery. Outside of Anchorage area, freeze prior to shipment and ship with cold packs or dry ice to minimize spillage. Package and label as Biological Substance, Category B.
Results	A quantitative concentration will be reported for each detected element.
Turnaround Time	1–2 days

Test	Methanol
	See Toxic Alcohols and Glycols

Test	Mumps Virus
Testing Lab	Fairbanks
Disease(s)	Mumps, orchitis
Organism(s)	Mumps Virus
Test Method	Culture with IFA confirmation (Preferred method) EIA IgG serology for immune status
Specimen	**Culture:** Saliva from Stensen's duct, buccal swab of Stensen's duct. Use collection swab(s) included in UTM kit, place swab into Universal Transport Media. Urine and CSF (if neurological symptoms) in sterile container. **Serology**: Draw acute specimen within 5 days of onset and convalescent serum 2-3 weeks later.
Storage/ Transport	Store refrigerated. Ship with cool packs.
Results	Mumps Virus Positive/No Virus Recovered Mumps IgG Antibody Positive/Negative Interpretation of Results
Turnaround Time	1-4 weeks

Test	*Mycobacteria* Culture (TB)
Testing Lab	Anchorage
Disease(s)	Tuberculosis, TB, Consumption
Organism(s)	*Mycobacterium tuberculosis* complex and other Mycobacterium species. For example: *M. avium-intracellulare* complex, *M. fortuitum, M. gordonae, etc*.
Test Method	Acid fast bacilli (AFB) smear, liquid (MGIT) and solid (7H11) culture, DNA probe confirmation, HPLC identification and drug susceptibility (TB only), TB PCR (NAAT). See TB PCR Testing Information Sheet for instructions on requesting testing.
Specimen	Sputum, bronchial wash, urine, stool, CSF, gastric lavage, blood, bone, bone marrow, tissue, body fluids and exudates.
Specimen Collection	**Sputum**: 5-10 mL in sterile 50 mL conical tube with 50 mg of sodium carbonate preservative. Collect first morning specimens on three consecutive days. **Bronchial wash**: ≥ 5 mL in sterile container **Body fluids**: ≥ 10-15 mL in sterile 50 mL conical tube. **Tissue**: In sterile container, add sterile saline to cover. Click here for Sputum collection instructions Click here for Tuberculosis/Mycobacterium culture detailed collection instructions
Storage/ Transport	Store refrigerated. Ship with cool packs. Ambient temperature shipping is acceptable. **Specimens must be received in Alaska State Public Health Laboratory – Anchorage within 10 days of collection.**
Results	**AFB Smear Result** AFB Smears not performed on blood, bone marrow, CSF, stool, or urine No AFB observed 1+, 2+, 3+, or 4+ AFB observed **TB PCR Results** See TB PCR Testing Information Sheet **TB Culture Result** No *Mycobacterium* species, including *M. tuberculosis,* isolated. *Mycobacterium tuberculosis* complex by DNA probe *Mycobacterium avium/intracellulare* complex by DNA probe Other *Mycobacterium* identified by HPLC **Susceptibilities** Performed on *M. tuberculosis* complex only Streptomycin, INH, Rifampin, Ethambutol, PZA Susceptible/Resistant
Turnaround Time	**AFB smear** – 1 day **Preliminary results** – 3 weeks **Negative Culture** – 6 weeks (minimum) **Positive Culture** – As detected and confirmed **Susceptibilities** – 1-3 weeks from identification

Test	Mycology Culture (Mold/Yeast)
Testing Lab	Anchorage
Disease(s)	Candidiasis, Aspergillosis, yeast, ringworm, Tinea, jock itch, athlete's foot **NOTE:** The State of Alaska Public Health Laboratory does not identify or confirm *Coccidioides immitis/posadasii, Histoplasma capsulatum,* or *Blastomyces dermatitidis.* If these organisms are suspected, send to a reference laboratory.
Organism(s)	Fungus and Yeast genus
Test Method	Culture and identification
Specimen	Pure cultures or direct inoculation of minced skin, minced nails, scrapings, hair, tissues, blood, eye, ear, nasal, nasopharyngeal, mouth, throat, pus, exudate, drainage, body fluids, urine, or sputum. Submit specimens on **both Sabouraud and Mycosel** agar slants.
Specimen Collection	Click here for Mycology Detailed Collection Instructions
Storage/ Transport	Incubate at ambient temperature or 30° C until growth is visible. Do not freeze. Ship at ambient temperature.
Results	Fungus isolated to genus, speciated where possible No Fungus Isolated No Growth
Turnaround Time	4-6 weeks

Test	*Neisseria gonorrhoeae* Culture
Testing Lab	Anchorage
Disease(s)	Gonorrhea, clap, GC
Organism(s)	*Neisseria gonorrhoeae*
Test Method	Culture, DNA Confirmation, Beta-lactamase susceptibility
Specimen	Throat or rectal swab
Special Conditions	Specimens collected on InTray plates should be incubated for 24-48 hours at 37C prior to submitting specimen.
Specimen Collection	Collect samples using InTray System, supplied by ASPHL. Isolates may also be submitted on chocolate slants.
Storage/ Transport	Ambient temperature
Results	*Neisseria gonorrhoeae* Isolated/Not Isolated
Turnaround Time	1-3 days

Test	*Neisseria meningitidis* Culture/Serotyping
Testing Lab	Anchorage
Disease(s)	Meningitis
Organism(s)	*Neisseria meningitidis*
Test Method	Culture/Serotyping
Specimen	Isolated organism
Storage/ Transport	Ambient temperature
Results	*Neisseria meningitidis* Isolated/Not Isolated Serotyping Group A, B, C, Y, NON-TYPING Typing for uncommon serotypes referred to CDC.
Turnaround Time	2-4 days
Notes	Laboratories should send all suspected and/or confirmed isolates to ASPHL for confirmation and epidemiological studies. Samples from sterile sites (blood, CSF) can be sent directly to CDC Arctic Investigations for PCR testing. Samples are shared between the two labs.

Test	Norovirus
Testing Lab	Fairbanks
Disease(s)	Noro, Norovirus, Norwalk-like disease, epidemic viral gastroenteropathy
Organism(s)	Norovirus, Norwalk-like Viruses
Test Method	PCR
Availability	Testing will only be completed for outbreak situations. Contact Section of Epidemiology 907-269-8000 during business hours or 1-800-478-0084 during non-business hours.
Specimen	Raw stool, vomit, or emesis in sterile container. (Specimens must NOT be submitted in UTM). Collect at least 5 ml. Click here for Norovirus Detailed Collection Instructions
Storage/ Transport	Store refrigerated. Ship with cool packs.
Results	Norovirus Positive (Genogroup I or II)/Negative
Turnaround Time	2–7 days

Test	Orthopox Viruses
Testing Lab	Anchorage
Disease(s)	Pustular or vesicular rash illness
Organism(s)	Variola, Vaccinia (cow pox), other animal orthopox viruses (monkeypox, camelpox, ectromelia, and gerbilpox).
Availability	All clients upon consultation with Section of Epidemiology 907-269-8000 during business hours or 1-800-478-0084 during non-business hours. Contact the Alaska State Public Health Laboratory – Anchorage prior to submitting samples (907-334-2100).
Specimen	**Do NOT collect any specimens.** Contact Section of Epidemiology immediately for consultation prior to specimen collection. Microscope slide touch preps, scabs, dried vesicular fluid, vesicular swabs, environmental samples.
Storage/ Transport	Store refrigerated. Ship with cool packs. Ambient temperature shipping is acceptable. Package and label as Biological Substance, Category B, ship as quickly as possible.
Results	Pox virus DNA Detected/Not Detected
Turnaround Time	1-2 days

Test	Ova & Parasite Exam
Testing Lab	Anchorage
Disease(s)	Giardiasis (beaver fever), Amebiasis, Intestinal Parasites Rare/unusual parasites (Trichinosis, Leishmaniasis) are referred to a reference laboratory; please contact ASPHL or Epidemiology for more information.
Organism(s)	*Giardia lamblia, Entamoeba histolytica*, *Ascaris* spp., protozoans, worms, tapeworms, and flukes **Trichinella* spp., *Leishmania* spp. by referral.*
Test Method	Formalin ethyl-acetate concentration wet mount and Zinc-PVA Trichrome Stain
Special Conditions	• Multiple samples must be collected 24-48 hours apart. • Specimen should not be contaminated with water, urine, barium, antibiotics or mineral oil. • Contrast media interferes with testing, delay collection until one week after procedure
Specimen Collection	**Stool:** Collect stool in clean, dry container. Add stool (walnut size formed stool or ≈5 mL of liquid) to **10% Formalin** vial (yellow top) <u>and</u> **Zn PVA** vial (blue top) preservative **to red fill line only**. <u>Do not overfill.</u> **Worms:** Place worm in 10% Formalin (yellow top) vial or leak-proof container with normal saline to cover. Please provide travel history if known.
Storage/ Transport	Ambient temperature
Results	No parasites observed Parasite observed and identified (genus and species) Example: *Giardia lamblia* cysts
Turnaround Time	3-5 working days from date of receipt in laboratory

Test	Parainfluenza Virus
Testing Lab	Fairbanks
Disease(s)	Common cold, bronchitis, pneumonia, croup, acute febrile respiratory disease
Organism(s)	Parainfluenza virus Types 1, 2, and 3
Test Method	Culture with IFA confirmation
Specimen	Nasal washings, aspirates, nasopharyngeal swabs are preferred. Throat swabs are satisfactory. Use collection swab(s) included in UTM kit, place swab into Universal Transport Media.
Storage/ Transport	Store refrigerated. Ship with cool packs.
Results	Parainfluenza Type 1 Positive/No Virus Recovered Parainfluenza Type 2 Positive/No Virus Recovered Parainfluenza Type 3 Positive/No Virus Recovered
Turnaround Time	1-2 weeks

Test	Pertussis Culture and PCR
Testing Lab	Anchorage
Disease(s)	Whooping cough
Organism(s)	*Bordetella pertussis* and *Bordetella parapertussis*
Test Method	Culture Polymerase Chain Reaction (PCR)
Specimen Collection	• **Use Pertussis Collection Kit** (available from ASPHL) • **Culture**: NP swab inserted into Regan-Lowe Transport Medium, cut swab shaft to close lid. • **PCR**: NP swab (COPAN) in sterile dry tube. ***PCR testing will only be performed if specimen for culture is also submitted.* • **Symptom information on Test Request Form is required**. (Cough illness? Duration? Antibiotic treatment?)
Detailed Collection Instructions	Click here for Pertussis Culture & PCR-Detailed Collection Instructions
Storage/ Transport	• Ship specimen immediately at ambient temperature or with an ice pack. • Refrigerate PCR swab (COPAN) until shipped. • If specimen transit will be delayed, pre-incubate inoculated Regan-Lowe medium at 35°C for 48 hours and ship at ambient temperature or with an ice pack. • Samples must be received no later than 8 days after collection for recovery of *Bordetella* spp.
Results	**Culture** *Bordetella pertussis* Isolated/Not Isolated *Bordetella parapertussis* Isolated/Not Isolated **PCR** *B. pertussis* DNA Detected/Not Detected *B. parapertussis* DNA Detected/Not Detected
Interpretation	*Bordetella* PCR testing results must be correlated with patient history and/or culture results to confirm as a case of pertussis infection. The PCR detects the presence of a specific DNA sequence present in *Bordetella pertussis*. This sequence is also present in *Bordetella holmesii* (IS481), an uncommon respiratory pathogen of humans.
Turnaround Time	Culture: 7 days PCR: 1-4 days (Testing performed on Monday and Thursday)

Test	Pulsed-Field Gel Electrophoresis (PFGE)
Testing Lab	Anchorage
Disease(s)	Foodborne, diarrhea, nosocomial infections
Organism(s)	*Escherichia coli* 0157:H7*, Salmonella* species*, Shigella* species*, Campylobacter* species*, Vibrio* species*, Listeria* species and all Shigatoxin producing *Escherichia coli* (STEC)
Test Method	Pulsed-Field Gel Electrophoresis (PFGE) - DNA fingerprinting of bacteria
Specimen	Pure culture isolates
Special Conditions	Used for epidemiological investigation and surveillance of disease outbreaks.
Storage/ Transport	Ambient temperature
Results	For epidemiological investigation purposes only; not to be used for diagnostic purposes. Results are reported to Epidemiology. Alaska and CDC restriction enzyme pattern numbers are assigned and compared to a local and national database network, PulseNet.
Turnaround Time	3-5 days

Test	Pinworm Exam
Testing Lab	Anchorage
Disease(s)	Pinworm
Organism(s)	*Enterobius vermicularis*
Test Method	Microscopic Examination
Specimen Collection	Using pinworm paddle with adhesive side outward, press paddle firmly several times against the right and left perianal folds. Return paddle to transport vial, secure cap and label.
Storage/ Transport	Ambient temperature
Results	Pinworm (*Enter. vermicularis*) Observed/Not Observed
Turnaround Time	1-2 days

Test	*Plesiomonas shigelloides*
Testing Lab	Anchorage
Disease(s)	Bacterial gastroenteritis
Organism(s)	*Plesiomonas shigelloides*
Test Method	Culture
Specimen	Stool in ETM (see Enteric Stool Culture)
Special Conditions	Specimen should not be contaminated with water, urine, barium, antibiotics or mineral oil.
Specimen Collection	1. Collect stool in clean dry container or on plastic wrap stretched across toilet. 2. **Sample must be placed into ETM within one hour of sample collection**. 3. Carefully open ETM, use scoop mounted in lid to place approximately a walnut size amount of stool in to transport. Add enough stool to fill exactly to **red fill line.** Do not overfill.
Storage/ Transport	Ambient temperature
Results	*Plesiomonas shigelloides* Isolated/Not Isolated
Turnaround Time	2-7 days

Test	Rabies
Testing Lab	Fairbanks
Disease(s)	Rabies, Acute Viral Encephalomyelitis
Organism(s)	Rabies Virus
Test Method	Direct Fluorescence Assay
Availability	All testing must be approved by the Section of Epidemiology 907-269-8000 during business hours and 1-800-478-0084 during non-business hours. Rabies Request Form Rabies Specimen Collection Instructions Rabies Shipping Label Testing for human rabies is available from CDC with approval from Section of Epidemiology.
Specimen	Undamaged animal head and brainstem. Entire carcass of animals less than 5 pounds may be submitted. Note: Animals will not be returned, remains will be incinerated.
Storage/ Transport	Store refrigerated. Ship with cool packs. Use a leak-proof container with a proper shipping label to ship specimens.
Results	Rabies Virus Positive/Negative
Turnaround Time	1-4 days

Test	Reference Bacterial Culture
Testing Lab	Anchorage
Test Method	Culture and identification
Special Conditions	If referring potential bioterrorism agent specimen for testing, please contact the Alaska State Public Health Laboratory – Anchorage.
Specimen	Isolated organism
Storage/ Transport	Ambient temperature Package and label as Biological Substance, Category B.
Results	Organism identified (genus and species)
Turnaround Time	7-10 days

Test	Rhinovirus
Testing Lab	Fairbanks
Disease(s)	Common cold
Organism(s)	Rhinovirus (100 Strains)
Test Method	Culture
Specimen	Nasal washings, aspirates, and nasopharyngeal swabs are preferred. Throat swabs are acceptable. Use collection swab(s) included in UTM kit, place swab into Universal Transport Media.
Storage/ Transport	Store refrigerated. Ship with cool packs.
Results	Rhinovirus Positive/No Virus Recovered
Turnaround Time	1-3 weeks

Test	Ricin
Testing Lab	Anchorage
Disease(s)	Ricin poisoning
Agent	Toxin from *Ricinus communis* (castor bean plant)
Availability	All clients upon consultation with Section of Epidemiology 907-269-8000 during business hours or 1-800-478-0084 during non-business hours. Contact the Alaska State Public Health Laboratory – Anchorage prior to submitting samples 907-334-2100.
Specimen	Environmental samples
Storage/ Transport	Store refrigerated. Ship with cool packs. Ambient temperature shipping is acceptable. Package and label as Biological Substance, Category B.
Results	Ricin Toxin Not Detected/Detected *Ricin communis* DNA Not Detected/Detected
Turnaround Time	1-2 days

Test	Ricinine
Testing Lab	Anchorage
Agents	Ricinine marker for ricin toxin
Test Method	Liquid Chromatography/Tandem Mass Spectrometry
Availability	Contact the Alaska State Public Health Laboratory – Anchorage prior to submitting specimens 907-334-2100 during business hours or after hours on-call pager (855)222-0951.
Specimen	Urine
Specimen Collection	Submit urine in sterile 50 mL conical tube.
Storage/ Transport	Store refrigerated. Ship with cool packs.
Results	A quantitative concentration will be reported.

Test	Syphilis Screen - RPR
Testing Lab	Anchorage
Disease(s)	Syphilis, Neuro-syphilis
Organism(s)	*Treponema pallidum*
Test Method	Slide agglutination
Specimen Collection	Serum 2–5 mLs
Storage/ Transport	Store refrigerated. Freeze sample if delay in testing is anticipated. Ship ambient temperature. FTA confirmatory testing requires samples to be frozen within 7 days of collection, a new sample may be required for reactive samples if storage conditions are not met.
Results	RPR Reactive (with Dilutions)/Nonreactive FTA-ABS automatically performed on Reactive RPRs
Turnaround Time	1-2 days

Test	Respiratory Syncytial Virus (RSV)
Testing Lab	Fairbanks
Disease(s)	Bronchiolitis, pneumonia, common cold
Organism(s)	Respiratory Syncytial Virus (RSV)
Test Method	DFA (Direct Fluorescent Antibody) Note: All respiratory samples from children 0 thru 3yrs will be tested for RSV between the months of November and June by DFA. Specimens that are positive for RSV will be finalized; specimens that are negative will be cultured for other viruses.
Specimen	Acceptable specimens: Nasopharyngeal Swab(NP) — Tracheal Aspirate (TA) Nasal Swab (NS) — Broncheoalveolar Lavage (BL) Nasal Aspirate (NA) — Bronchial Wash (BW) Nasal Wash (NW) — Dual NP/TS
Collection	Collection materials are available upon request Swab: place swab into UTM and break swab **below** lid line Wash or lavage: aseptically transfer no more than 3 ml to UTM Be sure cap is on securely & tape in clockwise direction Place UTM inside biohazard bag; put Lab Request in outer pocket
Storage/ Transport	Store refrigerated: **Do Not Freeze** Ship with cool packs as soon as possible Ship as a Biological Substance Category B UN3373
Results	Respiratory Syncytial Virus: Positive/No Virus Recovered
Turnaround Time	DFA: 1-3 days Viral Culture: can be greater than 2 weeks

Test	Rubella
Testing Lab	Fairbanks
Disease(s)	Rubella, German measles, congenital rubella syndrome.
Organism(s)	Rubella Virus
Test Method	EIA Serology - IgG & IgM
Specimen	**Serology:** Draw acute specimen 3-4 days after rash onset **Immune Status:** Draw single serum specimen
Storage/ Transport	Store refrigerated. Ship with cool packs. Ambient temperature shipping is acceptable. Do not freeze.
Results	Rubella IgG/IgM Positive/Negative Interpretation of Results
Turnaround Time	1 day to 3 weeks

Test	Rubeola (Measles)
Testing Lab	Fairbanks
Disease(s)	Measles, Rubeola
Organism(s)	Rubeola Virus
Test Method	Culture with IFA confirmation EIA Serology – IgG & IgM
Specimen	**Culture:** Throat swab or nasal washing. Use collection swab(s) included in UTM kit, place swab into Universal Transport Media. Urine in sterile container **Serology:** Draw acute specimen 3-4 days after rash onset. Single serum for immune status.
Storage/ Transport	Store refrigerated. Ship with cool packs. Ambient temperature shipping is acceptable. Do not freeze.
Results	Rubeola Virus Positive/No Virus Recovered Rubeola IgG/IgM Positive/Negative Interpretation of Results
Turnaround Time	1 day to 3 weeks

Test	Salmonella Serotyping
Testing Lab	Anchorage
Disease(s)	Salmonellosis
Organism(s)	*Salmonella* species
Test Method	Culture and Serotyping
Specimen	Pure culture isolate Stool in ETM (see Enteric Stool Culture)
Storage/ Transport	Ambient temperature Package and label as Biological Substance, Category B
Results	*Salmonella* serotype Example: *Salmonella* Sero*. enteritidis*
Turnaround Time	2-7 days
Notes	Laboratories should send all suspected and/or confirmed isolates to ASPHL for confirmation and epidemiological studies.

Test	Shiga-toxin testing (STEC)
Testing Lab	Anchorage
Disease(s)	Hemolytic Uremic Syndrome (HUS), bloody stool
Organism(s)	Shiga-toxin (I,II) producing *E. coli (STEC), Escherichia coli* O157, Enterohemorragic *Escherichia coli* (EHEC)
Test Method	EIA (Meridian EHEC)
Specimen	Stool in ETM (see Enteric Stool Culture) GN Broth (Gram negative/MacConkey's broth)
Storage/ Transport	Ambient temperature
Results	Shigatoxin (I,II) Positive/Negative
Turnaround Time	5 days
Notes	Laboratories should send all suspected and/or confirmed isolates to ASPHL for confirmation and epidemiological studies. Refer to Epidemiology Bulletin: Characteristics of Shiga-Toxin Producing Escherichia coli (STEC) Isolates — Alaska, June 2007 to December 2008

Test	Shigella Serotyping
Testing Lab	Anchorage
Disease(s)	Shigellosis
Organism(s)	*Shigella dysenteriae*, Serogroup A *Shigella flexneri,* Serogroup B *Shigella boydii*, Serogroup C *Shigella sonnei,* Serogroup D
Test Method	Culture and Serotyping
Specimen	Pure culture isolate Stool in ETM (see Enteric Stool Culture)
Storage/ Transport	Ambient temperature Package and label as Biological Substance, Category B* *Exception: Confirmed isolates of *Shigella dysenteriae,* Serogroup A must be shipped as Biological Substance Category A.
Results	No *Shigella* species isolated *Shigella dysenteriae*, Serogroup A *Shigella flexneri,* Serogroup B *Shigella boydii*, Serogroup C *Shigella sonnei,* Serogroup D
Turnaround Time	2-4 days
Notes	Laboratories should send all suspected and/or confirmed isolates to ASPHL for confirmation and epidemiological studies.

Test	Syphilis Screen - RPR
Testing Lab	Anchorage
Disease(s)	Syphilis, Neuro-syphilis
Organism(s)	*Treponema pallidum*
Test Method	Slide agglutination
Specimen Collection	Serum 2–5 mLs
Storage/ Transport	Store refrigerated. Freeze sample if delay in testing is anticipated. Ship ambient temperature. FTA confirmatory testing requires samples to be frozen within 7 days of collection, a new sample may be required for reactive samples if storage conditions are not met.
Results	RPR Reactive (with Dilutions)/Nonreactive FTA-ABS automatically performed on Reactive RPRs
Turnaround Time	1-2 days

Test	Strep Screen (Group A)
Testing Lab	Anchorage
Disease(s)	Strep Throat, pharyngitis
Organism(s)	*Streptococcus pyogenes* (Grp A)
Test Method	Culture and Serotyping
Specimen Collection	Throat swab in Amies Transport
Storage/ Transport	Ambient temperature
Results	*Streptococcus pyogenes* (Grp A) Isolated/Not Isolated
Turnaround Time	2-4 days

Test	Toxic Alcohols & Glycols
Testing Lab	Anchorage
Compounds (Alternate Names)	acetone, isopropanol (2-propanol, isopropyl alcohol, rubbing alcohol), methanol (methyl alcohol, wood alcohol), ethanol (ethyl alcohol), ethylene glycol (1,2-ethane diol, antifreeze)
Test Method	Gas Chromatography/Mass Spectrometry. This is a two step panel. Simple alcohols are completed first, followed by a separate glycol analysis. All compounds are tested during initial case evaluation. If follow-up testing is requested, only compounds previously reported positive are tested.
Availability of Testing	Test is performed to support hospital emergency department determinations of Toxic Alcohol/Ethylene Glycol exposure. This test is not for routine evaluation of ethanol or acetone. Testing is available 24/7 by calling the emergency on-call #: 907-222-0951 or 855-222-0951. Follow prompts to be connected to on-call chemistry staff.
Specimen	Whole Blood
Specimen Collection	Preferred Volume: 4 mL Whole Blood. Minimum volume: 2 mL Whole Blood. Preferred Tube: One 4 mL Gray top w/anticoagulant (Potassium Oxalate/Sodium Fluoride or Na2EDTA/Sodium Fluoride) Alternate Tube: Lavender (K2EDTA) Serum Separator Tubes are not acceptable.
Storage/ Transport	Store refrigerated. Anchorage Area (including Mat-Su): Ship at ambient temperature. Outside Anchorage: Ship on cold pack if transport will take longer than 12 hrs. Contact on-call staff with Airbill number and carrier.
Results	A quantitative concentration will be reported. Critical values are provided with report. Results are called in and faxed. The Alaska Poison Control Center is notified of positive results and is able to provide follow-up toxicology assistance.
Turnaround Time	Test panel is complete 2-3 hours from receipt of sample.

Test	Trichomonas (NAAT)
Testing Lab	Anchorage
Disease(s)	Trichomonas, Trichomoniasis
Organism(s)	*Trichomonas vaginalis* (TV)
Test Method	Nucleic Acid Amplification (NAAT). Target Mediated Amplification (TMA) for the detection of ribosomal RNA (rRNA) from *Trichomonas vaginalis*.
Availability	**For females only** Please contact Alaska State Public Health Laboratory at 907-344-2100 to set up an account for testing. There is a $25 fee per patient for testing.
Specimen	Urine Vaginal Endocervical
Specimen Collection	Gen-Probe APTIMA Combo2 Transport Tubes: Urine Collection Kit (yellow kit): • First catch urine must be added to transport within 24 hours of collection. Vaginal Swab Collection Kit (orange kit): • Follow instruction provided in kit Unisex Swab Collection Kit (blue kit): • Used for Endocervical, • Add swabs to transport immediately. • Do not submit white shafted cleaning swabs for testing.
Special Conditions	**Not a test of cure.** Tests that are performed less than 4-6 weeks after completion of therapy might be falsely positive due to the presence of nonviable organisms.
Storage/ Transport	Ambient temperature Urine specimens must be tested within 30 days of collection, swab specimens within 60 days.
Results	*Trichomonas vaginalis* Positive/Negative
Turnaround Time	7 days

Test	Tularemia
Testing Lab	Anchorage
Disease(s)	Tularemia, Rabbit fever, Deer-fly fever, Francis fever
Organism(s)	*Francisella tularensis*
Availability	All clients upon consultation with Section of Epidemiology 907-269-8000 during business hours or 1-800-478-0084 during non-business hours Contact the Alaska State Public Health Laboratory – Anchorage prior to submitting specimens (907-334-2100).
Specimen	Organism isolate, blood cultures, biopsy tissue, ulcer or lesion scraping or aspirate, lesion swab, sputum, bronchial/tracheal wash, serum for serological diagnosis, environmental samples
Specimen Collection	Refer to ASM Sentinel Level Clinical Microbiology Guidelines. Contact the Alaska State Public Health Laboratory – Anchorage.
Storage/ Transport	Store refrigerated. Ship with cool packs. Ambient temperature shipping is acceptable. Package and label as Biological Substance, Category B, ship as quickly as possible.
Results	Presumptive *F. tularensis* detected/not detected Confirmatory *F. tularensis* detected/not detected *Francisella tularensis* antibody (titer specified)
Turnaround Time	2-7 days

Test	Varicella Zoster
Testing Lab	Fairbanks
Disease(s)	Chickenpox, Herpes Zoster, Varicella, shingles
Organism(s)	Varicella-Zoster Virus
Test Method	Culture and immunofluorescent antibody confirmation EIA Serology – IgG & IgM
Specimen	**Culture:** Vesicle fluid swab. Use collection swab(s) included in UTM kit, place swab into Universal Transport Media. **Serology:** Acute serum drawn 2-5 days post onset, and convalescent sera drawn 2-3 weeks later. Single serum for immune status.
Storage/ Transport	Store refrigerated. Ship with cool packs. Ambient temperature shipping is acceptable.
Results	Varicella-Zoster Virus Positive/No Virus Recovered Varicella-Zoster Virus IgG/IgM Positive/Negative Interpretation of Results
Turnaround Time	3–4 weeks

Test	*Vibrio* species
Testing Lab	Anchorage
Disease(s)	Rice water diarrhea, gastroenteritis
Organism(s)	*Vibrio cholerae, V. parahemolyticus, V. fluvialis, V. furnissii, V. mimicus, V. hollisae*
Test Method	Culture and Serotyping
Specimen	Stool in ETM (see Enteric Stool Culture)
Special Conditions	Specimen should not be contaminated with water, urine, barium, antibiotics or mineral oil.
Specimen Collection	1. Collect stool in clean dry container or on plastic wrap stretched across toilet. 2. **Sample must be placed into ETM within one hour of sample collection**. 3. Carefully open ETM, use scoop mounted in lid to place approximately a walnut size amount of stool in to transport. Add enough stool to fill exactly to **red fill line.** Do not overfill.
Storage/ Transport	Ambient temperature Package and label as Biological Substance, Category B
Results	Not isolated Vibrio species: *Vibrio cholerae, V. parahemolyticus, V. fluvialis, V. furnissii, V. mimicus, V. hollisae*
Turnaround Time	2-7 days
Notes	Laboratories should send all suspected and/or confirmed isolates to ASPHL for confirmation and epidemiological studies.

Test	Viral Culture
Testing Lab	Fairbanks
Disease(s)	Refer to Adenovirus, Enterovirus, Influenza Virus, Cytomegalovirus (CMV), Epstein-Barr Virus (EBV), Rotavirus, Respiratory Syncitial Virus (RSV), Herpes Simplex Virus, or Varicella Zoster for specific information.
Test Method	Culture
Specimen	Use collection swab(s) included in UTM kit, place swab into Universal Transport Media. **DO NOT submit cotton swabs on wooden applicators.**
Storage/ Transport	Store refrigerated. Ship with cool packs.
Results	Positive/No Virus Recovered Strain typing is performed if a virus is isolated.
Turnaround Time	1–3 weeks

Test	*Yersinia entercolitica*
Testing Lab	Anchorage
Disease(s)	Gastroenteritis
Organism(s)	*Yersinia entercolitica*
Test Method	Culture
Specimen	Stool in ETM (see Enteric Stool Culture)
Special Conditions	Specimen should not be contaminated with water, urine, barium, antibiotics or mineral oil.
Specimen Collection	1. Collect stool in clean dry container or on plastic wrap stretched across toilet. 2. **Sample must be placed into ETM within one hour of sample collection**. 3. Carefully open ETM, use scoop mounted in lid to place approximately a walnut size amount of stool in to transport. Add enough stool to fill exactly to **red fill line.** Do not overfill.
Storage/ Transport	Ambient temperature Package and label as Biological Substance, Category B
Results	*Yersinia entercolitica* Isolated/Not Isolated
Turnaround Time	2-7 days
Notes	Laboratories should send all suspected and/or confirmed isolates to ASPHL for confirmation and epidemiological studies.

Test	*Yersinia pestis*
Testing Lab	Anchorage
Disease(s)	Plague disease forms: Bubonic, pneumonic, or septicemic.
Organism(s)	*Yersinia pestis*
Availability	All clients upon consultation with Section of Epidemiology 907-269-8000 during business hours or 1-800-478-0084 during non-business hours. Contact the Alaska State Public Health Laboratory – Anchorage prior to submitting samples.
Specimen	Organism isolate, bronchial wash, tracheal aspirate, sputum, nasopharyngeal swab, lymph node aspirate, serum, lesion exudates, tissue smears, blood, environmental samples
Specimen Collection	Refer to ASM Sentinel Level Clinical Microbiology Guidelines. Contact the Alaska State Public Health Laboratory – Anchorage with questions.
Storage/ Transport	Store refrigerated. Ship with cool packs. Ambient temperature shipping is acceptable. Package and label as Biological Substance, Category B, ship as quickly as possible.
Results	Presumptive/ Confirmatory *Y. pestis* detected/ not detected
Turnaround Time	3-5 days

Botulism Detailed Collection Instructions

Botulism is detected in the laboratory by identifying botulinum neurotoxin, or neurotoxin producing *Clostridium botulinum* bacteria, in clinical materials or remnants of suspect food consumed. Gastric aspirates and stool specimens often yield positive results among persons with laboratory-confirmed botulism. An ileus resulting from botulism intoxication will slow the transit of contaminated food, which may delay the passage of stool. Although it may be some days after serum is collected, submission of stool, once it can be collected from the patient, is highly recommended.

All samples must be clearly labeled, placed in a leak-proof container or plastic bag, and shipped according to current shipping guidelines. Arrangements for testing are handled by the Alaska Division of Public Health, Section of Epidemiology. For consultation and more information about specimen collection and handling, call the Section of Epidemiology at (907) 269-8000, or after-hours (800) 478-0084.

Botulism Specimen Collection Guide

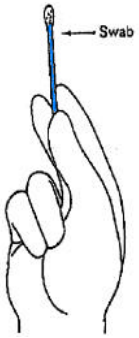
Botulism Type	Specimen Type	Amount Required	Storage Conditions	Transport Conditions	Special Consideration
Foodborne	Serum*	5-10 ml	Refrigerate	Cold-pack	Collect sample before administration of HBAT.
	Gastric contents/vomit	20 ml	Refrigerate	Cold-pack	
	Raw Feces/stool	10-50 g	Refrigerate	Cold-pack	No transport media Rectal swab not acceptable.
	Suspect food	50 g	Refrigerate	Cold-pack	Leave food in original containers if possible or place in sterile unbreakable, leak-proof containers.
Infant	Stool	≥ 0.2 g	Refrigerate	Cold-pack	Diapers are acceptable, but not preferred.
	Enema	≥ 5 ml	Refrigerate	Cold-pack	Collect with non-bacteriostatic water; do not use glycerin suppository.
	Serum	≥ 2 ml	Refrigerate	Cold-pack	Only collect by request.
Wound	Serum	5-10 ml	Refrigerate	Cold-pack	Collect sample before administration of HBAT.
	Feces/stool	10-50 g	Refrigerate	Cold-pack	Rectal swab not acceptable
	Culture isolate	Anaerobic transport media	Room temp	Ambient	
	Wound exudates/de-brided tissue	Anaerobic transport media	Room temp	Ambient	

*Contact EPI for post antitoxin serum testing.

Send Botulism samples to:

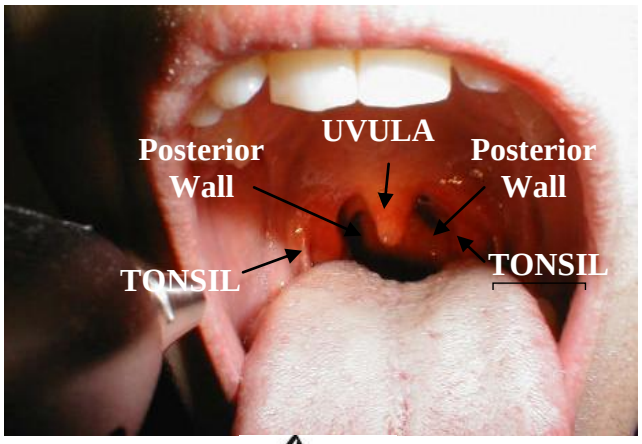
Alaska State Public Health Laboratory-Special Pathogens
5455 Dr. Martin Luther King Jr. Ave.
Anchorage, AK 99507

Chlamydia & Gonorrhea Pharyngeal Swab Collection Instructions



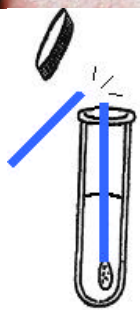
STEP 1

Open kit and remove tube and package with green writing. Remove the swab with the **BLUE** shaft. **USE BLUE SHAFT SWAB ONLY**.



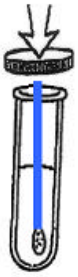
STEP 2

Instruct patient to open mouth widely. Be sure to make good contact with 5 key areas of the throat.



STEP 3

Remove cap from test tube. Place swab in test tube. Do not puncture the foil cap. Break swab shaft at the score mark.



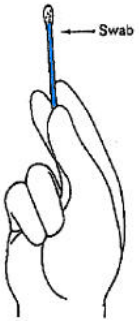
STEP 4

Put the cap back tightly on test tube to prevent any leaking. Try not to splash the liquid out of the tube

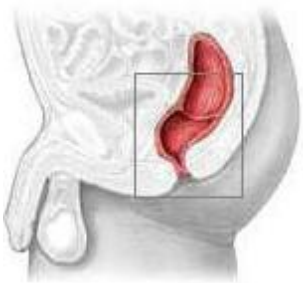
STEP 5

Discard wrapper and unused tube. Label tube with patient's name and specimen source.

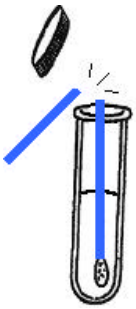
Chlamydia & Gonorrhea Rectal Swab Collection Instructions



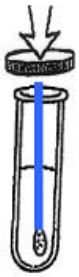
STEP 1
Open kit and remove tube and package with green writing. Remove the swab with the **BLUE** shaft. **USE BLUE SHAFT SWAB ONLY**.



STEP 2
Insert swab 1 inch into the anus and turn for 5-10 seconds. If needed, before inserting swab, wet swab with water or saline solution.



STEP 3
Remove cap from test tube. Place swab in test tube. Do not puncture the foil cap. Break swab shaft at the score mark.



STEP 4
Put the cap back tightly on test tube to prevent any leaking. Try not to splash the liquid out of the tube

STEP 5
Discard wrapper and unused tube. Label tube with patient's name and specimen source.

Interpretation of Hepatitis Results

Serological Pattern of Reactivity

NOTE: An **EQUIVOCAL** result on any assay indicates borderline detection. This specimen falls within ± 10% of the positive threshold. A follow-up specimen may be resubmitted in 3 – 6 weeks.

HEPATITIS A

HAV Total Ab	HAV IgM	Interpretation
Negative		No immunity via infection or immunization
Positive	Negative	Immunity via HAV exposure or immunization
Positive	Positive	Recent or current HAV infection or recent immunization

HEPATITIS B

HBcAb	HBsAb	HBsAg	HBcIgM	Interpretation
Negative				No prior HBV infection
Negative	Negative			No immunity via past infection or immunization
Negative	Positive			Immune via vaccination titre >10mIU/mL
Positive	Positive	Negative		Immune via prior resolved infection
Positive	Negative	Negative		Convalescent window, or loss of HBsAb from resolved infection, or possible low grade chronic* infection
Negative	Negative	Positive		Very early infection
Positive	Negative	Positive	Positive	Acute HBV infection
Positive	Negative	Positive	Negative	Chronic* HBV infection
Positive	Negative	Positive	Pos/Neg	Acute or Chronic* infection; very infectious
Positive	Positive	Positive	Pos/Neg	Resolving Infection

*HBV infection is considered to be chronic when HBsAg remains positive for 6(six) months **or longer.**

HEPATITIS C

HCV Ab	Interpretation
Negative	HCV infection not indicated
Positive	HCV Infection Indicated

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Herpes Type 1 and Type 2 IgG Antibody

Supplemental Information

HSV-1 Result	HSV-2 Result	Interpretation
Negative	Negative	No IgG antibodies to HSV were detected
Positive	Equivocal or Negative	Presumptive for IgG antibodies to HSV-1
Equivocal or Negative	Positive	Presumptive for IgG antibodies to HSV-2
Positive	Positive	Presumptive for IgG antibodies to HSV-1 and HSV-2
Equivocal	Negative	Borderline result. This specimen falls within ± 10% of the positive threshold. A follow-up specimen may be resubmitted in 3-6 weeks
Equivocal	Equivocal	
Negative	Equivocal	

Test information:

1. The Herpeselect EIA tests use recombinant HSV type-specific gG1 and gG2 antigens, which are unique to each type. Therefore, sera from individuals infected with HSV Type 1 will only be positive with the type specific gG1 HSV 1 assay, and sera from individuals infected with HSV Type 2 will only be positive with the type specific gG2 HSV 2 assay. Persons infected with both types will be positive with both type specific assays.

2. This test is indicated for sexually active adults or expectant mothers to aid in the presumptive diagnosis of HSV infection.

Limitations of HSV Antibody Testing:

1. This test is not intended to replace viral isolation and should not be used as the sole basis for diagnosing infection. Positive results are presumptive, and should be confirmed by another method.

2. Negative results do not rule out HSV infection. The time required to seroconvert following primary infection varies with the individual. Negative results in suspected early herpes simplex disease should be repeated in 4-6 weeks.

3. Since maternal antibody is passively transferred from the mother to the fetus before birth, positive results in newborns must be interpreted cautiously. A definitive diagnosis requires viral isolation.

4. This test does not indicate the site of infection. A single positive result only indicates previous exposure. The presence of antibody does not imply immunity.

5. The performance of this assay has not been established for use in a pediatric population, for neonatal screening, or for testing immunocompromised patients.

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Measles, Mumps, Rubella, and Varicella-Zoster

Supplemental Information

IgG Result	Interpretation
NEGATIVE	No significant level of detectable antibody. Presumed to be uninfected and susceptible to primary infection.
EQUIVOCAL	Borderline result. This specimen falls within ± 10% of the positive threshold. Resubmission may be indicated.
POSITIVE	Indicates immunity by vaccine or current/recent infection.
IgM Result	**Interpretation**
NEGATIVE	No significant IgM antibody detected. Acute infection not suspected.
EQUIVOCAL	Borderline result. Patient may be sero-converting or falsely reactive. Specimen should be resubmitted.
POSITIVE	Indicates current or recent infection or recent immunization (within several months ago).

Test Information:

- IgM antibodies are the first antibodies produced in response to exanthema infection, and may become detectable 2-3 days after rash onset, reaching peak titers seven to ten days later. They remain detectable at diminishing levels for four to five weeks. IgG antibodies appear several days after IgM antibodies, and reach peak titers 14 to 21 days later.

- For the diagnosis of acute infection using IgM antibody tests, the acute-phase serum sample should be drawn as soon as possible within 7 days after rash onset. The convalescent-phase sample should be drawn 12 or more days after the onset of rash.

- Specifically for VZV, providers should be aware of possible IgM antibody interference from Epstein-Barr virus. A definitive diagnosis is made by isolation of VZV in tissue culture. Additionally, a significant rise in antibody level indicates Varicella or Zoster infection only if the antibody level to herpes simplex virus does not rise concurrently. Up to one third of individuals with primary HSV infections who have experienced prior VZV infection will show a heterotypic antibody response to VZV antigen.

Limitations:

1. An IgM response can sometimes accompany re-infections, and low levels of IgM antibodies may persist for more than 12 months after primary infection.
2. The presence of IgM antibody in a single specimen does not distinguish between active infection and recent immunization. Vaccination usually results in IgM antibodies, which may persist for several months.
3. A negative result for IgM does not exclude the possibility of active infection. The sample may have been collected before the appearance of IgM antibody. If an acute infection is suspected, a second sample should be collected at least 5-7 days later.
4. Lack of an IgM response does not exclude the possibility of infection in samples that are not appropriately timed.
5. Positive IgM results serve as an aid to diagnosis, and should not be interpreted as diagnostic in the absence of clinical symptoms or corroborating tests.

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Mycology (Fungus/Yeast) Detailed Collection Instructions

- Supplies Needed: **Sabouraud dextrose <u>and</u> Mycosel agar slants.**
- Store and ship samples at room temperature.
- Ship samples as Biological Substance, Category B.

Skin: Clean infected area with 70% alcohol. Scrape scale from the border of the lesions with a sterile scalpel. Inoculate scrapings directly and ensure contact with the agar.

Hair: Pluck 5-6 hairs with a sterile forceps. Inoculate directly and ensure contact with the agar.

Nails: Clean nail with 70% alcohol. Inoculate brittle material from under the edges of the infected nail. Process whole nails or large pieces of skin in a sterile grinder with a small amount of saline and inoculate. If a grinder is unavailable, cut and scrape the specimen with a sterile scalpel blade first. Press small pieces of nail or scrapings directly onto agar with a sterile instrument to ensure contact with the agar.

Tissue: Grind tissue with sterile saline using sterile technique. Inoculate agar slants.

Blood: 10 mL of blood collected in SPS (yellow top) Isolator microbial tube. If blood culture bottles for yeast/fungi are available, inoculate bottle directly. Vent and incubate at 30°C. Subculture every 48 hours onto agar slants. Hold the original blood culture and subcultures for four weeks. Send any slants showing growth of yeast or fungi to the State Public Health Laboratory- Anchorage for identification.

Eye, Ear, Nasal, Nasopharyngeal, Mouth, Throat: Inoculate swab specimens directly onto the agar slants.

Pus, Exudate, Drainage: Inoculate agar slants directly from swab or syringe; add 0.1 to 1.0 mL sterile saline to low volume specimens.

Body Fluids, Urine, Sputum: If purulent, inoculate agar slants directly. If specimen is clear and >10 mL, centrifuge before inoculating. Remove sediment with a sterile pipette and inoculate approximately 0.1 mL of sample to slants.

Vaginal and Cervical Swabs: Directly inoculate slants.

Norovirus Detailed Collection Instructions

Norovirus outbreak testing should be pre-approved by the Section of Epidemiology. Please call the Section of Epidemiology at 907-269-8000 during business hours or 1-800-478-0084 after business hours.

Collection of Specimens

1. Section of Epidemiology will determine the number of specimens that need to be collected (usually 4-6).
2. Raw, loose, stool and vomitus are appropriate specimens to collect.
3. Collect at least 5 mL, preferably 10-50 mL of specimen.
4. Collect specimen in a leak-proof container. Supplies can be obtained from Epidemiology, the Alaska State Public Health Laboratory – Fairbanks or Anchorage.
5. Collection should begin as soon as symptoms appear, ideally within 48-72 hours of onset.
6. **DO NOT** submit samples in viral transport media (VTM).

Storage and Transport

1. Store specimens at 4°C.
2. Complete all information on the norovirus request slip. Paperwork may be obtained from Section of Epidemiology, Alaska State Public Health Laboratory – Fairbanks or Anchorage.
3. Specimen containers should be individually sealed and bagged with the appropriate amount of absorbent material. (Roughly two paper towels per 50 mL.)
4. Paperwork should be separated from the specimen.
5. Specimens should be packaged and labeled as Biological Substance, Category B, and shipped in an insulated, waterproof shipping container with cool packs.
6. Arrange with Section of Epidemiology for transportation to:

Alaska State Public Health Laboratory - Fairbanks
931 Sheenjek Drive
Or P.O. Box 60230 if sending by mail service
Fairbanks, AK 99706-0230
(907) 474-7017

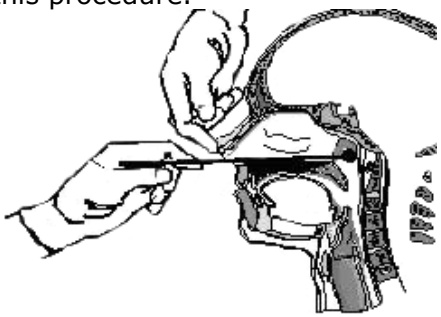
Note: Food, water or environmental samples are not tested. Please refer any further questions to the Alaska State Public Health Laboratory – Fairbanks at 907-474-7018.

Pertussis Culture & PCR-Detailed Collection Instructions

Supplies Needed: Dacron Nasopharyngeal Swab in Plain Dry Tube (Copan, yellow top)
Regan-Lowe Transport Medium
Individually Paper-Wrapped Nasopharyngeal Dacron/Polyester Swab
Anchorage Laboratory Requisition Form

Collection Instructions:

1. Assemble all supplies.
2. The nasopharyngeal swab used for collecting this sample type has a fine wire shaft.
3. Two swabs are collected during this procedure, one for PCR and the other for culture. Both swabs are collected in the same manner as described below.
4. Remove any mucus from the patient's nose.
5. Estimate the distance to the nasopharynx. *Prior to insertion of the swab, measure the distance from the corner of the nose to the front of the ear and insert the shaft ONLY half this length.*
6. Open package containing the NP swab in plain dry tube (yellow cap) and remove swab for sample collection.
7. Immobilize the patient's head. Have the patient sit with head against a wall as there is a tendency to pull away during this procedure.



8. Gently insert the swab along the medial part of the septum, along the base of the nose, until it reaches the posterior nares. Gentle rotation of the swab may be helpful in accomplishing the insertion. (If resistance is encountered on one side, try the other nostril, as the patient may have a deviated septum).
9. Leave swab in place in nasopharynx for 10 seconds, then gently rotate to remove columnar epithelial cells and remove swab.
10. Put NP swab back into its plain dry tube (yellow cap).
11. Using the other NP swab, collect a second sample as previously described in steps 8-10.
12. Insert this swab into the Regan-Lowe transport medium by stabbing it into the medium all the way to the bottom of the tube. Insert inoculated portion of swab in the medium, **cut** shaft to close lid securely.
13. Follow labeling and transport instructions below.

Labeling:

1. Clearly label both tubes containing swabs, plain dry swab and Regan-Lowe transport medium, with patient's name and collection date.
2. Complete the Anchorage Laboratory Requisition Form, including symptom information.

Transport:

1. Place tubes containing swabs in the Ziploc portion of a specimen transport bag and the completed requisition form in the adjacent pouch.
2. Package as a Biological Substance Category B specimen according to all current shipping regulations and transport to the State Public Health Laboratory-Anchorage as soon as possible. Ship at ambient temperature. Do not allow medium containing specimen to freeze.

NOTE: If transport will exceed 24 hours, pre-incubation of Regan-Lowe transport medium is recommended. Regan-Lowe transport is an enrichment medium for *Bordetella spp*., and inhibits growth of normal flora. Incubating for 48 hours at 35-37°C, before transporting, increases the survival of *Bordetella* spp. by allowing them to multiply. Hold the PCR swab at 4°C until transport, ship at ambient temperature.

Rabies Assay Specimen Submission Instructions

Rabies laboratory services are provided through the Alaska State Virology Laboratory (ASVL) in Fairbanks. To ensure accurate and reliable reports, please follow the directions listed below.

1. Specimens will be accepted from physicians and other healthcare providers, veterinarians, environmental health officers, wildlife agents, law officers, or other individuals designated by the Alaska Division of Public Health.

2. Rabies laboratory examinations will be limited to warm-blood animals for which there is a clear or possible history of **human exposure**, or animals deemed necessary by public health or wildlife authorities. Please contact the Section of Epidemiology for authorization prior to submitting specimens involved in human exposures. Call (907) 269-8000, or after hours call (800) 478-0084.

3. **Notify ASVL prior to shipping of authorized rabies specimens.** During normal work hours, call (907) 474-7017 or 7018; after-hours call pager (907) 269-5520, pager # 0902.

4. **A completed Rabies Investigation Report (Form 06-1272), must accompany each specimen.**

5. Conditions of shipment:
    a. No **LIVING ANIMAL** will be accepted for rabies diagnostic studies.

    b. Do NOT shoot the animal in the head or mutilate the head in any way.

    c. Wear gloves when handling the animal. Send head and part of the neck of large animals, such as dogs, foxes, wolves, and lynx. Leave sufficient tissue attached to the head/neck region to ensure inclusion of the salivary glands. No other part of the animal should be submitted.

    d. Small animals, such as mice, voles, and bats may be sent intact if recently dead, **BUT ONLY** after consultation with either ASVL or Section of Epidemiology staff.

    e. Specimens should be kept cold (35-45°F) prior to shipping. Ship specimens with refrigerant packs; **do not use ice**. Frozen specimens are acceptable; freezing will not affect the rabies assay although testing may be delayed until the specimen can be thawed. If there is a chance for the specimen to be delayed in transit to the Laboratory or if ambient temperatures are high, ASVL recommends freezing the specimen to ensure that the tissue remains in satisfactory condition.

6. Packing:
    a. Wear gloves when handling the animal.

    b. Wrap the head in absorbent material and place into **TWO** heavy, watertight plastic bags. Tie the bags tightly to prevent leakage.

    c. Place the packaged head in a leak-proof container, packed next to a refrigerant pack.

d. Remove the gloves and either, burn the gloves, or enclose them with the head for disposal. Then wash hands thoroughly with soap.

e. Seal the carton securely with packing tape and include the Rabies Investigation Report.

f. Carcasses of infected animals should preferably be incinerated, or buried.

7. Labeling and shipping:

a. All rabies specimens must bear the following shipping label:

BIOLOGICAL SUBSTANCE CATEGORY B
PACKED IN COMPLIANCE WITH IATA PACKING INSTRUCTION 650
THIS PACKAGE CONTAINS AN ANIMAL HEAD
REGRIGERATE ON ARRIVAL

b. Address all shipments to:

Alaska State Virology Laboratory
931 Sheenjek Drive
Or P.O. Box 60230 if sending by mail service
Fairbanks, AK 99706-0230
(907) 474-7017

Ship specimens by **AIR FREIGHT** or AIR **SPECIAL PACKAGE SERVICE**. If mail service must be used, send via **PRIORITY MAIL**, **SPECIAL DELIVERY**, or **EXPRESS MAIL**, if available.

c. Shipments must be **PREPAID** unless prior arrangement has been made with Epidemiology.

d. Contact ASVL and advise on the method of routing and the airway bill number, etc.

e. Specimens may be brought directly to the ASVL office in Fairbanks. Call 9907-474-7018 for directions.

8. Reports:

a. Preliminary fluorescent microscopic report will be called on all **POSITIVE** animal heads, and **ALL HUMAN EXPOSURE** cases within 24-48 hours after specimen receipt and confirmation. Copies of the report will be mailed to the submitter.

b. An interim written report will be forwarded upon the completion of the fluorescent microscopic (FA) examination. When a mouse inoculation test (MI) is performed, this final report will be forwarded subsequent to completion of a 28-day observation period.

NOTE: Animals will not be returned, remains will be incinerated at ASVL.

Stool Culture and Parasitology Detailed Collection Instructions

Please read all directions first and follow them carefully.
You have been asked to collect a stool sample for laboratory analysis. The collection set may contain 1 to 4 vials. One of the vials may be empty (contains no liquid).

1. **You will need:**
   - Gloves
   - A clean, dry container (like a margarine tub) or plastic wrap to stretch across the toilet to collect the stool.
   - Transport container(s): Your provider will give you the appropriate containers.
     - Red Top Vial: for Bacteria like Salmonella or E. coli
     - Yellow and blue Top Vials: for Parasites like Giardia
     - Leak Proof container: for Viruses like Norovirus
   - Pen or marker to label the transport containers
2. **Please wash your hands before collecting the stool sample.**
   - Do not pass the specimen into the toilet.
   - Do not pass the specimen directly into the collection vial
   - Do not urinate on the specimen or into the collection vial.
   - Do not allow any water to mix with the specimen.
3. **Put on gloves. Stool can contain material that spreads infection.**
4. **Pass stool into a dry container**. Or stretch plastic wrap loosely across the toilet bowl, between the seat and the base to catch the stool.
   - Either solid or liquid stool can be collected.
   - Samples from babies and young children may be collected from diapers lined with plastic wrap (if the stool is not contaminated with urine).
5. **Carefully open each vial.**
   - If the stool is liquid, carefully pour to the fill line indicated on the container.
   - If the stool is solid, use the paddle on the container cap to scoop a walnut size amount into the vial.
   - If one vial contains no liquid, fill to at least 1/3 of the container.
   - Do not overfill the vials!!
6. **Screw the cap tightly** onto the transport container it came from. Shake the sample until the samples are well-mixed with the liquid in the vial.
7. **Remove your gloves and wash your hands.**
8. **Label all of the containers** with the patient's first and last name, date of birth, and the collection date.
9. **Return the transport containers** as directed. Make certain that all the vials are tightly capped to avoid leaks.

Tuberculosis/Mycobacterium Detailed Collection Instructions

- Store all specimens refrigerated. Ship on cool packs.
- Ship samples as Biological substances, Category B as soon as possible.
- Specimens must be received in our laboratory within 10 days of collection.
- DO NOT use waxed containers or urine cups.
- Swabs are NOT recommended for the isolation of Mycobacteria.

Sputum:
Collect early morning specimens from a deep productive cough on three consecutive days, before the patient eats, drinks or takes medication. Use separate collection tube each day.

Have patient rinse their mouth with water prior to collection. Collect **5-10 mL** sputum in sterile 50 ml screw capped tubes containing sodium carbonate preservative. Specimens must be at least 2 mL in volume.

Blood:
10 mL of blood collected in SPS (yellow top) Isolator microbial tube.

Bone Marrow:
10 mL of blood collected in SPS (yellow top) Isolator microbial tube, or
Sterile container with sterile saline if isolator tubes are not available.

Bronchoalveolar lavage or Bronchial washing:
At least 5 mL in sterile container. Avoid contaminating bronchoscope with tap water.

Bronchial Brush/Brushing:
Sterile container with sterile saline.

Body Fluids (Pleural, peritoneal, synovial, pericardial, etc.):
Submit at least 10-15 mLs in sterile 50 mL conical tubes.
Add sterile anticoagulant (SPS or heparin) to body fluids if necessary. Do not use preservatives.

CSF:
Submit at least 2 mL in sterile container.

Gastric Lavage/Aspirate:
Collect 5-10 mL of gastric washing in sterile 50 mL conical tube.
Adjust pH to neutral with 100 mg of sodium carbonate immediately following collection and note on requisition form.

Stool:
Submit samples in sterile 50 mL conical tubes.

Tissue, aspirate, bone, lymph nodes, biopsy, abscess contents:
Submit samples in sterile 50 mL conical tubes.
Add sterile saline to cover specimen.

Urine:
Collect first morning, clean catch, mid-stream urine specimens on three consecutive days.
Submit 40-50 ml of urine in a sterile 50 mL sterile crew capped conical tube.

Instructions for Collecting Sputum Samples

Why is a Sputum Test Necessary?

- Your doctor needs you to collect a sputum sample to test for tuberculosis (TB) in your lungs. Checking your sputum is the best way to find out if you have TB disease or to see if your treatment is working.

- To collect an acceptable sample you need to cough up sputum from deep inside of your lungs as soon as you wake up in the morning. The lab needs at least 5 mL of sputum.

How to Collect a Sputum Sample

1. The TB sputum tube must not be opened until you are ready to use it. DO NOT REMOVE preservative (white powder) from the tube.

2. As soon as you wake up in the morning, before you eat or drink, rinse your mouth with WATER.

3. Take a very deep breath and hold air for 5 seconds. Slowly breathe out. Take another deep breath and cough hard until some sputum comes up into your mouth.

4. Spit the sputum into the TB tube.

5. Keep collecting until the sputum reaches the 5 mL line on the TB tube.

6. Screw the orange cap on the tube tightly so it doesn't leak.

7. Wash and dry the outside of the TB tube.

8. Write your NAME, DOB, and the DATE/TIME you collected the sputum on the tube and lab form.

9. Put the tube into the bag provided.

10. Deliver sample(s) to your doctor's office or mail to the laboratory AS SOON AS POSSIBLE. *(Samples must be received at the Anchorage laboratory for testing within 10 days of collection.)*

11. If you need to collect three TB samples, collect them in the morning on three different days. Do not collect more than one per day.

Alaska State Public Health Laboratory: 5455 Dr. Martin Luther King Jr Ave, Anchorage, AK 99507
Phone: (907) 334-2100 Fax: (907) 334-2161

Alaska Tuberculosis Control Program: For more information about TB call Epidemiology at (907) 269-8000 or visit their website at: www.epi.hss.state.ak.us/id/tb.stm

TB PCR Testing Information Sheet

The Alaska State Public Health Laboratory (ASPHL) has developed a nucleic acid amplification assay by real-time polymerase chain reaction (PCR) for use on respiratory specimens for the diagnosis of tuberculosis (TB). This assay was developed and its performance characteristics were determined by ASPHL. This assay has not been cleared by the U.S. Food and Drug Administration.

The CDC recommends this type of testing be performed on at least one AFB smear positive respiratory specimen from each patient with signs and symptoms of pulmonary TB for whom a diagnosis of TB is being considered but has not yet been established, and for whom the test result would alter case management or TB control activities, such as contact investigations.[1]

The ASPHL will perform testing on initial smear-positive respiratory specimens using the real-time TB PCR assay if the provider authorizes testing and the patient meets the criteria outlined below. Test authorization form must be completed prior to testing. Additionally, ASPHL will perform TB PCR testing on smear-negative specimens from patients considered to be TB suspects upon provider request and pre-approval from the Alaska Tuberculosis Control Program. The cost for testing is $153 and fees for service will be billed to the facility submitting the specimen.

Patient Criteria

- Patient must have signs and symptoms of pulmonary TB
- Patient must be reported to the Alaska Tuberculosis Control Program as a suspect TB case (907-269-8000)
- Patient must not have been diagnosed with TB or a non-tuberculous mycobacterial infection or received treatment within the last 12 months

Smear Results	**Testing**
Smear Positive (initial smear positive)	ASPHL will contact the provider and fax authorization form. TB PCR testing performed if authorized by the provider and patient meets above criteria.
Smear Negative	PCR testing upon request with **pre-approval** from the Alaska Tuberculosis Control Program

Collection/Submission of Specimens

Refer to the Laboratory Services Manual for collection and shipping instructions.
http://www.hss.state.ak.us/dph/labs/publications/image/Lab_Svcs_Manual.pdf

[1] CDC. Updated guidelines for the use of nucleic acid amplification tests in the diagnosis of tuberculosis. MMWR 2009; 58:7-10.

PCR Testing Algorithm and Result Interpretation

Smear Result	TB PCR Result	Interpretation
Smear Positive for AFB	*Mycobacterium tuberculosis* complex DNA detected	Presumed TB, pending culture results
	No *Mycobacterium tuberculosis* complex DNA detected	Use clinical judgment to determine whether to begin therapy while awaiting culture results. A patient is presumed to have an infection with non-tuberculosis mycobacteria, pending culture results.
Smear Negative for AFB	*Mycobacterium tuberculosis* complex DNA detected	Use clinical judgment to determine whether to begin therapy while awaiting results of culture and other diagnostic tests. Currently available PCR tests are not sufficiently sensitive to exclude the diagnosis of TB.
	No *Mycobacterium tuberculosis* complex DNA detected	Use clinical judgment to determine whether to begin therapy while awaiting results of culture and other diagnostic tests. Currently available PCR tests are not sufficiently sensitive to exclude the diagnosis of TB.

Mycobacterium tuberculosis complex PCR and culture testing must be correlated with patient history to confirm as a case *of Mycobacterium tuberculosis* complex infection. The IS6110 PCR detects the presence of a specific DNA sequence present in *Mycobacterium tuberculosis* Complex (MTC), which includes *M. tuberculosis, M. africanum, M. bovis, M.bovis BCG, M. cannetti, M. caprae, M. microti, and M. pinnipedii*. Results from the IS6110 PCR test are not intended to be used as the sole means for clinical diagnosis or patient management decisions.

Contact information

Alaska Tuberculosis Control Program

1-907-269-8000 during work hours
1-800-478-0084 after hours

Rapid Telephonic Reporting

Statewide 1-800-478-1800
Anchorage 1-907-561-4234
Fax 1-907-561-4239

Alaska State Public Health Laboratory

1-907-334-2100 Main Line
1-907-334-2139 TB Dept.
Fax 1-907-334-2161