



Riverside University Health System Public Health Laboratory

Specimen Submission Manual

Laboratory Director: Errin C. Rider, Ph.D., D(ABMM)

Located at:

4065 County Circle Dr. Suite 106

Riverside, CA. 92503

Phone: (951) 358-5070

Fax: (951) 358-5015

Website: <http://www.rivcolab.org>

Public Health Duty Officer (after hour emergencies): (951) 782-2974

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.

Table of Contents

Section	Page Number
Test List	3 - 5
Suspect Bioterrorism Agents	6
Title 17 Specimen Submission Requirements	6
Courier Pick-up Schedule	7
General Specimen Submission Instructions	8-10
Bacteriology Specimen Collection and Transport Guidelines	11-12
Mycobacteriology Specimen Collection and Transport Guidelines	13-14
Serology Collection and Transport Specimen Guidelines	15-16
Molecular Testing Collection and Transport Guidelines	17-19
Parasitology Specimen Collection and Transport Guidelines	20
Mycology / Fungus Specimen Collection and Transport Guidelines	21
Miscellaneous Specimen Collection and Transport Guidelines	22

List of Abbreviations:

BT - Bioterrorism
CDC – Centers for Disease Control and Prevention
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
NAT – Nucleic Acid Amplification Test
OCPHL – Orange County Public Health Laboratory
PCR – Polymerase Chain Reaction
PHL – Public Health Laboratory
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

Test List		
Test Name	TAT	Reference Range
Bacteriology		
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 (NG)	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 and 2 NOT Detected
Gram Stain	24 hours	No organisms seen
Mycobacteriology		
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
HIV Serology		
HIV 1/2 Antigen/Antibody Combo Screen	2 days (Negative) 4 days (Positive)	Nonreactive
HIV 1/2 Antibody Confirmation Differentiation		HIV Antibody NEGATIVE
HIV 1 NAT (send-out to FBPHL)	7 days	Not Detected
Hepatitis Serology		
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
Syphilis Serology		
Syphilis Serum EIA Screen	2 days	Negative
Syphilis RPR Screen	2 days	Nonreactive
Syphilis RPR Titer	2 days	Nonreactive
Syphilis TPPA Confirmation	3 days	Nonreactive

Test List (continued)		
Test Name	TAT	Reference Range
Other Serology		
West Nile Virus IgM	7 days	Negative
Molecular Testing		
Chlamydia (CT) NAT	2 days	Negative
Gonorrhea (NG) NAT	2 days	Negative
CT/NG NAT	2 days	Negative
Coronavirus (SARS-COV-2) NAT	2 days	Not Detected
Influenza Virus A/B NAT	3 days	No Influenza A or B detected
Influenza/SARS-COV-2 Multiplex NAT	2 days	Negative
Measles Virus NAT	7 days	No Measles Virus detected
Mumps Virus NAT	7 days	No Mumps Virus detected
Norovirus NAT	7 days	Not Detected
<u>Respiratory Panel NAT (20 targets)</u>		
Viruses Adenovirus Coronavirus 229E Coronavirus HKU1 Coronavirus NL63 Coronavirus OC43 SARS-CoV-2 Human Metapneumovirus Human Rhinovirus/Enterovirus Influenza A H1-2009 Influenza A H3 Influenza B Parainfluenza 1 Parainfluenza 2 Parainfluenza 3 Parainfluenza 4 Respiratory Syncytial Virus	2 days	Not Detected
Bacteria Bordetella parapertussis (IS1001) Bordetella pertussis (ptxP) Chlamydia pneumonia Mycoplasma pneumoniae		
Parasitology		
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

Mycology / Fungus		
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 <i>Coccidioides immitis</i>
Rabies Virus		
DFA Rabies	3 days	Negative

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

➤ NAT = Nucleic Acid Test

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.

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

As of March 2020, the following specimens or isolates must be submitted as soon as available to the local or state public health laboratory:

Specimens:

- Malaria positive blood film/slides
- *Neisseria meningitidis* eye specimens
- 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 meningitidis* 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)

AGENCY/ DEPT	ADDRESS	AM PICK-UP	PM PICK-UP
Banning Community Health Center	3055 W. Ramsey Banning, CA 92220		X
Blythe Community Health Center	1293 W. Hobson Way Blythe, CA 92225		X
Corona Community Health Center	2813 S. Main Street Corona, CA 92882	X	
Hemet Community Health Center	880 N. State Street Hemet, CA 92543	X	
Indio Community Health Center	47-923 Oasis Street Indio, CA 92201		X
Jurupa Valley Community Health Center	8876 Mission Blvd. Riverside, CA 92509	X	
Lake Elsinore Community Health Center	2499 E. Lakeshore Drive Lake Elsinore, CA 92530		X
Moreno Valley Community Health Center	23520 Cactus Avenue Moreno Valley, CA 92553		X
Palm Springs Community Health Center	1515 North Sunrise Way Palm Springs, CA 92262		X
Perris Community Health Center	308 E. San Jacinto Ave. Perris, CA 92571	X	
Perris Valley Community Health Center	450 E. San Jacinto Ave Perris, CA 92570	X	
Riverside Neighborhood Health Center	7140 Indiana Avenue Riverside, CA 92504	X	X
Rubidoux Community Health Center	5256 Mission Blvd. Riverside, CA 92509	X	

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 Race and Ethnicity
 - v. Pregnancy status (if applicable)
 - vi. Patient Address – City and Zip Code are most critical
 - vii. Date of Collection
 - viii. Time of Collection (if appropriate)
 - ix. Specimen Source
 - x. Submitter Location
 - xi. Name of physician ordering test
 - xii. Test requested
 - xiii. Diagnosis code
 - xiv. Some tests require the date of symptom onset (i.e. Norovirus).

4. **Reference Cultures – Please indicate test requested AND organism suspected on test request form**
 - a. Bacterial/Mycobacterial Isolates
 - i. Ensure that isolates 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 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 NG (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 AFB	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: TB Specimen Packing and Shipping Instructions - 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	Never submit a swab dipped in body fluid. Specimen volume < 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
	Wound or Abscess samples	<u>≥1gram or Copious amount</u>	50 mL sterile conical tube or other sterile collection container	Transport ASAP at ambient temperature	Wound or abscess specimens must be fluid or aspirate collected into a sterile container. Swab specimens are strongly discouraged, unless it is the only specimen available. Submit swabs with copious amount of sample in 2-3 mL sterile saline. Swabs submitted in transport medium or commercial swab transport device are unacceptable.
	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		If delayed more than 4 hours neutralize w/ 100 mg sodium bicarbonate within 1 hour of 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 Serology Specimen Collection and Transport Guidelines			

Serology Specimen Collection and Transport Guidelines

TEST NAME		SPECIMEN TYPE	REQUESTED VOLUME	CONTAINER	STORAGE / TRANSPORT	COMMENTS
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. No coagulant.		
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. No coagulant.		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 TYPE	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 48 hours	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.
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.

Molecular Testing Specimen Collection and Transport Guidelines

TEST NAME	SPECIMEN TYPE	REQUESTED VOLUME	CONTAINER	STORAGE/TRANSPORT	COMMENTS
Hologic Chlamydia (CT) and/or Gonorrhea (NG), NAT	Male and female urine Female endocervical and male urethral Female vaginal 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 for vaginal, throat and rectal specimens Aptima Urine Collection Kit for Male and Female Urine Specimens Aptima Unisex Swab Specimen Collection Kit for Endocervical and Male Urethral Swab	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 click below to view Hologic collection videos. Hologic Aptima Collection Guidance Videos
Hologic SARS-CoV-2 NAT	Nasopharyngeal (NP), nasal, and oropharyngeal (OP) swab specimens	Aptima Multitest Swab Specimen Collection Kit - Or - 1-3 mLs VTM/UTM, Saline, liquid Amies, specimen transport medium (STM)	Aptima Multitest Swab Specimen Collection Kit (ONLY OP and Nasal Swabs) The following types of VTM/UTM can be used. Remel MicroTest M4, M4RT, M5 or M6 formulations Copan Universal	Specimens collected in Aptima Multitest Tube may be stored under at 2°C to 30°C up to 6 days. Specimens collected in VTM/UTM can be stored at 2°C to 8°C up to 96 hours. Remaining specimen volumes can be stored at -70°C.	Contact Laboratory prior to submitting specimens.

TEST NAME	SPECIMEN TYPE	REQUESTED VOLUME	CONTAINER	STORAGE/TRANSPORT	COMMENTS
			Transport Medium BD Universal Viral Transport Medium Puritan Universal Transport Medium Hardy/Healthlink (330CHL) Universal Transport Medium DHI/Quidel: 330C Fisher Healthcare 23001718		
Coronavirus (SARS-COV-2 NAT and Multiplex SARS-COV-2/Influenza NAT)	Nasopharyngeal, Oropharyngeal, or Nasal swabs in virus transport media; sputum or respiratory aspirates in sterile container	1-3 mL VTM or PBS	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 within 72 hours. If samples cannot be received by the laboratory within three 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.
Influenza A/B NAT	Nasopharyngeal, Oropharyngeal, or Nasal swabs in virus transport media; nasal aspirates in sterile container	2-3 mL VTM			

TEST NAME	SPECIMEN TYPE	REQUESTED VOLUME	CONTAINER	STORAGE/TRANSPORT	COMMENTS
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.
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 liquid 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.
Respiratory Panel NAT	NP swab	Swab in 3 ml of liquid viral or universal transport medium.	Acceptable liquid transport media include VTM, UTM, cell culture medium, or a sterile isotonic solution such as PBS	<ul style="list-style-type: none"> Room temperature for up to 4 hours (15-25°) Refrigerated for up to 3 days (2-8°) Frozen for up to 30 days (≤ -15° or ≤ - 70°) 	Contact Laboratory prior to submitting specimens.

NAT = Nucleic Acid Test

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.	Para Pak 2 Vial Stool Kit with 10% formalin (pink top) and PVA (gray top)	Transport at room temperature	Add Sufficient stool to bring the liquid level up to the “Fill to Here” line. 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
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.	Please contact RUHS-Public Health Disease Control Dept. at 951-358-5107 to request STAT testing for 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) 358-510

	Department of Public Health Laboratory	Section or Department: Customer	Version 5
	Doc. #: CLI.CSR.MAN.001	Title: Specimen Submission Manual	Release Date: 11/20/2021 Page #: 23 of 23
Prepared by: Errin Rider		Date: 10/8/2021	
Reviewed by: Neena Bhakta/Gina Douville		Date: 11/18/2021	
Approved by: Errin Rider		Date: 11/20/2021	

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
11/20/2020	4	Removed Herpes Virology from page 16 and 22; grammatical edits throughout; updated reporting languages to match current reports; removed HIV Oral test; removed Zika; removed Bordatella pertussis NAT; added SARS-COV-2 NAT; added Influenza/SARS-COV-2 NAT; removed Shiga toxin NAT; removed Herpes virus culture, DFA, and NAT; removed HIV and Measles from required specimens to be sent to PHL; updated RC CHC list; updated Test Request form requirements; deleted "or broth" from bacterial/mycobacterial isolates reference cultures section; removed VDRL from Syphilis tests; updated O & P comments; updated blood lead screen requested volume; updated rabies exam comments; removed Appendix B	ER/GD/NB	ER/GD/NB		

11/20/2021	5	Added Respiratory Panel NAT to Test List: Remove Blood Lead screen; Added Respiratory Panel NAT, NAT to Coronavirus (SARS-COV-2 NAT and Multiplex SARS-COV-2/Influenza NAT), and Hologic SARS-CoV-2 NAT to Molecular Testing Specimen Collection and Transport Guidelines; changed GC to NG for gonorrhea in all locations where needed; added link to Hologic Aptima Collection Kit videos and removed Appendix with Aptima collection instructions	ER			
------------	---	--	----	--	--	--