



# Riverside University Health System Public Health Laboratory

## Specimen Submission Manual

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Hours: Monday-Friday 8:00 AM - 5:00 PM

### **Permits and Qualifications**

CLIA	05D0571882
California Lab #	1158
MediCal Provider	1952496010
CAP Proficiency	233280101
WSLH Proficiency	2099245

### **Mission Statement**

To provide accurate, timely, and cost effective laboratory testing to aid in the diagnosis and control of communicable diseases.

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### List of Abbreviations:

BT - Bioterrorism  
CDC – Centers for Disease Control  
CDPH – California Department of Public Health  
CLIA – Clinical Laboratory Improvement Act  
DOPH – County of Riverside Department of Public Health  
EIA – Enzyme Immunoassay  
LRN – Laboratory Response Network  
MDL – Microbial Diseases Laboratory (CDPH)  
MTB – Mycobacterium Tuberculosis  
OCPHL – Orange County Public Health Laboratory  
PCR – Polymerase Chain Reaction  
PHL – Public Health Lab  
PHM – Public Health Microbiologist  
RCPHL – County of Riverside Public Health Laboratory  
SBPHL – San Bernardino Public Health Laboratory  
TAT – Turn Around Time  
VRDL – Viral and Rickettsial Diseases Laboratory (CDPH)  
VTM = Viral Transport Media

<b>Test List</b>		
<b>Test Name</b>	<b>TAT</b>	<b>Reference Range</b>
<b>Bacteriology</b>		
Culture Aerobic	7 days	No Growth or Normal Flora
Culture Bordetella pertussis	7 days	No Bordetella pertussis isolated
Culture Campylobacter	4 days	No Campylobacter isolated
Culture Enteric	4 days	No Campylobacter, Salmonella/ Shigella, STEC isolated
Culture for Identification	4 days (Preliminary Report)	Varies by culture
	3 weeks (Final Report)	
Culture Gonorrhea (GC)	4 days	No Neisseria gonorrhoeae isolated
Culture Group A strep (Throat)	3 days	No Group A Streptococcus isolated
Culture Group B strep (vaginal/rectal)	4 days	No Group B Streptococcus isolated
Culture Salmonella/Shigella	4 days	No Salmonella/Shigella isolated
Culture STEC	4 days	No E. coli O157:H7 or STEC isolated
Shiga-toxin 1/2 EIA	24 hours	Shiga-toxin 1 or 2 NOT Detected
Gram Stain	24 hours	Negative
<b>Mycobacteriology</b>		
Acid Fast Smear (Auramine-Rhodamine)	24 hours	Negative
Culture TB/Non-TB Mycobacteria	21 days (Positive Culture)	No acid fast bacilli recovered in 6 weeks
	6 weeks (Negative Culture)	
MTB/RIF NAT	24 hours	MTB/RIF NOT Detected
Mycobacteria Antibiotic sensitivities: Streptomycin (STR), Isoniazid (INH), Rifampin (RIF), Ethambutol (EMB), Pyrazinamide (PZA)	28 days	Sensitive to drugs tested
QuantiFERON-TB	2 days	Negative
<b>HIV Serology</b>		
HIV 1/2 Antibody Screen (Oral)	4 days (Negative) 7 days (Positive)	Negative
HIV 1/2 Antibody Screen (Oral) Confirmatory (send-out to OCPHL)		
HIV 1/2 Antigen/Antibody Combo Screen	2 days (Negative) 4 days (Positive)	Nonreactive
HIV 1/2 Antibody Confirmation Differentiation		Negative
HIV 1 NAT (send-out to FBPHL)	7 days	Not Detected
<b>Hepatitis Serology</b>		
Hepatitis A Total Antibody	5 days	Negative
Hepatitis B Core Total Antibody (anti-HBc)	5 days	Negative
Hepatitis B Surface Antibody (anti-HBs)	2 days	Negative

<b>Test List (continued)</b>		
<b>Test Name</b>	<b>TAT</b>	<b>Reference Range</b>
<b>Syphilis Serology</b>		
Syphilis Serum EIA Screen	2 days	Negative
Syphilis RPR Screen	2 days	Negative
Syphilis RPR Titer	2 days	Negative
Syphilis VDRL (CSF Only) Screen	3 days	Negative
Syphilis VDRL (CSF Only) Titer	3 days	Negative
Syphilis TPPA Confirmation	3 days	Negative
<b>Other Serology</b>		
West Nile Virus IgM	7 days	Negative
Zika IgM	7 days	Negative
<b>Molecular Testing</b>		
Bordetella pertussis NAT	2 days	No Bordetella pertussis detected
Chlamydia (CT) NAT	2 days	Negative
Gonorrhea (GC) NAT	2 days	Negative
CT/GC NAT	2 days	Negative
Influenzae Virus A/B NAT	3 days	No Influenza A or B detected
Measles Virus NAT	7 days	No Measles Virus detected
Mumps Virus NAT	7 days	No Mumps Virus detected
Norovirus NAT	7 days	Negative
Shiga toxin NAT	7 days	No shiga toxin detected
Zika Virus NAT	7 days	Not Detected
<b>Herpes Virus</b>		
Culture Virus (Herpes)	7 days	No Herpes virus isolated
DFA Herpes Simplex Virus (HSV1/2)	2 days	Negative
HSV 1/2 NAT (Lesion/Pustule ONLY)	3 days	Negative for HSV-1 and HSV-2
<b>Parasitology</b>		
DFA Cryptosporidium/Giardia	2 days	Negative
DFA Pneumocystis carinii	2 days	Negative
Fecal Leukocyte (WBC)	2 days	No white blood cells seen
Ova & Parasite - Trichrome	3 days	No ova and parasites seen
ID of Parasite	24 hours	Varies
Pinworm	24 hours	No Enterobius vermicularis eggs or adults seen
<b>Mycology / Fungus</b>		
Culture	4 weeks / Positive 3-6 weeks	Negative
Fungus Isolate for Identification	2- 4 weeks	Varies
Systemic Fungus DNA Probe	1-2 days	Negative for Coccidioides immitis
<b>Miscellaneous</b>		
Blood Lead Screen	4 days	<5ug/mL
DFA Rabies	3 days	Negative

➤ For test requests of unusual organisms or outbreak testing, please also contact Disease Control at (951) 358 5107.

**Suspect Bioterrorism Agents:**

For suspect bioterrorism agents including: *Bacillus anthracis*, *Brucella species*, *Burkholderia pseudomallei*, *Burkholderia mallei*, *Francisella tularensis*, *Yersinia pestis*, *Clostridium botulinum*, please call Riverside County PHL for more information (951) 358 5070.

**ASM BT Agent Sentinel Lab Protocols are available at:**

<http://www.asm.org/index.php/guidelines/sentinel-guidelines>

**Regional Laboratory Response Network (LRN) Lab Contact Information:**

San Bernardino PHL

150 E. Holt Blvd.

Ontario, CA 91762

Laboratory Director: Linda Ward

**Weekdays:** Monday-Friday (8am-5pm)

Phone: (909) 458 - 9430

Fax: (909) 986 - 3590

**After Hours** (5pm - 8am), Weekends and Holidays

County Communication Center

Officer on Duty: (909) 356-3811 or (909) 356-3805

Lab staff are on duty 24/7 and will contact you within minutes.

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**CCR Title 17 Section 2505****Additional Specimens or Isolates to be Submitted to Public Health**

As of January 2018, The following specimens or isolates must be submitted as soon as available to the local or state public health laboratory:

**Specimens:**

- HIV-1/2 antigen or antibody reactive sera or plasma submitted as part of a diagnostic HIV test algorithm
- Malaria positive blood filmslides
- Measles immunoglobulin M(IgM)-positive sera
- Shiga toxin-positive fecal broths
- Zika virus immunoglobulin M (IgM)-positive sera

**Isolates:**

- Drug resistant *Neisseria gonorrhoeae* isolates (cephalosporin or azithromycin only)
- *Listeria monocytogenes* isolates
- *Mycobacterium tuberculosis* isolates
- *Neisseria meningitides* isolates from sterile sites
- *Salmonella* isolates (see section 2612 for additional reporting requirements)
- Shiga toxin-producing *Escherichia coli* (STEC) isolates, including O157 and non-O157 strains
- *Shigella* isolates

For more information:

<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Reportable-Disease-and-Conditions.aspx>

**RIVERSIDE COUNTY COURIER SPECIMEN PICK-UP SCHEDULE**  
**(Riverside County Community Health Centers)**

<b>AGENCY/ DEPT</b>	<b>ADDRESS</b>	<b>AM PICK-UP</b>	<b>PM PICK-UP</b>
Banning Community Health Center	3055 W. Ramsey Banning, CA 92220		<b>X</b>
Blythe Community Health Center	1293 W. Hobson Way Blythe, CA 92225		<b>X</b>
Corona Community Health Center	2813 S. Main Street Corona, CA 92882	<b>X</b>	
Hemet Community Health Center	880 N. State Street Hemet, CA 92543		<b>X</b>
Indio Community Health Center	47-923 Oasis Street Indio, CA 92201		<b>X</b>
Jurupa Community Health Center	9415 Mission Blvd. Riverside, CA 92509	<b>X</b>	
Lake Elsinore Community Health Center	2499 E. Lakeshore Drive Lake Elsinore, CA 92530		<b>X</b>
Moreno Valley Community Health Center	23520 Cactus Avenue Moreno Valley, CA 92553		<b>X</b>
Palm Springs Community Health Center	3111 E. Tahquitz Canyon Way Palm Springs, CA 92262		<b>X</b>
Perris Community Health Center	308 E. San Jacinto Ave. Perris, CA 92571		<b>X</b>
Riverside Neighborhood Health Center	7140 Indiana Avenue Riverside, CA 92504	<b>X</b>	
Rubidoux Community Health Center	5256 Mission Blvd. Riverside, CA 92509	<b>X</b>	

## General Specimen Submission Instructions

1. **Specimen Collection – Special Considerations**
  - a. Adequate patient preparation, specimen collection and specimen are critical in achieving accurate test results.
  - b. Specimens should be collected prior to beginning antibiotics
  - c. Collect specimen in containers appropriate for the test requested.
  - d. Use swabs, media or collection containers with current expiration dates.
  - e. Hold specimens under correct conditions before transport.
  - f. Observe time restrictions on collection and transport.
  
2. **Specimen Identification/Labeling**
  - a. Label specimen container with the following information:
    - i. Patient's first and last name or unique identifier
    - ii. Patient's date of birth (DOB) or **second** unique identifier
    - iii. Date and time of collection (when appropriate)
    - iv. Specimen source (when appropriate) (e.g. when sending more than one specimen for the same patient)
  - b. NOTE: Anonymous HIV testing is acceptable with only the unique identification number.
  - c. If possible, use a computer generated label to label all specimens. If that is not an option, please print legibly.
  
3. **Test Request Form – Complete the lab test request form as follows:**
  - a. Please print all information legibly. Computer generated labels may be used in place of hand written, provided all required information is provided.
  - b. Before specimen transport, verify that the names on the specimen and request form are in agreement.
  - c. Required Information
    - i. Patient's first and last name or unique identifier
    - ii. Patient Date of Birth and Patient ID or EPIC MRN or encounter # (FQHCs)
    - iii. Patient Sex
    - iv. Patient Address – City and Zip Code are most critical
    - v. Date of Collection
    - vi. Time of Collection (if appropriate)
    - vii. Specimen Source
    - viii. Submitter Location
    - ix. Name of physician ordering test
    - x. Test requested
    - xi. Some tests require the date of symptom onset (e.i. norovirus).
  
4. **Reference Cultures – Please indicate test requested AND organism suspected on test request form**
  - a. Bacterial/Mycobacterial Isolates
    - i. Ensure that isolates or broth are transported packaged in compliance with Division 6.2 Infectious Substance Shipping Guide requirements.

- ii. Please send an actively growing pure culture on solid test-tube media or broth.
    - iii. MGIT tube, MB bottle, or actively growing isolate for TB ID.
  - b. Slide for Malaria ID in protective slide holder
    - i. Thick and thin stained smears preferred
    - ii. Please include pertinent information related to clinical history, travel history, insect bites, etc.
  
- 5. **Blood, Serum, or Plasma Collected for Antibody or Molecular Assays**
  - a. **Acute Phase** – ASAP (no later than 7 days after symptom onset)
  - b. **Convalescent Phase** – 14-28 days after onset
  - c. Never freeze whole blood
  - d. Use ONLY plastic blood collection tubes
  - e. Follow the manufacturer’s instructions for your specific blood collection tube
  - f. Specimens that are **hemolyzed, lipemic, or contaminated** will be rejected
  
- 6. **Wound or Abscess**
  - a. Collect fluid or aspirate into the appropriate sterile container.
  - b. Never collect material onto a dry swab.
  
- 7. **Transport**
  - a. Ensure the integrity of specimens before transport.
    - i. Secure tops on the EDTA blood lead tubes.
    - ii. Tightly secure lids on urine containers.
    - iii. Use parafilm as needed to prevent leakage.
  - b. **Temperature Requirements:** specific storage and transport requirements are provided under each test description.
  - c. All blood tubes need to be placed in a plastic conical green top transport tube. The green tube or other specimen container should be placed in a biohazard zip lock plastic bag.
  - d. Place completed Laboratory Test Request form in outside pocket of biohazard bag. **DO NOT** wrap the test request form around the specimen.
  
- 8. **Specimen Quality Assurance Criteria** - To assure quality testing and to meet Federal and State regulations, the Public Health Laboratory has strict requirements for specimen identification, as detailed below:
  - a. **When an unsatisfactory specimen is received, an effort is made to contact the submitter ASAP by telephone, email or fax in an attempt to reconcile the discrepancy. Unsatisfactory specimens will be held for 72 hours before being discarded.**
  - b. **If the specimen is determined to be “Unsatisfactory” the reason will be printed on the report.** If you receive a report with a result of “Unsatisfactory” please collect a new specimen with new paperwork to be sent to the lab.
  - c. The following specimens do not meet quality assurance standards.
    - i. Specimens that lack proper identification. Unlabeled specimens will not be tested.
    - ii. Name or number on specimen not matching accompanied test request.



- 1) For partial mismatches, the submitter will be contacted to attempt to reconcile the information.
- iii. Name or identifier missing on specimen or test request.
- iv. Specimen with compromised quality:
  - 1) Collected in improper container that is not suitable for test requested
  - 2) Collected in expired container or on expired media
  - 3) Not enough specimen in the container
  - 4) Specimen containers that are broken, leaking or with evidence of contamination on outer surfaces or on request form
  - 5) Clotted, hemolyzed, or hyperlipemic blood
  - 6) Past the acceptable collection/transport time
  - 7) Specimen transported under inappropriate conditions
  - 8) Improper specimen for test requested
9. **Test “Turn Around Time” (TAT)** - Each test listed in the Test Request and Collection Guide has a projected TAT. This is the time from specimen receipt in the Public Health Laboratory to result entered into the Laboratory Information Management System (LIMS). This time is dependent on a non-holiday work week, courier pick up time of the specimens, time of day that the results are printed, and whether the specimen requires confirmatory testing.
10. Refer to the RUHS- DOPH Laboratory Fee Schedule for test prices and CPT codes.
11. All specimen referrals to CDPH or CDC laboratories **must** be processed and sent through the RUHS- DOPH Laboratory unless otherwise approved to be sent directly. Contact the Riverside Department of Public Health Laboratory 951-358-5070 and/or Disease Control 951-358-5107 prior to submitting specimens.

## Bacteriology Specimen Collection and Transport Guidelines

TEST NAME	SPECIMEN TYPE	REQUESTED VOLUME	CONTAINER	STORAGE / TRANSPORT	SPECIAL INSTRUCTIONS
Culture Aerobic	Blood, wound, abscess, aspirate, CSF, throat, sputum, eye, ear, genital, and body fluid	See Special Instructions	See Special Instructions	Dependent on type of specimen. Contact lab for more information. Transport within 24 hours of collection.	Please contact lab for sample volume each specimen type.
Culture for Identification	Pure culture isolate	NA	Slanted medium in screw-capped tubes.	Room temperature in a secondary shipping container	Please indicate suspected organism on Lab Request Form. <i>Salmonella/Shigella</i> isolates will be forwarded to MDL for further serotyping.
Culture Enteric	Stool	Add sample to bring the liquid level up to the “ <u>fill to here</u> ” line (approximately 1 gram)	C & S Para-Pak*	Transport at room temperature or on cold pack within 4 days.	Please specify for other enteric pathogens.  *GN Broth and MAC Broth are also acceptable for <u>STEC cultures ONLY</u> .
Salmonella Shigella Campylobacter STEC					
Shiga-toxin screen	Stool	Same as Culture Enteric	C & S Para-Pak	Store at 2-8°C for up to 5 days.	
Culture Group A Strep	Throat swab	NA	Swab Transport	Room temperature or on cold pack in ≤ 24 hours	Amies w/ or w/o charcoal, Stuart’s or comparable swab collection systems
Culture Group B Strep	Distal vaginal (vaginal introitus) and/or rectal swab	NA	<u>Nonnutritive</u> Swab Transport	Transport at room temperature within 24 hours or refrigerate for up to 4 days.	Amies <u>without</u> charcoal, Stuart’s, or comparable swab collection systems
Culture <i>Bordetella pertussis</i>	NP Swab	NA	NP swab placed in Amies with Charcoal or	Transport specimens collected in Amies w/charcoal to lab within 24 hours. Transport specimens collected in Regan-Lowe transport medium (Deeps) to lab immediately or incubate at 35-37°C and deliver within 48 hours.	Regan-Lowe Deeps: If using a swab, the tip must be submerged well into the medium. Break or cut any portion of the swab that is protruding from the tube. Tighten

TEST NAME	SPECIMEN TYPE	REQUESTED VOLUME	CONTAINER	STORAGE / TRANSPORT	SPECIAL INSTRUCTIONS
			Regan-Lowe transport tubes (Deeps)		the cap and deliver immediately to the laboratory.
Culture GC (Gonorrhea)	Eye, throat, rectal, genital, oral, respiratory tract, child abuse cases (all sources)	NA	Swab placed in Amies with Charcoal	Transport at room temperature in $\leq 12$ hours after collection.	Do not refrigerate or transport on cold pack. Specimens received after 12hrs and within 24hrs will be tested with a disclaimer. Specimens received after 24hrs will be rejected.
Gram Stain	Wounds, eye lesions, sterile fluids, body tissues, and certain discharges.	See Special Instructions	Slide Holder	Room temperature – Methanol or heat-fixed slide preferable. Transport as soon as possible.	Please contact the lab for instructions on specimen collection.

## Mycobacteriology Specimen Collection and Transport Guidelines

TEST NAME	SPECIMEN TYPE	REQUESTED VOLUME	CONTAINER	STORAGE / TRANSPORT	COMMENTS
Culture TB	Sputum (expectorated or induced)	5-10 mL	50 mL sterile conical tube	Transport refrigerated as soon as possible and within 96 hours.	Sputum - A first morning specimen is preferred.
	BAL, brush or wash, other respiratory fluids	5-10 mL	50 mL sterile conical tube or sterile urine collection container		Refer to: <b>TB Specimen Packing and Shipping Instructions</b> - Specimen < 2 mL may be rejected
	Body Fluids** (abdominal, amniotic, joint, pleural synovial, bile, ascites, etc.)	> 3 mL	Sterile leak-proof container	Transport ASAP at ambient temperature	Swab dipped in body fluid or specimen < 2 mL may be rejected
	Urine	40 mL (minimum 10-15 mL)			Do not pool urine; may be rejected.  First morning, mid-stream preferred.
	Stool	> 1g			- Stool – AIDS or immunocompromised patients only - Shipping containers available from the lab
	Blood	Adults > 5mL Children > 1mL			Do not refrigerate or freeze.
	Bone marrow aspirates	As much as possible	Collect in Blood Isolator tubes		Specimens received > 16 hours after collection may be rejected
	CSF	Optimally > 5 mL (minimum 2 mL)	Sterile leak-proof container		Do not collect in red-top, EDTA, or ACD tube.
	Tissue samples	≥ 1 g or 1 cm by 1 cm	Sterile leak-proof container containing 2-3 mL sterile nonbacteriostatic saline		Specimens submitted on a dry swab or fixed in formalin or other preservative may be rejected.

TEST NAME	SPECIMEN TYPE	REQUESTED VOLUME	CONTAINER	STORAGE / TRANSPORT	COMMENTS
	Gastric lavage or wash	Perform lavage with 25-50 mL chilled sterile D.I. water.	50 mL sterile conical tube or other sterile collection container	Transport ASAP at ambient temperature	If delayed more than 4 hours neutralize w/ 100 mg sodium bicarbonate within 1 hour or collection and transport ASAP at RT
MTB Drug susceptibility	Isolates of <i>Mycobacterium tuberculosis</i>	NA	Slanted medium in screw-cap tubes	Transport in crush-proof, leak-proof secondary containers	
GeneXpert MTB/RIF NAT	Sputum or sputum concentrate	5-10 mL 1 mL sputum concentrate	50 mL sterile conical tube Cryovial or similar	Transport refrigerated as soon as possible and within 96 hours.	Follow instructions for TB culture.
Quantiferon - TB Gold Plus	Blood	See <b>Serology Specimen Collection and Transport Guidelines</b>			

\*\*Specimens collected from wounds must be fluid or aspirate collected into a sterile container. **Dry swabs are not acceptable specimens.**

### Serology Specimen Collection and Transport Guidelines

TEST NAME		SPECIMEN TYPE	REQUESTED VOLUME	CONTAINER	STORAGE / TRANSPORT	COMMENTS
HIV-1 Antibody Oral Fluid		Oral Fluid: 1 mL		Orasure oral fluid collection vial	Transport to laboratory at room temperature (15-30 degrees C) not to exceed 37 degrees C (98 degrees F), within 21 days of collection.	Sent out to the Orange County Public Health Laboratory (OCPHL) for testing.
HIV-1 / 2 antibody/p24 antigen screen		Whole Blood : 2 mL  Plasma or Serum: 1 mL		Whole Blood Red-Top	Whole Blood: Transport as soon as possible at 2-8°C  Plasma or Serum: 2-8°C for 7 days ≤ -20°C 30 days	All initial positives are repeated in duplicate. If 2/3 reactive-automatically reflexed to supplemental test
HIV-1 / 2 Confirmation Differentiation Immunoassay				Serum Separator Tubes (SST) with and without activator. <b>No coagulant.</b>		
HIV-1 RNA NAT Qualitative Confirmatory Test				Plasma Separator Tubes (PST) with anticoagulants sodium citrate, heparin, or EDTA.		
Hepatitis Tests	HAV IgM EIA	Whole Blood : 2 mL  Plasma or Serum: 1 mL		Whole Blood Red-Top	Whole Blood: Transport as soon as possible at 2-8°C  Plasma or Serum: 2-8°C for 7 days ≤ -20°C 30 days	Positive result indicates current infection.
	HAV Total EIA			Serum Separator Tubes (SST) with and without activator. <b>No coagulant.</b>		Positive result indicates current or prior infection.
	HBV Core IgM EIA			Plasma Separator Tubes (PST) with anticoagulants sodium citrate, heparin, or EDTA.		Positive result indicates current infection.
	HBV Core Total EIA					Positive result indicates current or prior infection.
	HBV Surface Antibody EIA					Positive result indicates prior infection or immunization.

TEST NAME	SPECIMEN TYPE	REQUESTED VOLUME	CONTAINER	STORAGE / TRANSPORT	COMMENTS
Syphilis EIA Screen	Whole Blood : 2 mL  Plasma or Serum: 1 mL		Red top or serum separator vacuum collection tubes without anticoagulant.	Whole Blood: Transport as soon as possible at 2-8°C  Serum: 2-8°C for 5 days ≤ -20°C 30 days  Plasma: 2-8°C for <b>48 hours</b>	Specimens giving reactive or equivocal results will be retested in duplicate. If the repeat is again equivocal a fresh serum specimen will be requested.  Reactive and equivocal results will be automatically reflexed to RPR.
Syphilis RPR					
Syphilis TPPA					Sera may be frozen and thawed ONLY once.
VDRL	CSF ONLY	3-5 mL	Leak-proof Tube	Ship or transport at 2-8°C within 5 days of collection or freeze at ≤ -20°C for 30 days	VDRL performed on CSF ONLY.
West Nile Virus IgM Screen	Whole blood or serum	Blood-2 mL Serum-1 mL	Red top	Room temperature: 8 hours 2-8°C 48 hours -20°C > 48hrs	Test performed once per week. Positive and Equivocal specimens must be confirmed by neutralization test or by using the current CDC guidelines.
Quantiferon - TB Gold Plus	Whole Blood	1 mL	Collected into 4 Quantiferon tubes (gray/green/yellow/purple caps)	If incubated @ 37°C for 16-24 hours on cold pack. Ship to lab within 3 days.	Shake tubes vigorously for 5 seconds after collection.
				If NOT incubated – room temperature within 16 hours of collection	Tubes must be incubated at 37°C for 16-24 hours within 16 hours of collection
Other Serology	Whole blood, Plasma, serum, CSF	See Viral and Rickettsial Disease Laboratory Guidelines for Laboratory Services or CDC Infectious Disease Laboratories			Testing to be performed at CDPH VRDL or CDC. Contact the Riverside Public Health Lab and/or Disease Control prior to submitting specimens.

- Specimens that are **hemolyzed, lipemic, or contaminated** will be rejected
- Do not freeze whole blood. This will cause the specimen to hemolyze and be unacceptable for testing.
- Use only plastic blood collection tubes.

### Herpes Virology Specimen Collection and Transport Guidelines

TEST NAME	SPECIMEN TYPE	REQUESTED VOLUME	CONTAINER	STORAGE/TRANSPORT	COMMENTS
Herpes Culture	Mucocutaneous lesions	Swab in 3mL of Viral Transport Media (VTM)	Viral Transport Media	Refrigerate or transport on cold pack and deliver within 96 hours of collection. If delayed, freeze and ship on dry ice.	Automatic reflex to HSV-typing if cell culture positive.
	CSF	1 mL (minimum)	Sterile, leakproof container	Transport refrigerated within 24 hours.	Call the laboratory prior to submitting a CSF.
DFA HSV-1 and HSV-2	Lesion smeared on slide fixed in acetone.	See comments section	Slide holder	Send in slide holder within 4 hours at room temperature or keep at 2-8°C for up to 24 hours.	Please refer to Appendix A, page 21 of this manual for detailed instructions.
HSV-1 and HSV-2 NAT	Cutaneous and mucocutaneous lesion swab	Swab in 3mL of Viral Transport Media (VTM)	Viral Transport Media	Test as soon as possible, but sample may be stored refrigerated (2-8°C) up to 7 days prior to testing. Do not freeze samples. Do not store at room temperature.	Viral transport media with protein stabilizers, ie, MicroTest™ M5® and calcium alginate swabs, are not acceptable sample types for use.



### Molecular Testing Specimen Collection and Transport Guidelines

TEST NAME	SPECIMEN TYPE	REQUESTED VOLUME	CONTAINER	STORAGE/TRANSPORT	COMMENTS
Chlamydia (CT) and/or Gonorrhea (GC), NAT	Male and female urine  Female endocervical and male urethral  Oropharyngeal (throat) and rectal swabs	The urine liquid level must fall between the two black indicator lines on the tube label.	Aptima Multitest Swab Specimen Collection Kit  Aptima Urine Collection Kit for Male and Female Urine Specimens	Transfer the urine sample into the Aptima urine specimen transport tube within 24 hours of collection. Store at 2°C to 30°C.  Transport and store the swab in the swab specimen transport tube at 2°C to 30°C	See Appendix B for more detailed guidance.
Influenza A/B NAT	Nasal swabs in virus transport media; nasal aspirates in sterile container	2-3 mL VTM	Swab specimens using a synthetic tip (e.g., polyester or Dacron®) and an aluminum or plastic shaft in viral transport media (VTM).	Refrigerated at 4°C and sent on cold packs.  If samples cannot be received by the laboratory within five days, they should be frozen at -70 °C or below and shipped on dry ice.	Patient history required. Testing priority based on state and local guidelines.
Norovirus NAT	Fresh stool in sterile container	For suspected viral gastroenteritis outbreaks, collect at least three (3) non-formed stool samples ≥ 1 g / 1 mL	Sterile container	Refrigerate at 2-8 °C and transport on cold pack within 48 hours	Contact Laboratory prior to submitting specimens.
<i>Bordetella pertussis</i> NAT	Nasopharyngeal (NP) specimens	Swab in non-nutritive transport medium (e.g, Liquid Amies, without charcoal or Liquid Stuart) or	NP swab samples should be collected with suitable swab types (e.g. Polyester, Flocked Nylon or Rayon).	72 hours at room temperature or on cold pack.  Do not freeze samples	Unacceptable specimens: Throat swabs, nasal swabs, swabs in medium containing charcoal.

TEST NAME	SPECIMEN TYPE	REQUESTED VOLUME	CONTAINER	STORAGE/TRANSPORT	COMMENTS
		store unpreserved in a sterile tube without medium.			
Measles NAT	Throat, Nasal, or NP swab  Urine	Urine: 10-50 ml	Sterile synthetic swab (e.g., Dacron).  Collect urine in a sterile container from the first part of the stream. The first morning void is ideal.	Store all specimens at 4°C and ship on cold pack within 72 hours.  For longer storage, freeze at -70°C or colder.	Contact Laboratory prior to submitting specimens. Collect specimens within 2 weeks of rash onset.
Mumps NAT	Buccal or Throat (Oropharyngeal) Swab	Swab in 2-3 ml of <b>liquid</b> viral or universal transport medium.	Acceptable liquid transport media include VTM, UTM, cell culture medium, or a sterile isotonic solution such as PBS with added protein	Store all specimens at 4°C and ship on cold pack within 24 to 72 hours.	Contact Laboratory prior to submitting specimens.

### Parasitology Specimen Collection and Transport Guidelines

TEST NAME	SPECIMEN TYPE	REQUESTED VOLUME	CONTAINER	STORAGE/TRANSPORT	COMMENTS
O & P Concentrate/ Trichrome	Stool	Fill to fill line on Para Pak container. (Add one volume of the stool specimen to three volumes of the preservative.)	Para Pak 2 Vial Stool Kit with 10% formalin (pink top) and PVA (gray top)	Transport at room temperature	Do not over or under fill vials. Mix well after collection.
Cyclospora/ Isospora			Para Pak 2 Vial Stool Kit with 10% formalin (pink top)		Modified Acid-Fast / UV Fluorescence will be included in O&P test if suspected or requested by physician
DFA Cryptosporidium/Giardia					Do not over or under fill vials. Mix well after collection.
ID of parasite	Giemsa or Wright stained thick and thin smears	Thick and Thin smears	Slide Holder	Transport in a slide holder at room temperature within 3 days of collection	Use this for <i>Plasmodium</i> species ID. Please indicate travel history for suspect malaria cases.
	Skin scraping	At least 1 slide	Slide Holder	Transport in a slide holder at room temperature	Scrape using a scalpel coated with mineral oil. Transfer scraping to slide, cover with coverslip.
	Insect or worm	NA	Sterile Container	If insect or worm is alive, place in a jar with a wet paper towel; If dead, fix with 70-95% alcohol or formalin.	
Pinworm	Perianal impression	1 pinworm paddle or swube tube	Pinworm Paddle or Swube Tube	Place in sterile container. Hold at room temperature. Send to the Lab ASAP within 24 hours.	Specimen should be collected between the hours of 9:00 p.m. and midnight, or in the AM immediately upon rising prior to bathing or bowel movement
Fecal Leukocytes (WBC)	Stool	NA	Para-Pak 2-vial stool kit with PVA	Transport at room temperature	Do not over or under fill vials. Mix well after collection.

### Mycology / Fungus Specimen Collection and Transport Guidelines

TEST NAME	SPECIMEN TYPE	REQUESTED VOLUME	CONTAINER	STORAGE/ TRANSPORT	COMMENTS
Mycology/ Fungus  (All specimens sent to SBPHL for testing.)	Abscess/ drainage/ wound	Aspirate or Swab	Transport aspirate in syringe without needle or transfer to a sterile container. Aerobic swab transport system.	Room Temperature. Transport within 2-24 hours	If open abscess, collect with aerobic swab transport system. Non-cotton tipped swab transport system is preferred. Swabs are the least preferred collection device.
	Blood	8 ml	Lysis-centrifugation device (Isolator Tube) or tube containing SPS	Room Temperature. Transport isolator tubes within 2-16 hours. Other tubes within 2-24 hours	Do not refrigerate.
	Bone marrow	5 ml	Lysis-centrifugation device (Isolator Tube), green top (heparin), or tube containing SPS	Room Temperature. Transport isolator tubes within 2-16 hours. Other tubes within 2-24 hours	Use aseptic technique. Pediatric Isolator tubes are best. Do not refrigerate.
	Catheter	5 cm of distal end. Swab of infected skin site surrounding the intravenous line	Sterile screw-cap container	Refrigerate 4-8°C. Transport on cold pack within 2-24 hours	
	Eye	Use direct inoculation onto appropriate medium.		Room temperature. Transport 2-24 hours	Avoid media with cycloheximide.
	Hair/nails	Scrape infected area of scalp and, if possible, collect at least 10 broken hairs. Scrapings of infected nail area or clippings of infected nail	Sterile screw-cap container	Transport in dry conditions to prevent overgrowth of bacteria	Gently scrape scalp with sterile toothbrush or small hairbrush works well. Do not refrigerate.

### Miscellaneous Specimen Collection and Transport Guidelines

TEST NAME	SPECIMEN TYPE	REQUESTED VOLUME	CONTAINER	STORAGE/TRANSPORT	COMMENTS
Blood Lead Screen	Unclogged capillary blood (finger stick)	500 µL	Capillary EDTA tube.	Refrigerate or ship on cold pack to lab within 72 hours	Specimens received after 72 hours are not acceptable.  PM160 is no longer required as of 2/1/2017.
DFA Pneumocystis	Bronchoalveolar lavage, bronchial wash or induced sputum	≥ 5 mL	Sterile container	Refrigerate and transport to lab within 24 hours.	
Rabies exam*	Freshly severed animal head or whole bat delivered by Animal Care Services.	NA	Any clean transport container.	Transport to laboratory on cold pack or refrigerated within 24 hrs.	STAT testing available if human contact.  NOTE: Specimen must be accompanied by a completed Rabies Control Investigation Report
Food Exam*	Suspected food	NA	Sterile container	Transport to laboratory on cold pack or refrigerated within 24 hrs.	Based on Disease Control/ Environmental Health investigation.  Freezing samples may delay the testing and impede recognition & dissection of appropriate test samples. Repeated freeze-thaw cycles may reduce test sensitivity and should be avoided.

\*Contact Disease Control at (951) 358-5107

## Appendix A – Herpes Culture and DFA Specimen Collection Instructions

1. Label the slide with patient's name and identification number. Place slide on a level surface.
2. Depending on the lesion type described below, expose the base of the lesion. Do not disturb the base of the lesion. Discard the swab or needle.
  - a. Vesicular lesion – open a cervical lesion with a sterile swab. Open a vesicular lesion from an oral, genital, and skin site with a sterile, 27-gauge needle.
  - b. Ulcerative lesion – remove any pus from the lesion with a sterile swab.
  - c. Dried lesion – lift the crust from the lesion with a sterile needle.
2. Collect a cell culture specimen and a direct clinical specimen from the same site. **NOTE:** Avoid drawing blood while scraping the base of the lesion with the swab. Antibodies present in the serum may block viral antibody binding sites or inhibit viral replication in cell culture.
  - a. **Cell Culture Specimen Collection:** Scrape the base of the lesion with a sterile swab and immediately place the swab in transport media for cell culture.
  - b. **Direct Clinical Specimen Collection:**
    - i. Vigorously scrape the base of the lesion with a second, sterile swab. The specimen must contain infected cells from the base of the lesion.
    - ii. Firmly roll the swab onto the 2 wells of the glass slide covering both wells but remaining within the perimeter of each well. DO NOT smear the swab onto the slide because increased cell distortion may occur.
    - iii. Examine the swab macroscopically for adequate cell coverage. If the wells do not appear opaque, repeat step 3b. Discard swab.
    - iv. Allow the specimen to thoroughly air dry for 5-10 minutes. If the specimen is not dry, cells may be washed off the slide during fixation
    - v. Flood the slide with 0.5mL acetone and allow it to thoroughly evaporate.
  - c. Send the specimens to the lab for immediate processing within 4 hours. If delayed, store at 2-8°C for 24 hours or freeze the cell culture specimen at -70°. Store the direct specimen slide at -20°C for up to 72 hours.


## Appendix B – HOLOGIC Aptima Assay Specimen Collection Guidance

SPECIMEN	COLLECTION INSTRUCTIONS
<p><b>Female Endocervical Swab</b> Swabs need to be transported to the laboratory in the swab specimen transport tube at 2°C to 30°C within <b><u>60 days</u></b>.</p>	<ol style="list-style-type: none"> <li>1. Remove excess mucus from the cervical and surrounding mucosa using the cleaning swab (<b><u>white shaft swab</u></b>). Discard the swab. A large-tipped swab (not provided) may also be used to remove excess mucus.</li> <li>2. Insert the specimen collection swab (<b><u>blue shaft swab</u></b>) into the endocervical canal. Gently rotate the swab clockwise for 10-30 seconds in the endocervical canal to ensure adequate sampling.</li> <li>3. Carefully withdraw the swab. Avoid any contact with the vaginal mucosa.</li> <li>4. Remove the cap from the swab specimen transport tube and immediately place the specimen collection swab into the transport tube so that the tip of the swab is visible below the tube label.</li> <li>5. Carefully break the swab shaft against the side of the tube at the score line and discard the top portion of the swab shaft; use care to avoid splashing of contents.</li> <li>6. Tightly screw the cap onto the tube.</li> <li>7. Label tube with patient name, medical record number, date, and time. Place tube in biohazard specimen bag and seal.</li> </ol>
<p><b>Male Urethral Swab</b> Swabs need to be transported to the laboratory in the swab specimen transport tube at 2°C to 30°C within <b><u>60 days</u></b>.</p>	<ol style="list-style-type: none"> <li>1. The patient should not have urinated for at least 1 hour prior to sample collection.</li> <li>2. Insert the specimen collection swab (blue shaft swab) 2 to 4 cm into the urethra. Gently rotate the swab clockwise for 2 to 3 seconds in the urethra to ensure adequate sampling.</li> <li>3. Withdraw the swab carefully.</li> <li>4. Remove the cap from the swab specimen transport tube and immediately place the specimen collection swab into the transport tube so that the tip of the swab is visible below the tube label.</li> <li>5. Carefully break the swab shaft against the side of the tube at the score line and discard the top portion of the swab shaft; use care to avoid splashing of contents.</li> <li>6. Tightly screw the cap onto the tube.</li> <li>7. Label tube with patient name, medical record number, date, and time. Place tube in biohazard specimen bag and seal.</li> </ol>
<p><b>Male and Female Urine</b> Processed urine specimens must be transported to the laboratory at 2°C to 30°C within <b><u>30 days</u></b>.</p>	<ol style="list-style-type: none"> <li>1. The patient should not have urinated for at least 1 hour prior to specimen collection.</li> <li>2. Collect specimen in a sterile, plastic, preservative-free specimen collection cup.</li> <li>3. Instruct patient to collect 20 to 30 ml of first-catch urine (the initial urine stream and NOT mid-stream). Collection of larger volumes may reduce test sensitivity.</li> <li>4. Label the collection cup with patient name, medical record number, date, and time.</li> <li>5. Transfer the urine sample into the APTIMA urine specimen transport tube within 24 hours of collection.</li> <li>6. Remove the cap and transfer 2 ml of urine into the urine specimen transport tube using a disposable pipette. The urine level should be between the two black fill lines on the tube (referred to as minimum and maximum fill lines). The urine level must not be below the minimum fill line or above the</li> </ol>

	<p>maximum fill line.</p> <ol style="list-style-type: none"> <li>7. Tightly screw the cap onto the tube. This is now known as a processed urine specimen.</li> <li>8. Label tube with patient name, medical record number, date, and time. Place tube in biohazard specimen bag. Seal bag. Dispose of excess urine in appropriate manner.</li> </ol>
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SPECIMEN	COLLECTION INSTRUCTIONS
<p style="text-align: center;"><b>Rectal Swab</b></p>	<ol style="list-style-type: none"> <li>1. Insert tip of Aptima Unisex swab tip approximately 3-5 cm into the rectum. Rotate against the rectal wall at least three times. Swabs that are grossly contaminated with feces should be discarded and the collection repeated.</li> <li>2. Insert swab completely into the transport tube.</li> <li>3. Label the transport tube and store at 2-30°C. Transport to the lab within 60 days of collection.</li> </ol>
<p style="text-align: center;"><b>Oropharyngeal (Throat) Swab</b></p>	<ol style="list-style-type: none"> <li>1. Prepare specimen collection materials: tongue depressor and Aptima Unisex swab</li> <li>2. Instruct patient to tilt head back, breathe deeply, open mouth wide and say “ah”. This serves to lift the uvula and aids in reducing the gag reflex.</li> <li>3. Use tongue depressor to gently depress the tongue and look for areas of inflammation and /or exudate (pus).</li> <li>4. Carefully but firmly rub the swab over areas of pus or inflammation, tonsils and/or posterior pharynx. AVOID touching the swab top the tongue, teeth, roof of mouth or inside of cheeks.</li> <li>5. Remove swab carefully from the mouth. AVOID touching the swab top the tongue, teeth, roof of mouth or inside of cheeks.</li> <li>6. Insert swab completely into the transport tube.</li> <li>7. Label the transport tube and store at 2-30°C. Transport to the lab within 60 days of collection.</li> </ol>



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Prepared by: <u>Errin Rider</u>  Reviewed by: <u>Gina Douville</u>  Approved by: <u>Errin Rider</u>		Date: <u>04/24/2019</u>  Date: <u>04/24/2019</u>  Date: <u>04/24/2019</u>	

Review and Revision History						
Date	Version	Revisions	Revised By	Reviewed By	Approved By	Release Date
01/08/2019	1	Complete revision of QA-11 SSM from previous document control system and alignment to package inserts	ER	GD	ER	01/09/2019
03/11/2019	2	Added version 1 history. Corrected spelling and typos, changed PCR to NAT to match Lab Test Request, changed verbiage to reflect test report, added general information for Wound or Abscess, and changed volumes for TB to reflect lab SOP. Changed specimen information to align with Package Inserts. Added Mycology / Fungus.	ER	GD	ER	03/19/2019
04/24/2019	3	Pg. 15 - Removed Plasma from WNV test. Added "Screen" and "Positive and Equivocal specimens must be confirmed by neutralization test or by using the current CDC guidelines."	ER	GD	ER	4/24/2019