San Joaquin County
Public Health Services
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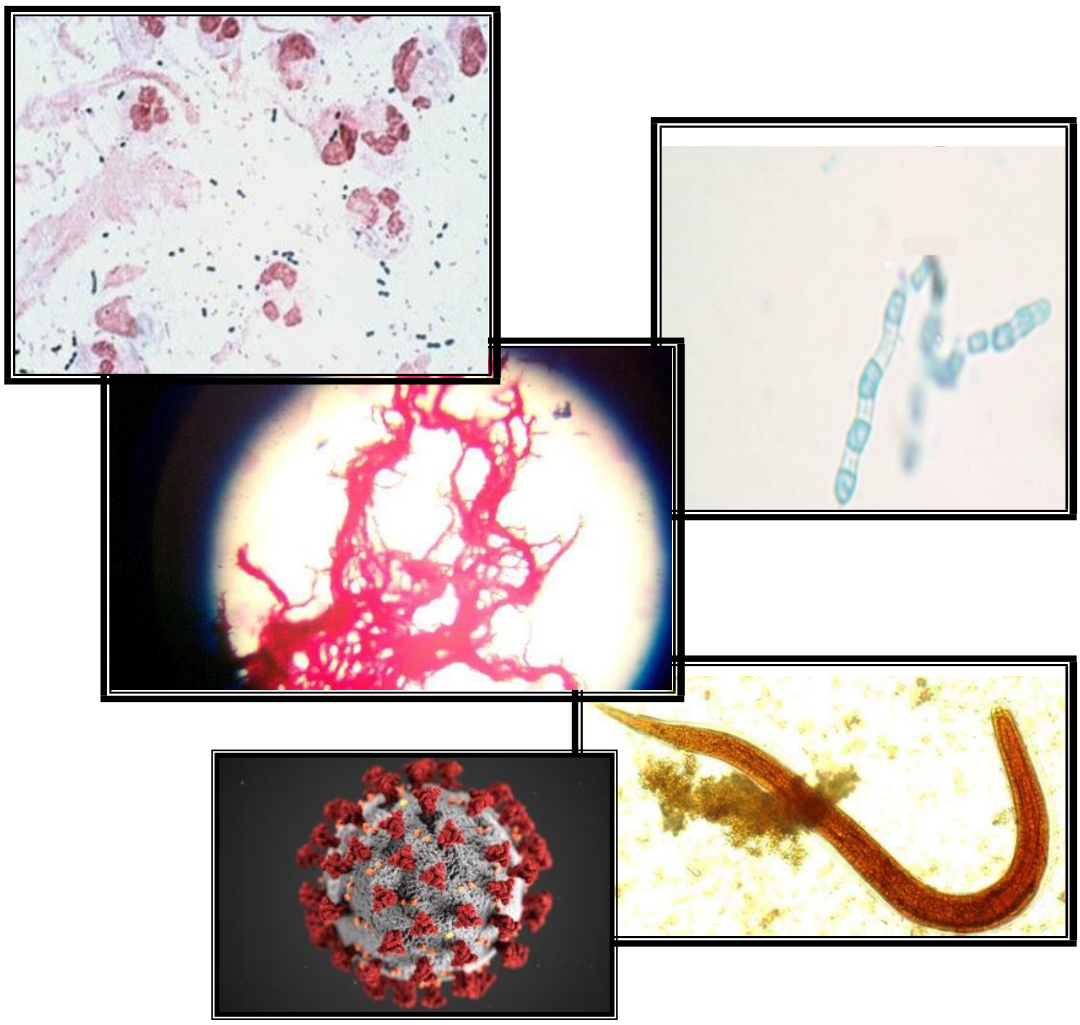
San Joaquin Public Health Laboratory

Specimen Collection Guide

Version 2024, Effective Date 1.31.24



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GENERAL INFORMATION

Laboratory Phone Numbers

Days of Operation:	Monday-Friday
Hours of Operation	8 am – 5 pm (Closed 12-1 lunch)
Main laboratory:	(209) 468-3460
Fax Number:	(209) 468-0639
After Hrs Emergency No.	(209) 468-6000 (24/7 Phone #)
Contact Email	phslabmgrs@sjcphs.org

Laboratory Accreditations:

CLIA:	05D0643989
California Dept. Public Health	1249
ELAP	1892
API	57887
CAP	2403001-01
WSLH	4204

Other Useful Numbers

Alpine County Health Department……	**Phone:**	**530-694-2235**
	Fax:	**530-694-2252**
Amador County Health Department……...	**Phone:**	**209-223-6407**
	Fax:	**209-223-1562**
Calaveras County Health Department……	**Phone:**	**209-754-6460**
	Fax:	**209-754-1709**
Mariposa County Health Department……	**Phone:**	**209-966-3689**
	Fax:	**209-966-4929**
Mono County Health Department……...	**Phone:**	**760-924-1830**
	Fax:	**760-924-1831**
Stanislaus County Health Department……	**Phone:**	**209-558-7000**
	Fax:	**209-558-7531**
San Joaquin County Health Department……	**Phone:**	**209-468-3411**
	Fax:	**209-468-3823**
Tuolumne County Health Department……...	**Phone:**	**209-533-7403**
	Fax:	**209-533-7406**

Laboratory Requisition Form Example

Refer to http://www.sjcphs.org/diseases/public_health_Laboratory.aspx for current version

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SAN JOAQUIN COUNTY
PUBLIC HEALTH LABORATORY
1601 E. HAZELTON AVE.
STOCKTON, CA 95205
Harmeet Kaur, Ph.D., HCLD (ABB), Lab Director
Phone: 209-468-3460
Fax: 209-468-0639
CLIA # 05D0643989

LABORATORY USE ONLY

LAB NUMBER _____ DATE / TIME RECEIVED _____

Revised 2.9.23 HK/ SS

SUBMITTER

Agency/County Name: _____

Site Name: _____

Street Address: _____

City, State, Zip _____

Physician /NPI#: _____

Phone: _____, Fax: _____

Patient Name: _____ _____ _____
Last Name First Name Middle Initial

Street Address: _____

City _____ **State** _____ **Zip** _____

County: _____

Phone: _____

Medical Record #: _____

Accession # _____

Birth date: _____ GENDER: M ☐ F ☐ Trans M ☐ Trans F ☐

Pregnancy Status: ☐Pregnant ☐ Not Pregnant ☐ Unknown ☐ N/A

Diagnosis Code/ICD 10 Code: _____

IF PATIENT IS DECEASED, Specify Date of Death: _____

Billing Information-Check box for billing source (REQUIRED) Submit copy of insurance card and verification

Policy # _____

☐ Submitter ☐ Medi-Cal ☐ Medicare ☐ FPACT ☐ Health Plan of San Joaquin ☐ Health Net ☐ other insurance _____

☐ No charge (Title 17 or CD/Health Officer Approval) ☐ Contract

Specimen Information

DATE SPECIMEN TAKEN: _____ TIME SPECIMEN TAKEN: _____ SPECIMEN SITE: _____

SPECIMEN SOURCE: (check one from below)

☐ Blood ☐ CSF ☐ Nasal pharyngeal ☐ Rectal ☐ Sputum ☐ Urethra ☐ Vaginal ☐ Bronchial alveolar lavage
☐ Cervix ☐ Feces ☐ Lesion ☐ Serum ☐ Throat ☐ Urine ☐ Plasma ☐ other _____

Laboratory Tests Requested (*denotes tests requiring CD/Health Officer Approval prior to submission)

BACTERIOLOGY
- ☐ Enteric culture (stool)
- ☐ Enteric culture for ID (isolate)
- ☐ Non-enteric culture for ID
- ☐ Food testing*
- ☐ Bordetella pertussis culture/PCR
- ☐ Shiga toxin PCR
- ☐ Streptococcus culture

MYCOBACTERIOLOGY
- ☐ Acid Fast Culture
- ☐ Acid Fast Smear
- ☐ Drug Susceptibility (Mtb only)
- ☐ Mycobacteria I.D.
- ☐ Mycobacterial DNA Probe
- ☐ Mycobacterium tuberculosis NAAT (GeneXpert)
- ☐ QuantiFERON TB Gold Plus

STD SCREENING
- ☐ Gonorrhea culture
- ☐ Gonorrhea NAAT
- ☐ Chlamydia NAAT
- ☐ Trichomonas NAAT

SYPHILIS
- ☐ RPR
- ☐ TP-PA
- ☐ VDRL (Spinal Fluid only)

HIV
- ☐ HIV Ab/Ag Screen
- ☐ HIV Confirmation
- ☐ HIV Qualitative NAAT
- ☐ HIV Quantitative Viral Load

HEPATITIS
- ☐ Hepatitis C Qualitative NAAT
- ☐ Hepatitis C Quantitative Viral Load

VIROLOGY
- ☐ Norovirus NAAT*
- ☐ Enterovirus NAAT*
- ☐ Flavivirus NAAT*
- ☐ Respiratory NAAT Panel
- ☐ Gastrointestinal NAAT Panel
- ☐ Influenza diagnostic NAAT
- ☐ Influenza subtyping NAAT
- ☐ Herpes 1 &2 / VZV NAAT
- ☐ Measles NAAT*
- ☐ Mumps NAAT*
- ☐ Influenza SARS-CoV-2 (Flu SC2) Multiplex
- ☐ SARS-CoV-2 NAAT
- ☐ SARS-CoV-2 Whole Genome sequencing (WGS)*

VIRAL SEROLOGY
- ☐ Rubeola Antibody
- ☐ WNV Antibody
- ☐ SARS -COVID Total Antibody*

MYCOLOGY
- ☐ Fungus Culture for ID

PARASITOLOGY
- ☐ Blood Smear
- ☐ Helminth Identification
- ☐ Arthropod Identification

Title 17 Submission/Surveillance
- ☐ **Title 17 submission**
- ☐ Surveillance
- ☐ Other

*Testing will require approval of the San Joaquin/ or other County Public Health partners prior to submittal

Specimen Collection and Shipping Guidelines

Purpose: The document provides general specimen collection guidelines for healthcare providers and public health staff.The specimens listed in this document are those that may need to be collected to detect the etiologic agent in question or during a disease outbreak. When a specific pathogen is known or very strongly suspected, specimen collection should be tailored to the pathogen.

San Joaquin County Public Health Laboratory (SJCPHL) does not have facilities for specimen collection. Contact SJCPHL for assistance with any collection guidance or questions. All specimens for examination should be submitted to the Public Health Laboratory by approved methods.

The accuracy of any test procedure is dependent on the quality of the specimen. Quality of the specimen is dependent on how and when it was collected, specimen preservation and transportation to thelaboratory.

Safety: It is the responsibility of the submitter to ensure that their specimens are not a hazard to transport or laboratorypersonnel. To protect the safety of others, the following precautions must be followed when collecting specimens:

- During specimen collection wear appropriate personal protective equipment.
- Use leak-proof containers and plastic zip-lock transport bags **that have a separate outside compartmentfor the test requisition form.**
- Make sure screw-cap lids are fastened evenly and securely. Ensure that no label material is caught inthe threads of the lid.
- Do not transport leaking containers or use containers that do not close securely – these compromise testresults and are a hazard to couriers and laboratory personnel.
- To protect the safety of others, take care not to contaminate the outside of the specimen container or thelaboratory requisition form.

Specimen Labeling: Proper identification of every patient sample is as important as the quality of the sample and theprecision of the laboratory. We will not test unlabeled or mislabeled specimens. Please follow these guidelines when collecting specimens:

- Clearly label the specimen container with the patient's name, date of collection, and Medical Record(MR) number or Date of Birth (DOB).
- **CLIA regulations require two (2) unique identifiers for each patient, either a name and birth date, or name and Medical Record number, on the specimen container and requisition form.**
- Check with the patient to make sure that you are collecting/drawing the right person.
- Verify the patient's name with the test requisition and container label after collection.

Specimen Collection: The patient specimen or collection site must be carefully selected so that it represents the activedisease process and is not overly contaminated with indigenous microbial flora.

- Select the correct site and use the proper collection techniques.
- Collect the proper volume of specimen for the test; be aware that some tests are compromised by anexcess of specimen.
- Collect specimens in the proper container; test results can be affected by preservatives and anticoagulants.
- Collect specimens using appropriate container for the test requested. See SJCPHL Test Request information forappropriate specimen to collect.
- Use media or collection containers with current expiration dates.
- San Joaquin County Public Health Laboratory provides the following collection kits supplies, contact laboratoryfor supply order form (See Appendix 1).
    - Hologic Aptima Chlamydia/Gonorrhea unisex swabs and urine specimen collection kits
    - Blood vacutainer tubes
    - Enteric collection kits
    - Laboratory forms
    - Nasopharyngeal swabs – dry
    - Ova & Parasite collection kits
    - Respiratory specimen collection kits – includes swab and Viral Transport media (VTM).
    - Specimen bags
    - Sputum collection containers
    - Stool collection containers
    - Urine collection containers
    - Viral Transport media (VTM)
- **Contact PHL for any collection supplies needed and for assistance @ 209-468-3460**.
- Specimen identification. **Label container with patient's last name and first name, date of specimen collectionand type of specimen.**
- A completed laboratory requisition must accompany each specimen (Refer to page 5 for example, Lab forms are uploaded to http://www.sjcphs.org/disease/public_health_Laboratory.aspx)
  Required information:
    - Patient's last and first name.
    - Medical Record number or Client ID
    - Patient's address
    - Patient's birthdate and gender
    - Date of specimen collection
    - Time of collection
    - Pregnancy status for females
    - Specimen source
    - Test requested
    - Submitter information, including address and physician name, National Provider Identifier (NPI), phone number and fax number.
    - Billing information, such as, Medi-Cal or private insurance information.
- Cultures for Identification (CI's) are submitted using forms specific for bacteriology, mycology, orMycobacteriology (see Appendix). Contact PHL for any questions on the forms if needed.
    - Note: All Salmonella isolates must be submitted to SJCPH Laboratory for typing and referral to the Statelab.
    - All initial *Mycobacterium tuberculosis* isolates must be referred to SJCPH Laboratory for identification,referral for genotyping to the State Laboratory and if necessary, drug susceptibility testing.

- Please refer to California Title 17 Code of Regulation 2500 and 2505 for further information on specimenswhich must be reported to Public Health Communicable Disease/Morbidity and which cultures must be submitted to the Public Health Laboratory. https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/LabReportableDiseases.pdf

- Transport of specimens to SJPH Laboratory. Transport specimens at the required temperature. Mail or deliverspecimens immediately after collection at the recommended transport conditions. The Laboratory address is:

  San Joaquin County Public Health
  Laboratory1601 E. Hazelton Ave.
  Stockton, CA 95205
  Telephone (209) 468-3460.

  The laboratory is open from 8:00 am to 5:00 pm, closed 12-1 pm for lunch, Monday through Friday (excluding holidays). Courier service may be provided upon request. Please contact the Public Health Laboratory at 209-468-3460 for questions regarding specimen transport. Email any urgent matters at phslabmgrs@sjcphs.orgin if unable to reach out via the phone.

Packaging and Shipping instructions:

- Currently clinical specimens are divided into three categories for shipping purposes.
  - Unregulated – Samples not known to contain any agent capable of infecting humans or animals.
  - Biological Substance – Category B (UN 3373) – Is defined as any clinical sample that does not meet the definition of Category A. In general, specimens in Category B are samples that are being sent for diagnostic purposes including virus isolates being shipped for further characterization. Patient samples are considered Category B and are defined as coming directly from humans or animals, including excreta, blood and components, tissue, tissue fluid, body parts for diagnostic or research purposes and disease prevention and treatment. Diagnostic shippers must be used for shipping category B.
  - Biological Substance – Category A (UN 2814) – Is defined as a substance or agent that is capable of causingpermanent disability, life-threatening or fatal disease. This packaging must include a shipping Dangerous Goods Declaration, shipper must be certified as an Infectious substance shipper, and a 24/7 contact number must be provided. See the web site below for further information.

  https://www.aphis.usda.gov/emergency_response/tools/transportation/htdocs/images/InfectSubstances.pdf

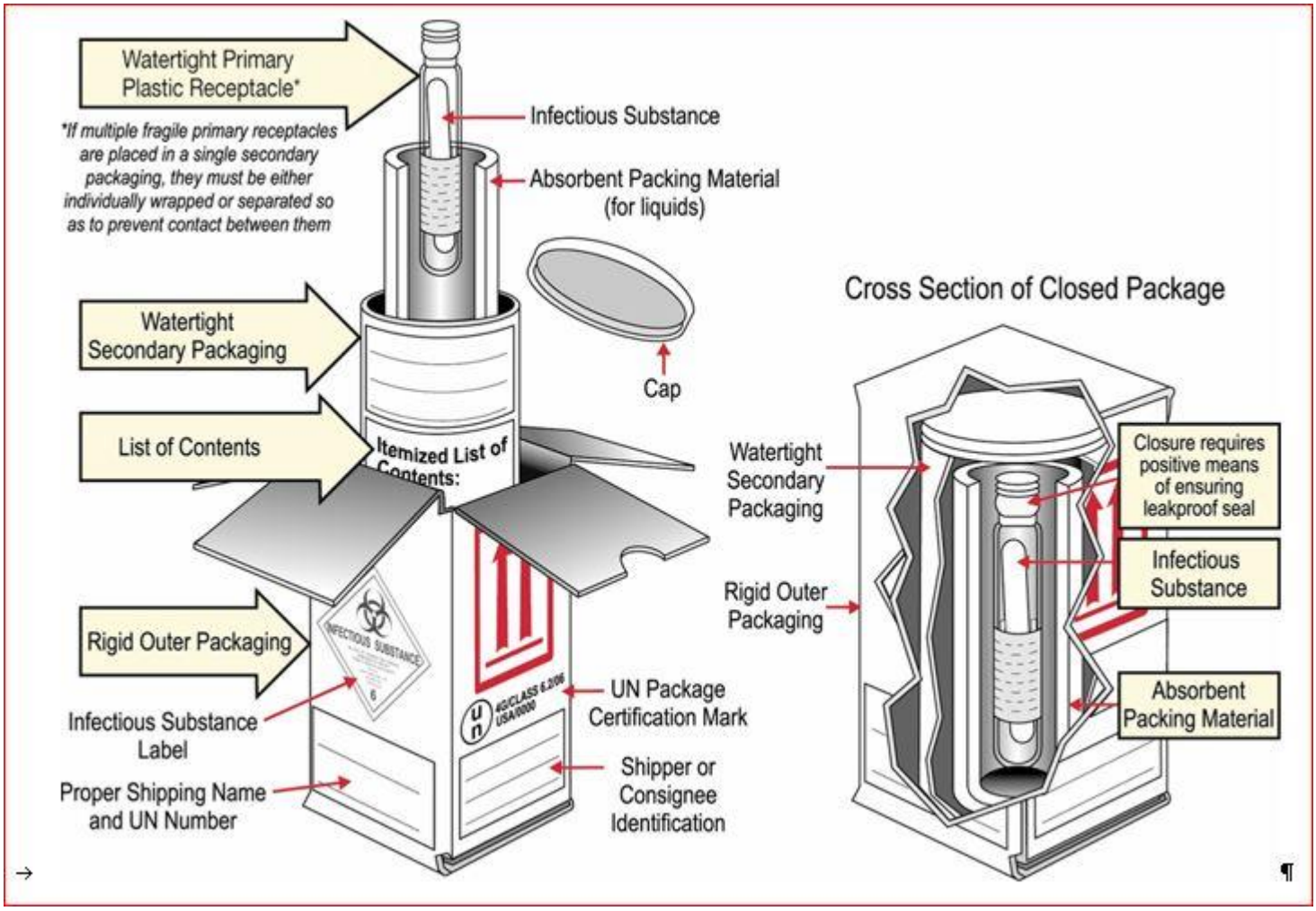
  - Complete definitions for these three categories can be found at IATA Dangerous Goods Regulations (IATA1.0) and the Code of Federal Regulations (49 CFR 171.8). The rules and regulations are subject to change and more stringent rules can be established by any carrier. The following guidelines are for your convenience. Please contact the laboratory or your carrier for changes or requirements. The Public Health Laboratory may assist the submitter in selecting containers, contact 209-468-3460.

Diagnostic Shipping Container Packaging Information: Place the primary container (such as blood tube) in a secondary container, such as a zip lock bag with absorbent material (wrap specimen in paper towel). Place laboratory request form on the outside of secondary container, such as in outer pouch of zip lock bag. Do not place laboratory form around primary specimen container. Place secondary container in a Diagnostic shipping box with cushion material. Make sure the shipping box is properly addressed and has the required labeling, postage, shipping documents, as necessary. Some Diagnostic shipping containers have an additional plastic bottle; the specimens are placed in the secondary container, such as zip lock bag, and then placed into

plastic bottle which is then placed into the Diagnostic shipping box. The box is sealed then addressed for shipping. These containers usually have labels for marking outside of the box as a "Diagnostic Specimen Container". Specimens that are hand delivered by courier may be placed in zip lock specimen transport bag and then in an outer crush resistant container. Contact laboratory for assistance.

- Courier Services. SJPH Laboratory may provide courier services within the city of Stockton. Contact thelaboratory for further information @ 209-468-3460.
- Training for sentinel laboratories: SJPHL encourages the Sentinel laboratory staff to sign up on the CDC train website to take the Packaging and Shipping.

https://www.cdc.gov/labtraining?Sort=format%3A%3Aasc



TEST REQUEST INFORMATION – Laboratory Test List Alphabetical

Test Name	CPT
AFB Culture (Concentrate & Isolation)	87015 & 87116
AFB Smear	87206
AFB Culture Blood/MAC/MAI	87116
Bacterial culture – Misc.	87070
Chlamydia NAAT test	87491
Diphtheria Culture	87070
Enteric Culture – Salmonella/Shigella/E. coli	87045
Enteric Culture Isolate ID	87045
Enterovirus NAAT	87798
Flavivirus NAAT*	-
Flu-SARS CoV-2 NAAT	87636
Fungus Culture	87102
Gastrointestinal Panel PCR (22 Targets) NAAT	87507
Hepatitis C Qualitative RNA NAAT	87521
Hepatitis C Quantitative RNA NAAT	87521
Herpes Simplex 1 and 2/VZV NAAT	87529x3
HIV1 and HIV2 Antibody Screen - Serum	87806
HIV 1 Antibody confirmation	86701 & 86702
HIV 1 Quantitative RNA NAAT	87536
Influenza Screen NAAT	87502
Influenza Subtype NAAT	-
Measles NAAT*	87798
Mpox (Non-Variola Orthopox) NAAT	87798
Mumps NAAT*	87798
Mycobacteria CI reference ID	-
Neisseria gonorrhea culture	-
Neisseria gonorrhea NAAT	87591
Norovirus NAAT*	87798
Parasite Reference	-
Pertussis Culture	87070
Pertussis NAAT	87798
Respiratory Panel NAAT (22 Targets) NAAT	87633
Ova & Parasite Panel (Concentrate/Trichrome)	87177 & 87209
QuantiFERON TB Gold Plus	86481
RPR Qualitative	86592
RPR Quantitative	86593
Rubeola Antibody	86765
SARS-CoV-2 NAAT	
SARS CoV-2 WGS	
STEC/Shiga Toxin testing	87505
Treponemal Test (TPPA)	86780
Trichomonas NAAT	87661
Varicella NAAT	87798
VDRL	86592
West Nile Virus	86788 & 86789
Xpert Carba-R NAAT	87150
Xpert MTB/RIF NAAT	87556

* Measles, Mumps, Norovirus and Zika testing provided **only** by referral from Communicable Disease Division of SJCPH.

This list is not conclusive. If a particular test is desired and is not included in this guide, please call the Public Health Laboratory @ 209- 468-3460 for assistance.

Collection Guide

Bacteriology Services

DISEASE	TEST (1)	Specimen (2)	Special Handling (4)
Anthrax	Culture	**Isolate**	**Immediately** contact Public Health Laboratory @ 209-468-3460 if anthrax case suspected or if anthrax cannot be ruled out.
	PCR	**Environmental and clinical specimens**	Contact Public Health Laboratory or Public Health if there is a suspected release of anthrax or cases of anthrax are suspected. Not for routine testing.
Bordetella pertussis	Culture	**Isolate**	Culture of clinical specimens and direct testing of clinical specimensby PCR. Contact Public Health Laboratory prior to submission and for specimen collection kits.
	PCR	**NP swab**	NP swab in sterile tube or submitted in Regan Lowe media.
Brucellosis (Undulant Fever)	Culture PCR	CI, Isolates **Environmental and clinical specimens**	Contact Public Health Laboratory **immediately**. Specimens may be referred to CDPH-MDL for definitive identification.
Campylobacter	Culture	Stool	Submit specimens in Cary Blair transport media only. Specimens must be submitted within 4 days of collection.
	PCR	Stool	Submit specimens in Cary Blair transport media as soon as possible.
Chlamydia	NAAT	**Genital, Urine, Rectal &** Pharyngeal specimens	Amplified detection in cervical, urethral, urine, rectal and pharyngeal specimens for screening purposes only. Not recommended for medical legal instances. Culture recommended.
Cholera	Culture PCR	Stool	Contact Public Health Laboratory prior to submission. Stool must be submitted in Cary Blair transport media.
Diphtheria	Culture	NP swab, Pseudo **membrane, skin lesion**	Contact Public Health Laboratory for Amies culture transport media.

Collection Guide

Bacteriology Services

DISEASE	TEST [1]	Specimen [2]	Special Handling [4]
E. coli O157-H7	Culture	Stool GN Broth	Stool must be submitted in Cary Blair Transport Media. Contact Public Health Laboratory for specimen container. Shiga producing broths maybe submitted for confirmation or identification of non-O157 E. coli.
Food borne illness	Culture	Stool Food	Contact Communicable Disease Division prior to submission of specimens. All food related illness is evaluated epidemiologically prior to testing food orstool for pathogens. **Testing of food only at direction of Environmental Health and Communicable Disease Division of Public Health Dept.**

Collection Guide

Bacteriology Services

DISEASE	TEST (1)	Specimen (2)	Special Handling (4)
Gastroenteritis	Culture	Stool	Enteric pathogens, such as, Salmonella, Shigella, EHEC, Stool must be submitted in Cary Blair transport media. Notify Public Health Communicable Disease Division.
		GN broth	For suspect EHEC, Shiga toxin testing maybe performed on request.
	PCR	Stool	Stool must be submitted in Cary Blair transport media. Notify Public Health Communicable Disease Division.
Gonococcal infections	Culture	**Genital and non-genital sites**	Isolates submitted for definitive identification or patients' Specimens are inoculated directly onto culture media.
	NAAT	**Genital, Urine, Rectal, Pharyngeal** specimens.	Amplified detection in cervical, urethral, urine, rectal and pharyngeal specimens for screening purposes only. Not recommended for medial legal instances. Culture recommended.
Infant Botulism	Toxin test	Stool	Contact Public Health Laboratory for collection and submission instructions prior to collection. Testing performedby the Infant Botulism Laboratory of the California Department of Public Health.
Legionnaire's **Disease**	Culture	**Isolates**	Pure culture isolates submitted to CDPH-MDL for definitive identification tion.
Leprosy (Hansen's **Disease)**	AFB **Staining** PCR	Skin Biopsy	Contact the National Hansen's Disease Program in Louisiana at: 1-800-642-2477 for assistance.
Plague	Culture	**Blood Isolates, Bubo aspirates**	Immediately contact Public Health Laboratory if a suspected case of pneumonic or bubonic plagues is suspected. Direct testing may perform if necessary or requested by Health Office for clinical and environmental samples.
	PCR	**Environmental and clinical specimens**	
Salmonellosis	Culture	Stool	Stool must be submitted in Cary Blair Transport Media. Contact Public Health Laboratory for specimen container.
		Isolate	Pure culture isolates submitted on agar slant for definitive identification, sero-grouping and serotyping.

Collection Guide

Bacteriology Services

DISEASE	TEST (1)	Specimen (2)	Special Handling (4)
Shigellosis	Culture	Stool	Stool must be submitted in Cary Blair Transport Media. Contact Public Health Laboratory for specimen container.
		Isolate	Pure culture isolates submitted on agar slant for definitive identification, including sero-grouping.

Collection Guide

Bacteriology Services

DISEASE	TEST (1)	Specimen (2)	Special Handling (4)
Streptococcal infection	Culture	**Throat swab & Isolates**	Throat cultures for Beta-hemolytic Streptococci and identification. Contact the Public Health for culture containers.
Tuberculosis	Culture	Sputum, Respiratory, CSF, Lesions, Stool	Microscopic examination and culture for acid fast bacilli (AFB). Isolation and identification of *M. tuberculosis* or other Mycobacterium species. Rapid DNA probes assays available for *M. tuberculosis* complex, *M. avium*, *M. kansasii* and *M. gordonae* fromculture isolates.
	NAAT (GeneXpert)	Raw or processed sputum and Bronch Wash specimens	Direct Amplification from AFB smear negative and positive respiratory samples* The GeneXpert MTB/RIF Assay is intended foruse with patients who have received no anti-tuberculosis therapy, or less than 3 days of therapy.
	Pyrosequencing	Sputum sediments or solid or liquid culture isolates	Test performed by the California Department of Public HealthLaboratory (MDL).
	Genotyping	**Pure culture isolates of *M. tuberculosis***	Test performed by the Michigan Department of Community HealthTuberculosis Laboratory.
	Serology	Whole Blood	QuantiFERON-TB Gold Plus (QFT-Plus)
Tularemia	Culture	**Isolates, Clinical specimens**	Direct detection from clinical material and definitive identification of isolates. Immediately contact Public Health Laboratory if tularemia is suspected.
	PCR	**Environmental and Clinical** specimens	

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Bacteriology Services

DISEASE	TEST (1)	Specimen (2)	Special Handling (4)
Vibrio infections	Culture	Stool	Stool must be submitted in Cary Blair Transport Media. Contact Public Health Laboratory for specimen container.
	PCR	Stool	Stool must be submitted in Cary Blair Transport Media
Whooping Cough	Culture	**NP Swabs**	Nasopharyngeal swabs (NP) submitted in Regan Lowe transport media if both culture and PCR requested. Contact Public Health Laboratory for collection kits. See Bordetella pertussis above.
	PCR	**NP Swabs**	If only PCR request, then a NP swab may be submitted in a sterile tube without media. Contact Public Health Laboratory for collection kits.
Yersinia	Culture	Stool	Stool must be submitted in Cary Blair Transport Media. Contact Public Health Laboratory for specimen container.
(See Plague)	PCR	**Environmental and clinical** specimens	

Collection Guide

Parasitology Services

DISEASE	TEST [1]	Specimen [2]	Special Handling [4]
Amebiasis	Wet **Mount** &Stained **Smear**	Stool	Stool must be submitted in Ova & Parasite preservatives – 1 bottle each of PVA and Formalin. Contact Public Health Laboratory for containers and collection directions.
Enterobiasis	**Direct** exam	**Peri-anal** paddle	Contact laboratory for collection protocols (Perianal paddle not provided).Best collected early in morning before bathing.
Giardiasis	Wet **mount &** stained s**mears** **PCR**	Stool Stool	Stool must be submitted in Ova & Parasite preservatives – 1 bottle each of PVA and Formalin. Contact Public Health Laboratory for containers and collection directions. Stool must be submitted in Cary Blair Transport Media.
Hookworm	Wet **mount &** stained **smears**	Stool	Stool must be submitted in Ova & Parasite preservatives – 1 bottle each of PVA and Formalin. Contact Public Health Laboratory for containers and collection directions.
Hydatid Disease (Echinococcosis)	Serology	Serum or **Plasma**	CDC offers limited serology. Contact Public Health Laboratory for instructions and containers.
Malaria	Direct staining	**Blood smears**	Microscopic examination of Giemsa-stained blood smears or whole bloodcollected in EDTA. Contact Public Health Laboratory for assistance.
Scabies	**Direct** exam	Skin scrapings	Direct examination of lesions scrapping for mites. Contact Public Health Laboratory or Public Health Clinic for examination.
Trichinosis	Serology	Serum	CDC provides on a limited basis, contact Public Health Laboratory forassistance.
Trichomoniasis	NAAT	**Urine**	Amplified detection in urine specimens for screening purposes only.

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Mycology Services

DISEASE	TEST [1]	Specimen [2]	Special Handling
Candidiasis	Culture	**Isolates**	Definitive identification of yeast isolates. Contact Public Health Laboratory for assistance.
Coccidioidomycosis	Culture	**Isolates or Clinical specimens**	Contact Public Health Laboratory for assistance. Testing performed at the California Department of Public Health.
Dermatophytosis	Culture	**Isolates or Clinical Samples**	Culture of clinical specimens or identification of isolates. Contact Public Health Laboratory for instructions.
Mycotic Infection	Culture	**Clinical specimens**	Isolation and identification of organisms causing fungal mycoses. Clinical specimens include sputum, body fluids, pus, tissue, or other material. Contact Public Health Laboratory for collection. assistance.
Ringworm **(See Dermatophytosis)**			

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Serology Services

DISEASE	TEST [1]	Specimen [2]	Special Handling [4]
HCV Viral Load	**PCR**	**Serum or Plasma**	Grossly Hemolyzed specimens should not be submitted. EDTA, heparin or citrate anticoagulants may be used to collect plasma specimens. Specimens should be separated from red blood cells and refrigerated within 4 hours of collection. Qualitative and Quantitative viral load test. Minimum of 2.0 ml of Plasma or Serum must be separated from RBCs within 4 hours of collection, store at 4ºC for 4 days or freeze at -70ºC.
HIV- Screening and confirmation	**EIA** **Genius**	**Serum or Plasma** **Serum or Plasma**	Specimens should be separated from red blood cells and refrigerated within 24 hours of collection. Minimum volume: 100µL Serum/Plasma. For confirmation of Serum and Plasma Specimens.
HIV Viral Load	**PCR**	**Plasma**	Collected with EDTA only. Minimum 2 ml of plasma. Specimens must be separated from red blood cells within 4 hours of collection. Plasma may be stored at 2-8°C for up to 4 days.
Measles (Rubeola)	**EIA IgG** **IgM** **PCR**	**Serum or Plasma** **Respiratory specimens,** Urine	Grossly hemolyzed, Hyperlipemic, heat inactivated, or contaminated specimens may give erroneous results. 200µLSerum/Plasma minimum. IgM testing done at CSDH-VRDL. Specimens should be separated from red blood cells and refrigerated within 24 hours of collection. Testing of at direction of the Communicable Disease Division of the San Joaquin County Public Health Dept.

Collection Guide

Serology Services

DISEASE	TEST [1]	Specimen [2]	Special Handling [4]
SARS-COV2 virus	**Serology**	**Serum or plasma (EDTA) specimens**	The specimens can be stored at 2-8°C if the test is performed within 4 days. If the test cannot be completed within 4 days, freeze the specimens at -20°C or colder.
Syphilis	**RPR** **TP-PA** **VDRL**	**Serum** **Serum** **CSF**	Non-treponemal screening test. Grossly hemolyzed, Hyperlipemic, heat inactivated, or contaminated specimens may give erroneous results. Specimens should be separated from red blood cells and refrigerated within 24 hours of collection. 150µL Serum minimum. Confirmatory assay for RPR. 50µL Serum minimum. Clear, non-hemolyzed spinal fluid required for test. Hemolyzed CSFmay give erroneous results. 150 µL CSF minimum
TB – QuantiFERON Gold-Plus	**Serology**	**Whole blood**	Whole Blood submitted in QTB In-Tube-Plus tubes (Grey, Yellow, Purple, and Green). Vacutainers provided by Public Health. Laboratory only. Specimens must be received at Public Health. Laboratory by 3 pm Monday thru Thursday, must be processed within 16 hours of collection. Contact Public Health Laboratory for collection protocol and collection kits.
West Nile Virus (WNV)	**IFA**	**Serum**	Grossly hemolyzed, Hyperlipemic, heat inactivated, or contaminated specimens may give erroneous results. Specimens should be separated from red blood cells and refrigerated within 24hours of collection. Minimum of 150 µL serum is required.

Collection Guide

VirologyServices

DISEASE	TEST [1]	Specimen [2]	Special Handling [4]
Arboviruses: WEE, SLE, WNV	Serology **(IgM, IgG)**	**Serum, CSF**	WNV serological testing is performed by the San Joaquin County Public Health laboratory. Testing for WEE & SLE is offered through the CSDH-VRDL only during mosquito season. CSF testing not available unless serum sample is positive and is also provided by CSDH-VRDL.
Arboviruses: Zika, Dengue, Chikungunya	**PCR**	**Serum, Whole** Blood, CSF	Testing requests at direction of the Communicable Disease Division of the County Public Health Dept**.** Urine and Amniotic fluid specimens are acceptable for Zika virus.
Enterovirus **(Respiratory)**	PCR	**Respiratory, CSF**	PCR for Enterovirus. Submit specimens in Viral Transport Media.
Gastroenteritis	PCR	Stool in Cary Blair	Multiplex PCR for Campylobacter, Clostridium difficile Toxin A/B, Plesiomonas shigelloides, Salmonella, Vibrio, Yersinia enterocolitica, Enteroaggregative E. coli (EAEC), Enteropathogenic E. coli, (EPEC), Enterotoxigenic E. coli, (ETEC), Shiga-like toxin-producing E. coli (STEC), Shigella/Enteroinvasive, E. coli (EIEC), Cryptosporidium, Cyclospora cayetenensis, Entamoeba histolytica, Giardia lamblia, Adenovirus F 40/41, Astrovirus, Norovirus GI/GII, Rotavirus A, and Sapovirus.
Herpes simplex	PCR	**Vesicular** lesion	Isolation and PCR from vesicular lesions, swabs collected in VTMand stored @ 4°C and submitted to laboratory within 48 hrs of collection.

Collection Guide

VirologyServices

DISEASE	TEST (1)	Specimen (2)	Special Handling (4)
Influenza	Serology	Serum	Serology offered on acute (<7 days onset) and convalescent (14 day post-acute) at CSDH-VRDL. Contact Public Health Laboratory.
	Screening PCR	**NP, Throat swabs**	Screening PCR for Influenza A and Influenza B
	Typing PCR	**NP, Throat swabs**	Influenza A subtyping PCR
Measles	PCR	**Throat, Nasal or NP swab** **Urine specimen**	Testing at direction of the County CommunicableDisease Division of Public Health Dept.
Mpox **(Non-Variola Orthopox)**	PCR	**Lesion swab x2**	Call for testing 209-468-3460
Mumps	PCR	**Buccal/Oral swab** **Urine specimen**	Testing at direction of the County CommunicableDisease Division of Public Health Dept.
Norovirus	PCR		PCR for Norovirus on outbreaks only. Testing of at direction of the CommunicableDisease Division of Public Health Dept.

Collection Guide

VirologyServices

DISEASE	TEST [1]	Specimen [2]	Special Handling [4]
Rash illness	Serology	Serum	Measles (Rubeola Virus) IgG ELISA test is intended for immunity screening and for diagnostic testing.
	PCR	Vesicle scrapping .	Identify vaccine related illnesses, such as Vaccinia. Offered for varicella zoster virus. Immediately contact Public Health Laboratory if Smallpox suspected.
	PCR	NP swab, urine	Measles and/or other rash illness PCR upon referral from Public Health Communicable disease.
Respiratory Panel	**PCR**	**NP swab**	Use Viral Transport Media. Multiplex PCR for Adenovirus, Coronavirus 229E, Coronavirus HKU1, Coronavirus NL63, Coronavirus OC43, SARS-Cov-2, Human Metapneumovirus, Human Rhinovirus/Enterovirus, Influenza A,Influenza B, Parainfluenza Virus 1, Parainfluenza Virus 2, Parainfluenza Virus 3, Parainfluenza Virus 4, Respiratory Syncytial Virus, Bordetella parapertussis, Bordetella pertussis, Chlamydia pneumoniae, and Mycoplasma pneumoniae.
SARS-COV2 virus	**PCR**	**NP swab, OP swab, Nasal Swab in VTM**	Store COVID specimens at 2-8°C for up to 72 hours after collection. If a delay in testing or shipping is expected, store specimens at -70°C or below.

Collection Guide

VirologyServices

DISEASE	TEST (1)	Specimen (2)	Special Handling (4)
Varicella zoster virus(VZV)	PCR	Lesion Swab	Use Viral Transport Media
Viral hemorrhagic fevers	Serology	Serum	CDPH-VRDL offers specialized testing on a case-by-case basis. Contact Public Health Laboratory for guidance. Case history form must accompany request that includes travel information.

(1) DFA = Direct Fluorescent Antibody test
EIA = Enzyme immunoassay
IFA = Indirect Fluorescent Antibody Test
NAAT = Nucleic acid amplification test
Non-Treponemal Tests = RPR Card Test; VDRL Slide Test
PCR = Polymerase Chain Reaction
RPR = Rapid Plasma Reagin Test
TP-PA = Treponema pallidum Particle Agglutination test
Treponemal Tests = FTA-ABS Test; TP-PA Test
VDRL = Venereal Disease Research Lab, test for Syphilis

(2) Serum, plasma or whole blood, or CSF (Cerebral spinal fluid), Eye = Conjunctival swab, NP = Nasopharyngeal swab

(3) CI = Culture for Identification, Isolate submitted for definitive identification

(4) Description of collection tubes and kits are in “Specimen Container Guide” section of this Service Manual for more information.

Information on Viral Disease and Agents

A.I.D.S (HIV) Virus Antibody Tests

The routine antigen/antibody test is an EIA test which is repeated in duplicate if the initial test is reactive. All reactive serum specimens also have a confirmatory test performed. HIV viral load testing is also available for the confirmation of early disease where the antigen portion of the HIV screening test was positive.

Arbovirus tests

Serological tests for West Nile Virus (WNV), Western equine encephalomyelitis (WEE) and St. Louis encephalitis (SLE) are performed for cases of encephalitis or aseptic meningitis with onset of illness from May through October. During November through April, human diseases due to these mosquito-borne viruses are not known to occur in California. Dengue, California encephalitis (CEV), Eastern equine (EEE) and Japanese B encephalitis are not endemic in California. Serologic tests are performed only if exposure history indicates exposure in known endemic areas. Contact Public Health Laboratory for information of specimen collection and submission.

Cerebrospinal Fluid Antibodies

CSF specimens can be tested for antibody, for virus isolation or both depending on a number of factors such as agents suspected, onset date relative to collection date and availability of test. CSF specimens taken within a few days of the date of onset are usually of more value for virus isolation or direct antigen detection by PCR. This is especially true when there is a corresponding blood specimen that can be tested for antibodies. CSF specimens that are contaminated with blood are not satisfactory for antibody testing; virus isolation may be attempted if possible. If no antibody is detected in the serum sample, the CSF specimen will not be tested. If antibody is detected in the blood specimen, then the CSF specimen may be tested for antibody. In either case, testing of CSF for antibodies is usually of no diagnostic value if serum antibody levels are low or absent. Since CSF may also be tested for virus isolation, ship CSF on ice.

Chlamydia Infections

The chlamydiae of importance in human disease are of 3 species. *Chlamydia psittaci,* which may cause psittacosis in humans, has a reservoir or natural cycle in pigeons, turkeys and other birds; *Chlamydia trachomatis* (various serotypes) and *Chlamydia pneumonia* (TWAR). The spectrum of *Chlamydia trachomatis* infection includes lymphogranuloma venereum (LGV) (3 serotypes), trachoma, inclusion conjunctivitis (newborn and adult), pneumonitis of infants, non-gonococcal urethritis, cervicitis, and other sexually transmitted disease syndromes. San Joaquin County Public Health Laboratory has testing availability for *Chlamydia trachomatis* infection using Nucleic Acid amplification tests (NAAT) on **cervical, urethral, urine, rectal and pharyngeal specimens.**

Isolation of *C. trachomatis* is recommended for medical-legal reasons, such as, for testing of specimens from criminal or abuse cases or from minors. Contact PH Laboratory for collection kits and guidelines for submission of specimens.

Colorado tick fever – Testing by State Laboratory Only

Colorado tick fever is endemic in California counties of Modoc, Siskiyou, Shasta, Lassen, Plumas, Sierra, Nevada, Placer, EI Dorado, eastern Calaveras, Alpine, eastern Tuolumne, and Mono, and in eastern Oregon, Nevada, Idaho, Utah, Montana, Wyoming, and Colorado, parts of Canada and a few other western states. It is only transmitted by tick bite and is most prevalent from March to September. Unless there has been a tick bite or exposure in an endemic area, testing for the disease is not generally warranted.

Acute and convalescent bloods should be collected. If the acute specimen is submitted as a whole blood, the blood clot is tested for evidence of virus by direct immunofluorescence. The immunofluorescence test for Colorado tick fever may be negative on blood samples taken in the first few days of illness, even when virus is present, testing of convalescent blood or specimens collected later in illness is necessary. Positive results are reported as soon as positive.

Viremia (period of time virus is in the blood) has been shown to be unusually long in Colorado tick fever, up to three or four months, even though the patient is fully recovered clinically. Although this is of no apparent harm to the patient, he/she should be advised not to serve as a blood donor for at least six months after recovering from the symptoms of the disease, since transmission of the virus to the blood recipient might occur.

Coxsackievirus and Echovirus Infections

Rapid PCR methods are available upon request or in stances ofan outbreak or in cases having clinical or epidemiological significance. Contact Public Health Laboratory for specimen collection and submission.

Epstein-Barr (EBV) TESTS – Testing by State Virus Lab Only

Testing Policy - Serologic tests for Epstein-Barr virus is usually performed to help diagnose cases with infectious mononucleosis-like symptoms (fever, sore throat, lymphadenopathy, atypical lymphocytes) but where not heterophile antibody could be demonstrated. If possible, cytomegalovirus, *Toxoplasma gondii* and adenovirus should be ruled out as causative agents before EBV testing. The CDPH-VRDL offers serologic testing for EBV, the combination of VAC IgG, VCA IgM and EBNA antibodies usually provides a good indicator of when a patient was infected.

Presence of antibody to both VCA and EBNA in an acute or convalescent serum is thus indicative of past EBV infection. Presence of IgM antibody to VCA together with lack of antibody to EBNA is consistent with recent EBV infection. A rising titer of antibody to VCA between acute and convalescent sera also indicated recent EBV infection. IgG and IgM antibodies to VCA, and IgG antibody to EBNA, are occasionally present together in late acute serum specimens from patients with EBV infection. However, since VCA-IgM antibody has been shown to be stimulated occasionally in other diseases, this pattern should be interpreted with caution.

Presence of VCA-IgG antibody and absence of IgM and EBNA antibody may indicate infection within the last six months since EBNA antibody is slow to appear. However, in rare instances, EBNA antibody from a long past EBV infection may not be demonstrable.

Gastroenteritis, Viral Diarrhea

Rotavirus is the leading cause of gastroenteritis among children 3 to 15 months old. Most children have been exposed to the virus by age 2. Children with rotavirus have vomiting and watery diarrhea for 3 to 8 days, along with fever and abdominal pain. Rotavirus can also infect adults who are in close contact with infected children, but the symptoms in adults are milder. Symptoms of rotavirus infection appear 1 to 2 days after exposure. In the United States, rotavirus infections are most common from November to April. Adenovirus serotypes 40 and 41 cause gastroenteritis mainly in children younger than 2 years old. Infections occur all year round; vomiting and diarrhea appear approximately 1 week after exposure. Caliciviruses cause infection in persons of all ages.
This family of viruses is further divided into the Noroviruses (example, Norwalk virus) and the Sapoviruses (example, Sapporo virus). Noroviruses are transmitted from person to person and through contaminated water or food and are often responsible for epidemics of viral gastroenteritis. Symptoms appear with 1-3 days of exposure and include vomiting, diarrhea, and muscle aches. Astrovirus also infects primarily infants, young children, and the elderly. This virus is most active during the winter months. Vomiting and diarrhea appear within 1 to 3 days of exposure. Rapid methods are available for norovirus detection from stool.

Hepatitis C

San Joaquin County Public Health Laboratory performs testing to detect the presence of HCV RNA in blood (Hepatitis C Qualitative RNA) as well as to quantitate the amount of HCV RNA in the blood (Hepatitis C Quantitative RNA) using a nucleic acid amplification test.

Influenza Virus

PCR detection is available at the Public Health Laboratory for Influenza A and B virus as well as subtyping of Influenza A and B virus. Contact Public Health Laboratory for further information. Serologic testing of acuteand convalescent specimens is available through the state VRDL.

Mpox

Mpox is a rare disease caused by a virus from the same family as the virus that causes smallpox. Mpox symptoms are like smallpox, but milder, and Mpox is rarely fatal.

Rhinovirus

Serologic tests for rhinovirus infections are not available since over 100 distinct serotypes exist and each produces specific antibody. PCR is used for the detection of the virus from the throat and nasopharyngeal specimens.

Rickettsial Serological Tests

The IFA assay is generally considered the standard and is available through the CDPH-VRDL to test Rickettsia endemic in California - Q fever, Typhus, and Rocky Mountain spotted fever - as indicated by the clinical syndrome. Specific rapid laboratory confirmation of rickettsial disease is rarely done. Therefore, treatment decisions should be based on epidemiologic and clinical clues and should never be delayed while waiting for confirmation by laboratory results. For rickettsial agents, the value of testing two sequential sera together to show a rise in antibody level is very important to confirm acute infections because antibody titers may persist for years in individuals after the initial exposure.

Cross reactivity in common among rickettsial antigens. Paired serum specimens (acute and convalescent) in the course of the disease are the preferred specimens. Typically, these specimens should be taken at least 2-3 weeks apart. Contact Public Health Laboratory for specimen collection and other questions regarding rickettsial testing.

SARS-CoV-2

COVID-19 (coronavirus disease 2019) is a disease caused by a virus named SARS-CoV-2. It is part of the coronavirus family, which include common viruses that cause a variety of diseases from head or chest colds to more severe (but rarer) diseases like severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS). SJCPHL performs molecular detection of SARS COV2 in upper respiratory tract samples. Any other sample type notvalidated on the platform will be forwarded to the state laboratory -VRDL or CDC.

Smallpox Virus

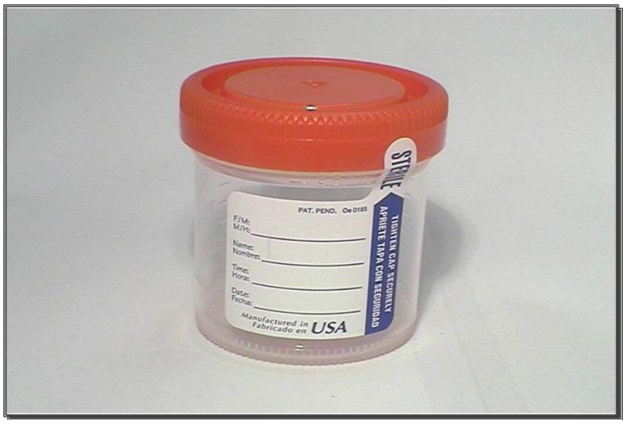
For suspected smallpox or other Orthopox virus infections contact Public Health Laboratory and Communicable Disease Division **immediately** for specimen testing guidelines. Specimens may be submitted to rule out varicella and other vesicular lesion producing viral diseases. Since Smallpox has not been seen a naturally occurring disease syndrome it is now considered as a possible agent of Bioterrorism. California State Department of Health and Center for Disease Control will handle all investigations into credible threats of Smallpox.

Viral Hemorrhagic Fevers

The etiologic agents may include Lassa fever, Marburg, Ebola, Hantavirus, yellow fever, and Dengue can all cause viral hemorrhagic fever (VHF). Sin Nombre Virus the causative agent of Hantavirus Pulmonary Syndrome (HPS) is endemic in California however the incidence of human infection is rare. Occasionally Dengue is seen from South America, Caribbean countries and may be implicated disease in patients who have traveled to endemic countries. Dengue has been seen in Texas. All other hemorrhagic fevers are seen in Africa and Asia and not on the US continent. California State Department of Health offers specialized testing on case-by-case bases; all requests must be accompanied by a case history form than includes travel to an endemic area. All suspected VHF must be reported to Public Health **immediately.**

SPECIMEN CONTAINER GUIDE

Sterile Specimen Cups



Sterile Specimen Cup:

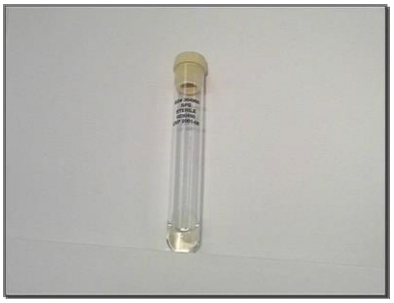
Please label specimen container before giving it to the patient.

Intended use:

- AFB sputum, AFB urine, AFB tissue, AFB Stool, AFB bronchoalveolar lavage and bronchial washings.
- Chlamydia/GC Urine specimens.
- Mumps/Measles: Urine specimens

Specimen Type	Minimum Volume	Device Volume	Transport Time	Transport Temp (°C)	Comments
Acid-Fast Bacilli (AFB)					
Sputum	5 ml	5-10 ml	Within 24 hrs, refrigerate if longer.	4°C	Specimen is stable at 4°C for 5 days, specimens received after 5 days not satisfactory.
Urine	10 ml	10-20 ml non-preserved			
Stool	≥1 g	≥ 1 g non-preserved			
Bronchoalveolar Lavage Fluids and Bronchial Washings	≥5 ml	≥ 5 ml			
Gastric Lavage Fluids	5 ml	5-10 ml	Received by lab within 4 hours of collection. Must **Neutralize pH within 4 hours of collection**.	4°C	Specimen is stable at 4°C for up to 4hours. Specimens must be received by laboratory within 4 hours of collection. Specimens received after4 hrs. will be tested but will be qualified as "Specimen not neutralized within 4 hrs may affect results."
Body Fluids (CSF, Pleural, peritoneal, and pericardial)	≥ 2 ml	≥ 2 ml	Within 24 hrs. of collection	4°C	Specimen is stable at 4°C. Ideally specimens should be received within24 hrs.
Tissues (Lymph node, skin, another biopsy material)	≥ 1 g	≥ 1 g			
Chlamydia/GC NAAT					
Urine	10 ml	10-15 ml	24 hr. at Rm Temp. or 4°C.	25°C Room Temp	Add 2 ml urine specimen to Aptima collection kit. Indicate date/time collected if not put into Aptima Urinecollection kit.
Mumps/Measles NAAT					
Urine	10 ml	20 ml	Process or store and ship at 2°-8° within 24 hours 4°C.	2°-8°C	Centrifuge 500-600 x g for 10 minutes. Resuspend pellet in 2-3 ml of viral transport media.

Blood Tube for AFB

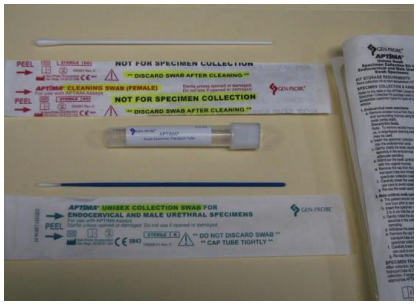


Blood Transport Tubes withSPS (Sodium polyethylene sulfonate):

Intended Use:
- AFB Blood cultures **only**

Specimen Type	Minimum Volume	Device Volume	Transport Time	Transport Temp (°C)	Comments
Acid-Fast Bacilli (AFB) Blood Specimen	≥1 ml	≥1 ml	Collect blood into SPS tube.	25°C	Indicate specimen source. Collect in SPS or heparin as an Anticoagulant: EDTAor coagulated blood isnot acceptable.

APTIMA Collection Device Overview



APTIMA Chlamydia and Gonorrhoeae collection devices:

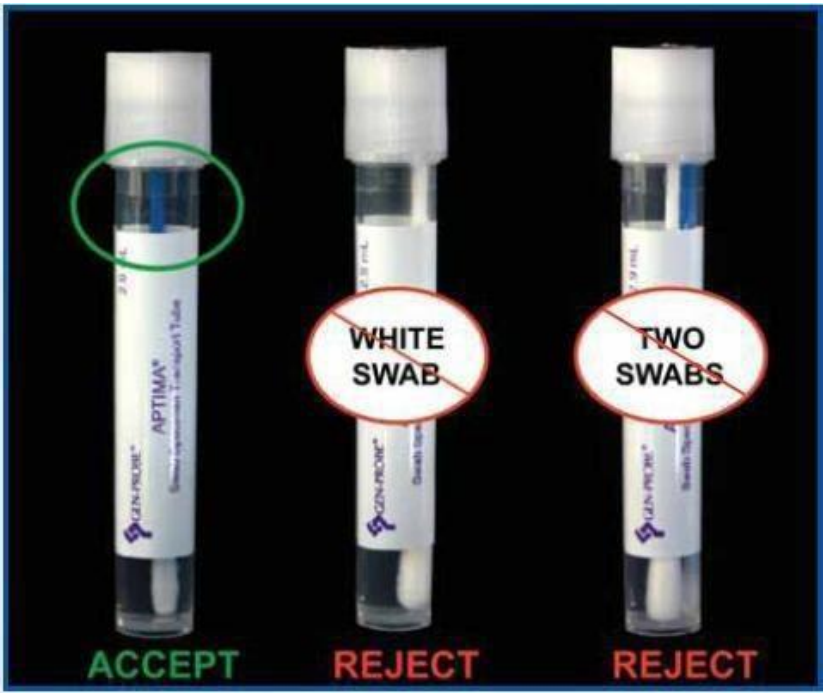
Unisex device shown on left.
Urine collection device shown on right.

Hologic Aptima Endocervical and Male Urethral Swab Collection Kit (Unisex) andAptima Urine Collection Kit.

Intended use: Chlamydia, Gonorrhea and Trichomonas NAAT

Specimen Type	Minimum Volume	Device Volume	Transport Time	Transport Temp (°C)	Comments
Chlamydia, N. gonorrhoeae Endocervical, Male Urethral, Throat and rectal specimens	1 swab	Aptima Swab – use **blue** swab only for collection.	Immediately place swab in transport tube	25°C Room Temp	Indicate specimen source.
Chlamydia, N. gonorrhoeae, Trichomonas Urine specimens	≥ 2 ml	~ 2 ml	24 hrs @ RT prior to addition to Aptima Urine collection Kit.	4°C to 25°C Room Temp	Use pipette provided with kit to add ~ 2 ml of urine to Aptima Urine Collection Kit

APTIMA Unisex Swab



BLUE SWAB = Male Urethral and Female Endocervical SpecimenCollection
WHITE SWAB = Female cleaning swab ONLY!
NOTFOR COLLECTION! DISCARD AFTER USE.

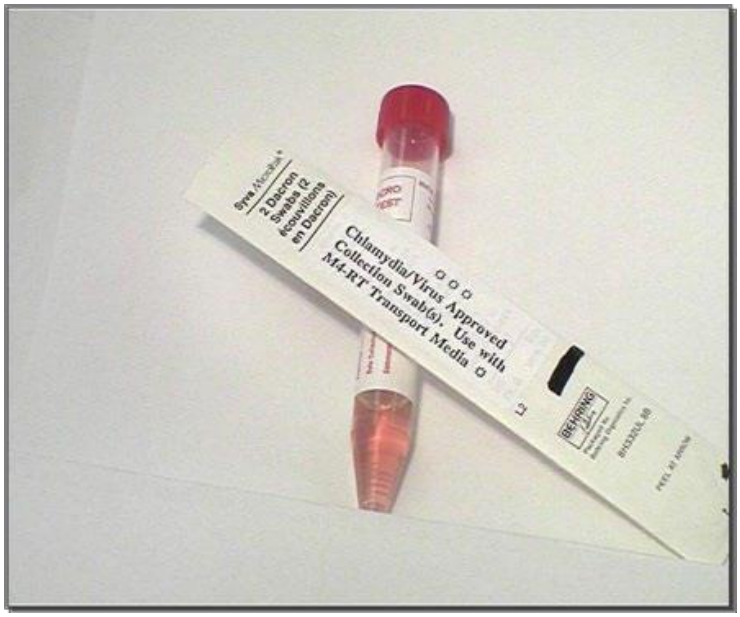
BLUE SWAB	**ACCEPT**
WHITE SWAB	**REJECT**
TWO SWABS	**REJECT**

APTIMA Urine Collection Device

Instructions:

Use the sterile transfer bulb provided in collection kit.
Transfer ~ 2.0 ml of well mixed urine to collection tube.
Urine volume should between these two lines and will be visible in the window of tube.
Insufficient or overfilled tubes will not be tested.

Viral Transport Media



M4-RT Transport Media or Equivalent:
(Dacron Swabs)

Intended use:

- Enterovirus PCR
- Herpes PCR
- Influenza PCR
- Measles PCR
- Mumps PCR
- Respiratory Panel PCR
- SARS-COv2 PCR
- VZV PCR
- Mpox PCR

Ova and Parasite Collection Device

MCC Total-Fix:

Please label specimen container before giving to the patient.

Intended use:

- Preservative and transport for Ova and Parasite examination of stool.

Specimen Type	Minimum Volume	Device Volume	Transport Time	Transport Temp (°C)	Comments
Feces Ova & Parasites (O&P) Screen and Giardia EIA	2.5 ml per bottle	Add specimen to black line on the container immediately after collection. Do not fill entire container.	Within 24-48 hrs.	25°C	**Collect a total of 2 specimens,1 specimen every other day.** If patient has persistent symptoms suggesting intestinalparasitism, or is immunodeficient, and/or has history of travel from tropical areas, it is recommended that additional specimens be collected over a 7-10-day period. This would maximize the recovery of the protozoa.

Enteric Collection Device

Cary Blain Enteric TransportMedia:

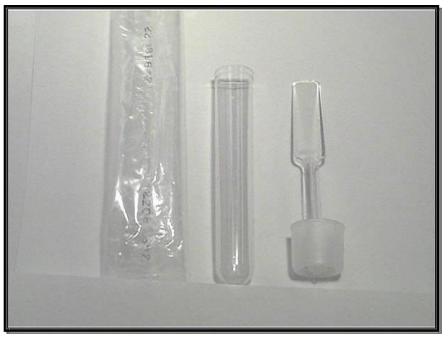
Please label specimen containerbefore giving to patient.

Intended use:

- Preservative and transport for enteric pathogens – bacteria in stool.

Specimen Type	Minimum Volume	Device Volume	Transport Time	Transport temp (°C)	Comments
Feces Routine culture	2.5 ml per vial	Add specimento **black arrow** on container. Do not fill entire container.	Add stool immediately after collection to Cary Blair transport and mix. 24-48 hrs	25°C if < 24 hrs, refrigerate if longer	For routine diagnosis of entericpathogens. Specimens received ≥ 5 days after collection will not be tested.
Feces Gastrointestinal PCR Panel	2.5 ml per vial	Add specimen to **black arrow** on container. Do not fill entire container.	Add stool immediately after collection to Cary Blair transport and mix.	At room temperature for up to 4 hours (15-25 °C) Refrigerated for up to 4 days (2-8 °C)	For molecular identification of bacteria, parasites, and viruses.

Pinworm Paddle



Pinworm Paddle:

Intended Use:

- Collection kit for detectionof pinworm – *Enterobius vermicularis*.

Specimen Type	Minimum Volume	Device Volume	Transport Time	Transport Temp (°C)	Comments
Pinworm	N/A	Pinworm paddle kit: no preservative, no minimum volume required	≤ 24 hours	25°C	Common parasites include: *Enterobius vermicularis, Taenia* spp.

Specimens are best obtained at 10 to 11 p.m. or upon waking and before a bowel movement or bath. Press sticky side to both side of the perianal region, do not insert paddle into anus. Place paddle back into transport tube and into zip lock bag. Wash hands immediately after collection. Specimen collection should continue daily for at least 3 consecutive days before patient is considered infection-free. Transport to lab as soon as possible after collection.

B. pertussis Swab

Dacron or Flocked NP swab &Sterile tube (for aspirates only):

Intended use:

- For detection of *Bordetellapertussis* from nasopharyngeal swabs (NP) by culture and/or PCR (nucleic acid amplification).
- NP aspirates submitted in sterile tube.

Specimen Type	Minimum Volume	Device Volume	Transport Time	Transport temp (°C)	Comments
Pertussis Culture	1 swab or ≥1 ml	Dacron swab in Regan-Lowe Transport media	≤ 24 hrs.	RT, protect from excessive heat or cold	Collect specimens as soon as start of symptoms and priorto antibiotic therapy, If culture requested, please contact PHL for Regan-Lowe transport media.
Pertussis by PCR	1 swab or ≥1 ml	Dacron swab or ≥1 ml fluid in Sterile Tube		4°C	

Indicate specimen source on tube. Usual sites of collection are respiratory, include Nasopharyngeal swab, NP washing and Aspirates. For NP washing, if greater than 2 hours it should be stored under refrigeration. For NP wire swab, tilt patient's head back slightly and insert the swab into one of the nostrils until it reaches the posterior nares. Leave swab in place for 15-30 seconds then withdraw and return to tube. If culture is requested place swab into Regan-Lowe transport media tube for culture and PCR. For PCR test only, place swab back in original container. Transport to laboratory within 24 hours.

QuantiFERON-TB Gold Collection Tubes

QuantiFERON-TB Gold Plus Blood Collection tubes:

Intended use:

- Indirect test for the detection of *Mycobacteria tuberculosis* infections.
- Used in conjunction with risk assessment and other medical evaluations.

Specimen Type	Minimum Volume	Device Volume	TransportTime	Transport temp (°C)	Comments
QuantiFERON tubes	1 ml whole blood per tube	QTB Vacutainers collect 1 ml	Must be received by lab within 16 hrs of collection.	25°C	Underfilling or over filling of Vacutainers or improper mixing of blood with tube coating will invalidate test.

N. gonorrhoeae Collection Swab for Culture

BactiSwab:
(Modified Stuart's Media):

Intended use:

- *Neisseria gonorrhoeae* (GC) culture collection/transport device.

Specimen Type	Minimum Volume	Device Volume	Transport Time	Transport Temp (°C)	Comments
N. gonorrhoeae	1 swab	Only Use Swab provided in kit.	Immediately push swab into gel in the tube after collection	25°C Transport to laboratory within 24 hrs.	Indicate collection site. Neisseria species are sensitive to cold conditions. Longer than 14 hrs may affect results.

Serology Collection Tube

Vacutainer Serum SeparatorTube:

Intended use:

- Collection of blood for various serology tests requiring Serum specimen.

Specimen Type	Minimum Volume	Device Volume	Transport Time	Transport Temp (°C)	Comments
Serum	2 ml	7 ml draw	Transport to laboratory within 3 days of collection	4°C RT if < 24 hrs.	If longer than 3-day transport, if possible, centrifuge specimen to separate serum from blood cells. Transport and store at 4°C.

Measles

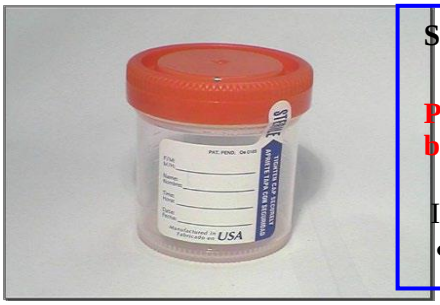
Measles Testing at San Joaquin County PHL

Health care providers within San Joaquin County must contact the San Joaquin County Public Health Department for measles virus consultation and testing approval at 209-468-3822 or 953-7506. After 5 P.M., please call 468-6000 and ask for the standby PHS nurse. Health Care providers outside San Joaquin County should contact their local Public Health Department for testing approval.

Symptomatic patients:
San Joaquin County Public Health Laboratory can perform a measles PCR test for confirming an acute case. Collection of both a respiratory swab (Throat, Nasal, or NP) and urine within 2 weeks of the rash onset improves the odds ofdetecting viral RNA.

M4-RT Transport Media or Equivalent & Dacron Swabs:

Intended use:
- Measles PCR

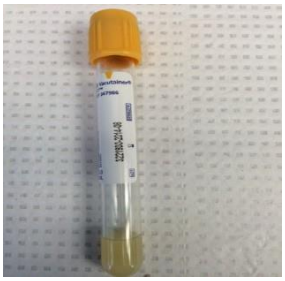


SPECIMEN BOTTLE

Please label specimen container before giving it to the patient.

Intended use:
- Urine specimen for Measles PCR.

Contacts:
IgG testing can be done on case contacts to determine prior exposure to the virus.



Vacutainer Serum Separator Tube

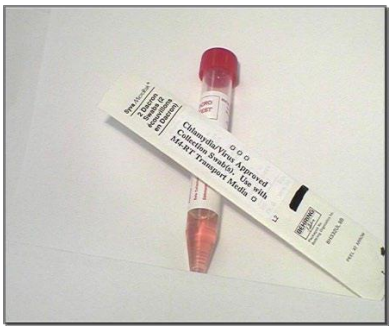
Intended use:
- Measles IgG

Mumps

Mumps Testing at San Joaquin County PHL

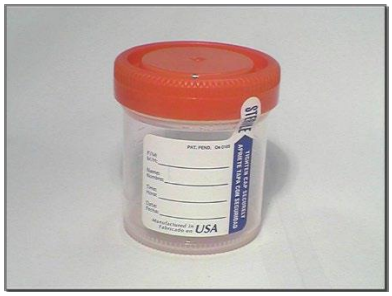
Health care providers within San Joaquin County must contact the San Joaquin County Public Health Department for measles virus consultation and testing approval at 209-468-3822 or 953-7506. After 5 P.M., please call 468-6000 and ask for the standby PHS nurse. Health Care providers outside San Joaquin County should contact their local Public Health Department for testing approval.

Symptomatic patients:
San Joaquin County Public Health Laboratory can perform a Mumps PCR test for confirming an acute case. Collect both a buccal or oral swab and urine specimen (for patients with orchitis) within 3 days of symptom onset.



M4-RT Transport Media or Equivalent & Dacron Swabs:

Intended use:
- Mumps PCR

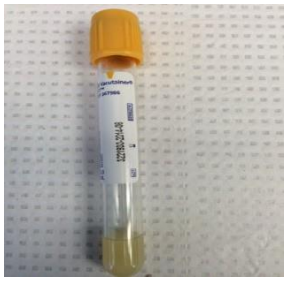


SPECIMEN BOTTLE

Please label specimen container before giving it to the patient.

Intended use:
- Urine specimen for Mumps PCR.

Contacts:
IgG and IgM testing is available at the California Department of Public Health



Vacutainer Serum SeparatorTube

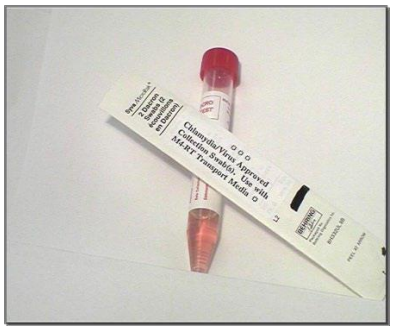
Intended use:
- Mumps IgG/IgM

Monkeypox

Mpox Testing at San Joaquin County PHL

Health care providers within San Joaquin County must contact the San Joaquin County Public Health Department for measles virus consultation and testing approval at 209-468-3822 or 953-7506. After 5 P.M., please call 468-6000 and ask for the standby PHS nurse. Health Care providers outside San Joaquin County should contact their local Public Health Department for testing approval.

San Joaquin County Public Health Laboratory can perform a PCR test for confirming Mpox. Patients must present firm, deep seated, and umbilicated skin lesions consistent with Monkeypox or other orthopoxvirus.



Viral Transport Media (Optional) & two Dacron, polyester, or nylon swabs. Two swabs required for each lesion.

Intended use:

- **Mpox (Non-Variola Orthopox) PCR**

Specimen Type	Minimum Volume	Device Volume	Transport Time	Transport Temp (°C)	Comments
Lesion	2 swabs for each lesion. Collect paired specimens from 2-3 lesions.	Vigorously swab or brush lesions	Transport to laboratory at 2-8°C. within 24-72 hours.	2-8°C for up to 72 hours.	If delay in testing or shipping, then -80°C or colder.

SARS-CoV-2

COVID Collection guidance for upper respiratory specimens for SARS-CoV-2 (COVID-19) molecular (NAAT) testing.

Swabs should be placed immediately into a sterile transport tube containing 2-3mL of either viral transport medium (VTM), Amies transport medium, or sterile saline.

COVID Specimen Type	Minimum Volume	Acceptable VTM	Transport Time	Transport Temp (^{0}C)	Comments
Upper Respiratory Tract **NP (preferred)** **OP swab in VTM/saline**	2-3 ml	Remel MicroTest M4, M4RT, M5 or M6 formulation BD Universal ViralTransport Medium,Saline	Immediately place swab in the VTM tube after collection	Transport to laboratory within 72h at 4°C	Transport specimens at -70°C or below if longer than 72 hrs.

Storage: Store COVID specimens at 2-8°C for up to 72 hours after collection. If a delay in testing or shipping is expected, store specimens at -70°C or below.

Swab sample collections

- Use only sterile Dacron®, polyester, nylon, or rayon swabs with plastic shafts.
  Wired shaft swabs are acceptable but must be trimmed using sterile scissors.
- 3D-printed swabs are not acceptable.
- Note the stem/shaft must be flexible and long enough to collect the NP sample.
- If the applicator handle requires additional trimming, it is also important to perform the trimming with a sterilepair of scissors to prevent contamination of the sample.

The **Nasopharyngeal (NP)** swab is the most preferable sample type with the current testing platforms at SJCPHL; other acceptable types include Oropharyngeal (OP) and Nasal samples.

WARNING: Media containing guanidine thiocyanate or similar chemicals, including Longhorn PrimeStore MTM, Zymo DNA/RNA Shield, as well as that found in the Spectrum Solutions Saliva Collection Device, shouldnot be used with in vitro diagnostic platforms at SJCPHL that use bleach (sodium hypochlorite) in the testing platform or during laboratory processes. Media containing guanidine thiocyanate or similar chemicals produce a potentially hazardous chemical reaction that releases cyanide gas when exposed to bleach. Many laboratories mayuse bleach in their cleaning or decontamination processes in response to laboratory spills. If the type of transport media cannot be identified in the specimen collection tubes or if it is unknown that the transport media contains guanidine thiocyanate or similar chemicals as an ingredient, handle tubes as if they contain guanidine thiocyanate or similar chemicals.

SARS-CoV-2

Rejection criteria at SJCPHL:

Alert: DO NOT use VTM material that contains Guanidinium thiocyanate orany guanidine-containing materials on the Panther instrument. Highly reactive and/or toxic compound may form if combined with sodium hypochlorite (bleach).

- Dry swab submissions are unacceptable and will be rejected.
- Any swab submitted in media containing guanidinium isothiocyanate, guanidinium thiocyanate, guanidineisothiocyanate, guanidine thiocyanate, or like component is unacceptable and will be rejected.
- Any tubes that lack labelling that includes media contents, lot, and expiration date may contain guanidine.
- thiocyanate or a similar chemical; such vials are unacceptable and will be rejected.
- Calcium alginate swabs or swabs with wooden shafts are unacceptable as they may contain substances thatinactivate some viruses and inhibit PCR testing.

UNACCEPTABLE specimens:

PrimeStore MTM

DNA/RNA Shield

Specimen rejection: Situations that could seriously compromise the validity of test results will result in specimen rejection. Some of the situations that can result in specimen rejection are:

- Unlabeled or mislabeled specimen.
- Specimen too old or in poor condition (i.e., hemolyzed, lipemic)
- Specimen submitted on grossly outdated media or transport kits.
- No specimen received with test requisition form.
- Anaerobic culture request from aerobic transport.
- Specimen leaked during transport.

Note: Irreplaceable or critical specimens that normally would be unsatisfactory for testing may be tested if the submitter accepts that results are equivocal and based on an unsatisfactory specimen. The unsatisfactory condition will be clearly stated as part of the final report.

References

California Dept. Health Microbial Disease Laboratory Test guide.

https://www.cdph.ca.gov/Programs/PSB/Pages/MicrobialDiseasesLaboratory.aspx

California Dept. Health Viral Rickettsial Disease Laboratory Test guide.

https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/VRDL_Specimen_Submittal_Forms.aspx

Photos on front cover taken at San Joaquin County Public Health Laboratory from routine specimens:

Top Left: Bacterial vaginosis gram stain.

Top Right: Microscopic image (Lactophenol cotton blue mount) of the organism *Coccidioides immitis*, the causative agent of Valley fever.

Bottom Left: Microscopic image (Ziehl Nelson stain) of a "corded" mass of cells of the organism *Mycobacterium tuberculosis*, the causative agent of tuberculosis.

Bottom: Right: Microscopic image of the larvae stage of the parasite *Strongyloides stercoralis*.

Appendices

1. Laboratory Supply Request Form
2. Bacteriology CI Form
3. Mycology CI Form
4. AFB CI Form
5. SARS-COV2/Influenza Form
6. Mpox Form
7. List of SJCPHL Tests with TAT
8. Title 17

Refer to the below to access the lab forms/ Appendices on the PHS website.

http://www.sjcphs.org/disease/public_health_Laboratory.aspx