Microbiology Primary Sample Collection Manual

Prepared By	**Department of Microbiology, Government Medical College, Surat**
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1. Amendment records

Sr. No	Page	Chapter Name/Number	Date of Amendment	Amendment made	Reasons for amendment	Signature of person authorizing amendment

2. INTRODUCTION

This manual is designed to give an overall view of the services available in the Microbiology Laboratory at Government Medical College, Surat. It is intended as a quick reference guide for all users of the Microbiology service to patients of New civil Hospital, Surat and as reference centre for PHCs and CHCs of South Gujarat.

Please note this manual is intended for use as a guide only.

1.1 Service Description

- The department offers a comprehensive range of diagnostic services in routine Bacteriology, Parasitology, Serology and Virology.
- The department also offers consultation in microbiology, infectiousdiseases and antibiotic utilization and provision of statistical and cumulative datafor infectious disease monitoring.
- The proper selection, collection and transport of specimens to the laboratory is,an essential part of the quality assurance of the microbiology laboratory. Resultsare reported rapidly and phoned if necessary to ensure timely intervention foroptimum patient care. As part of the quality assurance process within thelaboratory, turnaround times are routinely audited.
- The department is accredited by the National Accreditation Board for Laboratories (NABL).

1.2 Scope of the Service

- Diagnostic Bacteriology including Antimicrobial susceptibility testing.
- Diagnostic Microbial Serology and Virology.
- Guidance on Antimicrobial Chemotherapy.
- Guidance on infection Control and Outbreak Management

1.3TEST REQUEST

Routine Test Request

All test requests for laboratory tests should be made by a clinician using different microbiology request forms

URGENT Test Request

If the laboratory test result is required urgently for patient(s)' management, please write in red using bold letter "**URGENT** " on the request form and call the laboratory for informing us and urgent pick-up. The laboratory will notify the doctor immediately once the results are ready, followed by written reports.

Add-On Test

We discourage additional tests to be requested on sample drawn earlier due to sample degradation because of storage changes and sample integrity which can affect test results. However, if you need to add on a test after the sample has been collect by the laboratory, please call the respective diagnostic center/main laboratory to check if the sample is still available and suitable for performing the additional test request.

List of Medical Services Provided by Microbiology department

SR. NO.	SPECIFIC TESTS/ EXAMINATION
1.	Aerobic Culture and antimicrobial susceptibility for urine
2.	Aerobic Culture and antimicrobial susceptibility for pus
3.	Aerobic Culture and susceptibility for swab
4.	Aerobic Culture and antimicrobial susceptibility for body fluid
5.	Aerobic Culture and antimicrobial susceptibility for Blood
6.	Aerobic Culture and antimicrobial susceptibility for CSF
7.	Aerobic Culture and antimicrobial susceptibility for Sputum
8.	Aerobic Culture and antimicrobial susceptibility for Stool
9.	Gram stain
10.	Acid Fast Stain
11.	Special stain (Albert's stain, Toluidine blue stain,Giemsa, Fontana, Modified AFB stain)
12.	Water sample culture
13.	OT sample culture
14	Hepatitis-B Rapid test for HBs Antigen detection
15.	Hepatitis-B ELISA test for HBs Antigen detection
16.	Widal test
17.	Rapid plasma reagin test.(RPR)
18.	Anti Streptolysin O test (ASO)
19.	C Reactive Protein (CRP)
20..	Rheumatoid Factor (RA test)
21.	Ig M antibody detection for HAV by rapid test
22.	Ig M antibody detection for HEV by Rapid test
23.	Ig M antibody detection for HAV by ELISA test
24.	Ig M antibody detection for HEV by ELISA test
25.	Ig M and Ig G antibody detection for Measles
26.	Ig M antibody detection for HCV by rapid test
27.	Ig M antibody detection for HCV by ELISA test
28.	Rapid test for typhoid fever- Enterocheck
29.	Ig M antibody detection for Chikunguniya
30.	NS1 antigen for Dengue
31.	Ig M ELISA - antibody detection for Dengue
32.	Fungal culture
33.	KOH Preparation
34.	Indian ink preparation for Cryptococcus
35.	Stool for Ova- Cyst
36.	Leptospirosis -Rapid test for Ig M antibody detection
37.	Leptospirosis -ELISA test for Ig M AND Ig G antibody detection
38.	HIV test for Antibody detection
39.	CD4 Count

40.	Leptospirosis(MAT-Microscopic agglutination) for Ig M &Ig G
41.	Leptospirosis(PCR- Polymerase chain reaction)
42.	H1N1 influenza (PCR-polymerase chain reaction)
43.	Ig M and Ig G antibody detection for TORCH
44.	Ig M and Ig G antibody detection for HSV-1
45.	Ig M and Ig G antibody detection for HSV-2
46.	Dengue (PCR- Polymerase chain reaction)

3. PATIENT IDENTIFICATION AND CONSENT FORMS

Patient Identification

"Correct identification is essential for patient safety "

Each patient must be identified positively, using active communication techniques by means of two patient identifiers (patient's name/Identification number before collecting a sample for clinical testing).

In an in-patient setting, the patient's room number or physical location should NOT be used as an identifier. The patient's name and hospital ID number may be used as the two identifiers.

The patient's identity should be verified by asking the patient to identify him or herself, prior to collecting the samples.

The identifying label must be attached to the sample container(s) at the time of collection. The containers used for laboratory samples should be labelled with the identifiers in the presence of the patient.

Patient's Informed Consent

Please provide clear explanation to the patients about the laboratory tests and how they will be collected. Where necessary, such as HIV testing, please obtain written informed consent.

Consent forms, when applicable.

In HIV testing consent and recognized counselling is required, which is in examination under scope in Microbiology section. However, all examination under scope of Microbiology section requires oral consent after explanation of need for examination and need for sample collection. Every requisition form is signed by doctor. For HIV testing written consent is mandatory and pretest counselling of patient is must.

4. Instructions to clinicians for communication and selection of examinations

Please refer to the list of microbiology laboratory services provided to find whether an examination intended is available or not before sample collection. Please make sure that examination is requested and sample is collected in such a way that it reaches microbiology sample receiving centre at stipulated time.

DURING WORKING HOURS: OPD NO-10 NCH / MICROBIOLOGY DEPARTMENT, 3RD FLOOR, GOVT.MED.COLLEGE, SURAT.

PHONE NO.-0261-2231236-EXTENTION NO.-408

DURING EMERGENCY HOURS: MICROBIOLOGY EMERGENCY LABORATORY, 1ST FLOOR, OPP. TO MALE ORTHOPEDIC WARD.

SR. NO.	SPECIFIC TESTS/ EXAMINATION	Working hours
1.	Aerobic Culture and antimicrobial susceptibility for urine	Monday to Friday: 9-5 pm Saturday: 9-1 pm
2.	Aerobic Culture and antimicrobial susceptibility for pus	
3.	Aerobic Culture and susceptibility for swab	
4.	Aerobic Culture and antimicrobial susceptibility for body fluid	
5.	Aerobic Culture and antimicrobial susceptibility for Blood	
6.	Aerobic Culture and antimicrobial susceptibility for CSF	
7.	Aerobic Culture and antimicrobial susceptibility for Sputum	
8.	Aerobic Culture and antimicrobial susceptibility for Stool	
9.	Gram stain	
10.	Acid Fast Stain	
11.	Special stain (Albert's stain, Toluidine blue stain,Giemsa, Fontana, Modified AFB stain)	
12.	Water sample culture	
13.	OT sample culture	
14	Hepatitis-B Rapid test for HBs Antigen detection	
15.	Hepatitis-B ELISA test for HBs Antigen detection	
16.	Widal test	
17.	Rapid plasma reagin test.(RPR)	
18.	Anti Streptolysin O test (ASO)	
19.	C Reactive Protein (CRP)	
20..	Rheumatoid Factor (RA test)	
21.	Ig M antibody detection for HAV by rapid test	
22.	Ig M antibody detection for HEV by Rapid test	
23.	Ig M antibody detection for HAV by ELISA test	
24.	Ig M antibody detection for HEV by ELISA test	
25.	Ig M and Ig G antibody detection for Measles	
26.	Ig M antibody detection for HCV by rapid test	
27.	Ig M antibody detection for HCV by ELISA test	
28.	Rapid test for typhoid fever- Enterocheck	
29.	Ig M antibody detection for Chikunguniya	
30.	NS1 antigen for Dengue	
31.	Ig M ELISA - antibody detection for Dengue	
32.	Fungal culture	
33.	KOH Preparation	

34.	Indian ink preparation for Cryptococcus	
35.	Stool for Ova- Cyst	
36.	Leptospirosis -Rapid test for Ig M antibody detection	
37.	Leptospirosis -ELISA test for Ig M AND Ig G antibody detection	
38.	HIV test for Antibody detection	
39.	CD4 Count	
40.	Leptospirosis(MAT-Microscopic agglutination) for Ig M &Ig G	
41.	Leptospirosis(PCR- Polymerase chain reaction)	
42.	H1N1 influenza (PCR-polymerase chain reaction)	
43.	Ig M and Ig G antibody detection for TORCH	
44.	Ig M and Ig G antibody detection for HSV-1	
45.	Ig M and Ig G antibody detection for HSV-2	
46.	Dengue (PCR- Polymerase chain reaction)	

SR. NO.	**SPECIFIC TESTS/ EXAMINATION**	**Emergency hours**
1	Gram stain (Suspected gas gangrene, Diphtheria, CSF meningitis, precious body fluids)	Monday to Friday: After 5 pm Saturday: After 1 pm Sunday
2	HIV rapid test for Antibody detection	
3	Hepatitis-B Rapid test for HBs Antigen detection	
4	Leptospirosis -Rapid test for Ig M antibody detection	
5	IgM rapid test for HCV antibody detection	
6	Stool darting motility for suspected cholera cases	
7	India ink preparation in CSF sample for cryptococcal meningitis	

Note: A negative Microbiology result does not exclude thepresence of infection.

5. LABORATORY REQUEST FORM

The test request must be made in **Microbiology Request Form**

Mandatory Information Needed on All Patient Requisitions

Patient's name

Please write the patient's name clearly and legibly. Correct spelling of patient's name and provision of other relevant bio-data are essential to ensure that the sample collected and received by the laboratory come from the correct patient.

Patient's identification Number

Thisis unique identification number used as patient's identifiers.

Date and Time of Sample Collection

The exact date and time of sample collection should be indicated to enable monitoring of sample integrity. The laboratory will counter check the availability at the time of reception. This information is critical for proper evaluation of the results, especially for test results affected by diurnal differences, such as some of hormonal tests.

Nature of Sample

Identify sample source by indicating the specific body site from which the sample had been taken.

Name and Details of Ordering Doctor

Details of the requesting doctor (i.e. name, address, telephone and fax number of the organization, and e-mail address) should be included in the requesting form. The requesting doctor must sign the requesting form. This is to facilitate communication of test results, including notification of critical laboratory results, urgent test results or further discussion of the case (if needed). The use of pre-signed forms is strongly discouraged.

Clinical History, Age and Gender

This information is useful in assisting the laboratory to interpret test results, where the appropriate reference ranges can be included in the patient's laboratory reports. Please include the clinical diagnosis, suspected disease/organism, brief clinical history, name, date and duration of treatment given, previous test results with dates and previous laboratory numbers, patient's immune status (e.g. any underlying diseases, cancer chemotherapy, immunosuppressive treatment), and any other relevant patient or clinical data in the special instruction section of the requesting form. These information are useful in assisting the laboratory staff interpret the results.

Relevant clinical information for given tests

Sr. no	Specific tests/ examination performed	Required clinical information in request form along with result of previous test/ reference number of laboratory
1.	Aerobic Culture andantimicrobial Susceptibility for urine	Probable clinicaldiagnosis
2.	Aerobic Culture and antimicrobial Susceptibility for pus	Probable clinicaldiagnosis& site of collection
3.	Aerobic Culture and antimicrobial Susceptibility for swab	
4.	Aerobic Culture and antimicrobial Susceptibility for body fluid	Probable clinicaldiagnosis
5.	Aerobic Culture and antimicrobial Susceptibility for Blood	Probable clinicaldiagnosis, date and time of sample collection &address
6.	Aerobic Culture and antimicrobial Susceptibility for stool	
7.	Aerobic Culture and antimicrobial Susceptibility for Sputum	Probable clinicaldiagnosis
8.	Aerobic Culture and antimicrobial Susceptibility for CSF	Probable clinicaldiagnosis& time of collection
9.	Gram stain	Probable clinicaldiagnosis
10.	Acid fast Stain	
11.	Special stain (Albert's stain, toludine blue stain)	
12.	Water sample	Probable clinicaldiagnosis&address
13.	OT sample	Site of sample collection &adress
14.	Hepatitis-B Rapid test for HBs Antigen detection	Probable clinicaldiagnosis&Liverfunction test value, if available.
15.	Hepatitis-B ELISA test for HBs Antigen detection	Probable clinicaldiagnosis
16.	Widal test for Typhoid (Tube agglutination test)/ Rapid test for typhoid	Probable clinicaldiagnosis&address, h/o fever, clinicaldiagnosis
17.	Test for Syphilis-Rapid plasma reagin test. (latex agglutination test)	Probable clinicaldiagnosis
18.	Anti Streptolysin O test (latex agglutination card test)	
19.	C Reactive Protein(CRP)(latex agglutination card test)	
20.	Rheumatoid Factor (RA test)(latex agglutination card test)	
21.	Ig M antibody detection for HAV by rapid test	Probable clinicaldiagnosis&liverfunction test results
22.	Ig M antibody detection for HEV by rapid test	

23.	Ig M antibody detection for HAV by ELISA test	
24.	Ig M antibody detection for HEV by ELISA test	
25.	Ig M antibody detection for HCV by rapid test	Probable clinicaldiagnosis
26.	Ig M antibody detection for HCV by ELISA test	
27.	Ig M and Ig G antibody detection for TORCH	
28.	Ig M and Ig G antibody detection for HSV-1	
29.	Ig M and Ig G antibody detection for HSV-2	
30.	Ig M antibody detection for Chikunguniya	Probable clinicaldiagnosis&address
31.	Ig M antibody detection for Dengue	Probable clinicaldiagnosis&address, Platlet count, total count, duration of fever
32.	Ig M &Ig G antibody detection for Measles	Probable clinicaldiagnosis&address, age, History of fever, rashes, vaccination
33.	FUNGAL culture	Probable clinicaldiagnosis
34.	KOH Preparation	Probable clinicaldiagnosis& site of collection
35.	Indian ink preparation of CSF for Cryptococci	Probable clinicaldiagnosis&address
36.	Stool for ova- cyst	
37.	Leptospirosis -Rapid test for Ig M antibody detection	Probable clinicaldiagnosis,days of illness, fever, clinician's mobile number
38.	Leptospirosis -ELISA test for Ig M and Ig G antibody detection	
39.	HIV rapid test for Antibody detection	
40.	HIV ELISA test for Antibody detection	
41.	CD 4 count	
42.	Leptospirosis(MAT-Microscopic agglutination)	Probable clinicaldiagnosis ,days of illness, fever, clinician's mobile number
43.	Leptospirosis(PCR- Polymerase chain reaction)	
44.	NS1 antigen for Dengue	
45.	H1N1 influenza	Probable clinicaldiagnosis, category of patient, x-ray findings, days of illness, fever, clinician's mobile number

Requisition forms

NCHSLS Microbiology Examination Request From

Name			Dept/Unit /Ward /Reg. ID/OPD No	
Age				
Sex				

Type Sample (make circle)	Pus/Swab/ Sputum/Urine/Pleural fluid/ asctic fluid/ CSF/ Drain-for culture and Plain ***I*** EDT A Blood, Scraping material for KOH and Fungal culture, Stool for ova cyst, OT swab Others	
Complete address		Provisional Diagnosis

Clinical history:_____

Investigation:- Hb:_____ TC:_____

PLT:_____LFT:_____

RFT:_____ Results of previous test if any:-

Examination requested with initials of requester

Sr.No	Tick"	Investigation	Sr.No	Tick"	Investigation
1		Microscopy Gram/ AFB stain	13		Chikungunya
2		Culture & sensitivity	14		Fungal culture
3		HBsAg	15		KOH
4		HAV	16		TORCH
5		HEV	17		HSV-1
6		Measles	18		HSV-2
7		HCV	19		Special stain
8		Widal test/ Rapid test	20		India ink preparation
9		ASO	21		Stool ova cyst
10		CRP	22		others
11		RA	23		

Remarks of Sender:(if any)

Date and time of sample collectio	Initial of person collecting Sample must be	Date and time of sample receipt with initials laboratory technician and Sample	

Box below is kept blank for any special notes:

Critical Report to be informed to contact phone No/ inter com No._____

FOR LABORATORY USE:

Ensure all Entries in this Form are completed before dispatch of Sample to Laboratory

Sample receipt time: _____am/pm. Date: _____ Lab.I.D. No: _____ Quality of Primary sample: Good/Poor (if Poor_____)

REMARKS: ( ) Accepted / ( ) Rejected. Send proper & fresh sample with new request form.

Name & signature of the Person who received the Sample:

INSTRUCTIONS TO CLINICIANS: General Instructions:

1. Select the appropriate container for the prescribed investigation. Specimen container must be properly labeled with Patient's Name, Ward/Unit, Date & Time. This Request Form should accompany each sample & all entries should be complete & legible. Incomplete form may lead to rejection of sample.

2.Results of the laboratory investigations are dependent upon the quality of the sample. It should be transported to the laboratory withproperly filled request form, immediately after the collection and maintain cold chain whenever required.

3.Remarks of the sender regarding clinical information, previous reports & drug therapy are helpful to laboratory. Any additionalrequirements can be entered in remarks for sender.

4.When patient is in Intensive care/critical /infectious condition or any urgency, then put the remark of patient status in the request form.

5.International guidelines of ISO15189:2007 as per NABL India are now being implemented in this Laboratory.

6.Any specimen should not be falsely labeled urgent. Emergency laboratory is working after Office hours in routine days & round the clock on Sunday & holidays.

7.Any query from the sender is directed to the Laboratory In -charge.

Instructions for specific tests:

For Serological tests

1. Collect 3 - 5 ml blood in PLAIN test tube / vacutainer.

2If there is delay in transportation, refrigerate at 2 - 8^0 C.

3Expected time required by the laboratory to process specimen & give test report is

Culture & sensitivity

1.CONTAINER: Container must be STERILE for culture & sensitivity testing.

 Dry, clean. leak proof container with lid.

 Wide mouth container to be used for urine, stool & sputum with lid.

2. URINE: Clean catch midstream sample, preferably early morning

3.SPUTUM:

After mouthwash with drinking water

 After deep breathing, cough out sputum

Taking due care that not to mix mucopurulent part of sputum with saliva.

4.SWAB: Collect from active area of wound / inflammation.

5.Expected time required by the laboratory to process specimen & give test report is: For Negative: after one overnight incubation. Forpositive: after 2 overnight incubations.

6.BLOOD FOR CULTURE : During collection of blood, do not touch the site after venupuncture site after the skin preparation. Aseptically withdraw adequate amount of blood; 5-10 for adult; 2-5ml for pediatric & 0.5 -2ml for neonates. Remove the protective cover from top of culture bottle. Wipe the top of bottle by using 70% ethanol and transfer to blood culture bottle. Preferably collect blood at the time of rising of fever. Preferably collect blood before giving Antimicrobial drug.

7.Expected time required by the laboratory to process specimen & give test report for Blood & Fungal culture Up to 7 days of sample receipt.

DEPARTMENT OF MICROBIOLOGY

GOVERNMENT MEDICAL COLLEGE, & NEW CIVIL HOSPITAL, SURAT.

Performa for a case of Dengue (Ig M ELISA/NS1 Antigen) / Chikungunya

1 Full Name of Patient:

2 Residential Address of Patient:

(A) House No.

(B) Village

(C)Taluka

(D) District

3 Hospital Address:-

(A) Patient Registration:- (B) Ward No. (C) Bed No.

4 Age 5 Sex: Male/ Female

6 Date of Onset of First Symptoms:

7 Date of Sample Collection:

8 Clinical Findings:

(1) Fever Days (2) Joint Pain Days (3) Bodyache Days

(4) Headache Days (5) Rash if Yes Days

9 Haemorrhagic Manifestation Yes/ No (If Yes, Describe)

10 Platelet count

11 Test carried out/ Result

12 Treatment given.

13 Complications, If any:

14 Signature of Clinician:

Name

Address:

Phone Number:

Fax:

Please attach additional sheet if required.

NEW CIVIL HOSPITAL SURAT LABORATORY SERVICES
MAJURA GATE, SURAT, PHONE NO .0261-2244456
DEPARTMENT OF MICROBIOLOGY,

INTEGRATED COUNSELLING & TESTING CENTRE (ICTC)

LABORATORY REQUEST FORM FOR HIV TESTING

(TO BE FILLED BY THE REQUESTING DOCTOR AFTER PRETEST COUNSELLING)

Registration NO. / Patient ID NO.: _____ AGE: _____ GENDRE: MALE/FEMALE

Patients Name (Optional): _____ WARD/UNIT: _____

Address:_____

Requesting Doctor with Name/Unit: _____ Contact No/Extension no. _____

Brief Clinical Information & Treatment given:_____

Reason of Urgency: _____

I am informed about HIV testing & have been given counseling.

_____**Signature Of the Patient**

Type of Primary Sample: Blood in Plain Vacuttee / Serum.

Date: _____ Time of sample collection: _____ am / pm

Remarks of Sender (if any): _____

Signature of the Requesting Doctor: _____

==========

FOR LABORATORY USE ONLY:

(Ensure All Entries in This Form Are Completed Before Dispatch of Sample to Laboratory)

SAMPLE RECIEPT Date: _____ TIME: _____am/pm. Lab ID no: _____

Quality of Primary Sample: Good/Poor (If Poor: _____)

REMARKS: ( ) ACCEPTED / ( ) REJECTED. Send Proper & Fresh Sample With New Request Form.

Name & Signature of the Person Who Received the Sample: _____

GENERAL INSTRUCTIONS:

1. Select the appropriate container for the prescribed investigation. Specimen container must be properly labeled with Patient's Name, Ward/Unit, and Date & Time. This request Form should accompany each sample & all entries should be complete & legible. Incomplete Form may lead to rejection of sample.
2. Results of the laboratory investigations are dependent upon the quality of the sample. It should be transported to the laboratory with properly filled request form, immediately after the collection.
3. Remarks of the sender regarding clinical information, previous reports & drug therapy are helpful to laboratory. Any additional requirements can be entered in remarks for sender.
4. When patient is in Intensive care/infectious condition or any urgency, then put the remark of patient status in the request form.
5. International guidelines of ISO 15 189:2012 as per NABL India are now being implemented in this laboratory.
6. Any specimen should not be falsely labeled urgent. Emergency laboratory is working after Office hours in routine days & round the clock on Sunday.
7. Any query from the sender is directed to the Laboratory In –charge.
8. Select the appropriate container for the prescribed investigation. Specimen container must be properly labeled with Patient's Name, Ward/Unit, and Date & Time. This request Form should accompany each sample & all entries should be complete & legible. Incomplete Form may lead to rejection of sample.
9. Results of the laboratory investigations are dependent upon the quality of the sample. It should be transported to the laboratory with properly filled request form, immediately after the collection.
10. Remarks of the sender regarding clinical information, previous reports & drug therapy are helpful to laboratory. Any additional requirements can be entered in remarks for sender.
11. When patient is in Intensive care/infectious condition or any urgency, then put the remark of patient status in the request form.
12. International guidelines of ISO 15 189:2012 as per NABL India are now being implemented in this laboratory.
13. Any specimen should not be falsely labeled urgent. Emergency laboratory is working after Office hours in routine days & round the clock on Sunday.
14. Any query from the sender is directed to the Laboratory In –charge.

Specific Instructions for the Test:

1. Collect 3-5 ml blood in **PLAIN VACUTTEE**.
2. If there is delay in transportation, refrigerate at 2-8^0 C.

NEW CIVIL HOSPITAL SURAT LABORATORY SERVICES
MAJURA GATE, SURAT, PHONE NO .0261-2244456
DEPARTMENT OF MICROBIOLOGY,
LEPTOSPIROSIS LABORATORY

Patient's Name:			
Father's Name /Mother's name			
Age/Gender:			
Address:		**Taluka**	**District**
Village/area			
Hospital Name :			
Ward-Unit / Registration No:			
1ST Sample / 2nd Sample:			
Date of Sample collection:			

Symptoms	
Date of onset of fever	
Course of fever :	**continuous/intermittent/remittent**
Type of fever:	**Low grade/high grade**
Condition of patient:	**Stable/critical**

Whether visited any other area during last one month:	**YES/NO**
Any other person ill with fever in the family	
Occupation	**Farmer/labour/other**

Chills	**YES**	**NO**	**Cough**	**YES**	**NO**
Vomiting	**YES**	**NO**	**Headache**	**YES**	**NO**
Conjunctival suffusion	**YES**	**NO**	**Jaundice**	**YES**	**NO**
Epitasis	**YES**	**NO**	**Heamoptysis**	**YES**	**NO**
Myalgia &arthralgia	**YES**	**NO**	**Sever joint pain**	**YES**	**NO**
Tenderness of calf muscles	**YES**	**NO**	**Rash/petechiae**	**YES**	**NO**
Photophobia	**YES**	**NO**	**Renal failure**	**YES**	**NO**
Fatigue	**YES**	**NO**	**Weakness**	**YES**	**NO**
Drowsiness	**YES**	**NO**	**Abdominal pain**	**YES**	**NO**
Retro orbital pain	**YES**	**NO**	**Altered sensorium**	**YES**	**NO**
Rigidity of neck	**YES**	**NO**	**OTHERS**		

Liver Function Test: Renal Function Test:

1. S.Bilirubin		**2.SGPT**		**1.BLOOD UREA**	
Direct		**3.SGOT**		**2.CREATININE**	
Indirect		**4.ALP**		**Other test:**	
Total					

TESTS FOR LEPTOSPIROSIS (√ Tick the required investigation)

1.Rapid	**2.ELISA**	**3.MAT**
4.PCR	**5.Other tests**	

Name of requesting doctor:	
Contact number:	
Email ID:	

(SIGN /MEDICAL OFFICER)

NEW CIVIL HOSPITAL SURAT LABORATORY SERVICES
MAJURA GATE, SURAT, PHONE NO .0261-2244456
DEPARTMENT OF MICROBIOLOGY,
CLINICAL & EPIDEMIOLOGICAL DATA FOR H1N1 INFLUENZA

Category: " "

Patient's Name:			
Age/Gender:			
Address: **Village/area**		**District**	**State**
Patient's Tel No:			
Hospital Name :			
Ward-Unit / Registration No:			
Date of onset of illness:			

Clinical signs & Symptoms:

Fever >38°C	**YES**	**NO**
Oral > 38.5°C	**YES**	**NO**
Cough	**YES**	**NO**
Sore throat	**YES**	**NO**
Nasal catarrah	**YES**	**NO**
Shortness of breath difficulty in breathing	**YES**	**NO**

Exposure History:

Close contract with a person (within 7 days) who is confirmed case of influenza A (H1N1)	**YES**	**NO**
Travel to community (within 7 days) where one or more confirmed cases of influenza A (H1N1) have been reported	**YES**	**NO**
Resides in a community where there are one or more confirmed influenza cases	**YES**	**NO**
Country visit	**YES**	**NO**
Date of visit		
Name Country visited		

Sample Collection:

Date of samples collected			
Sample collected	**Throat swab**	**Nasopharyngeal swab**	**Other**
No of samples collected			

Treatment History:

Treatment taken:	**YES**	**NO**
If yes what & when		

Investigations:

X- Ray findings:

Name of requesting doctor:	
Contact number:	
Hospital Email ID:	

(SIGN /MEDICAL OFFICER)

NEW CIVIL HOSPITAL SURAT LABORATORY SERVICES
MAJURA GATE, SURAT, PHONE NO .0261-2244456
DEPARTMENT OF MICROBIOLOGY,

COMMON COLLECTION CENTRE.

(Telephone No. 2244456-59 Ext. 348)

NAME: AGE: Yrs. SEX.M/F.

Reg.No. Address:

MICROBIOLOGY(Serology)

INVESTIGATION	METHOD	RESULT
HBsAg.	ELISA	
	Rapid	
R.P.R./V.D.R.L.	Agglutination	
CRP	Latex agglutination	
ASO	Latex agglutination	
RA	Latex agglutination	
HCV	ELISA	
	Rapid	
WIDAL	Slide agglutination	S.typhi-H
		S.typhi-O
		S.Paratyphi-AH
		S.Paratyphi-BH
	Tube agglutination	S.typhi-H
		S.typhi-O
		S.Paratyphi-AH
		S.Paratyphi-BH
Other		

NEW CIVIL HOSPITAL SURAT LABORATORY SERVICES
MAJURA GATE, SURAT, PHONE NO .0261-2244456
DEPARTMENT OF MICROBIOLOGY,

EMERGENCY LABORATORY

Patient's name:_____Age:_____Gender:_____

Registration No:_____WARD/OPD:_____

Primary sample collection Type:_____(blood, CSF, Tissue, Throat swab, others (specify)

Date of primary sample collection:_____Time:_____(am/pm)

Quality of primary sample: Good/ poor (If poor-_____

Requesting Doctor with Name/Unit:_____

Date of Sample receipt in Lab:_____Lab I.D. No:_____

Date of Test Report:_____Time:_____am/pm

Investigation	**Test method**	**Test result**
staining	Gram's stain	
	AFB stain	
	Albert's stain	
Stool-Darting motility	Microscopy	
Anti HIV antibody	Rapid test	
Anti HCV antibody	Rapid test	
HBsAg	Rapid test	
Anti-Leptospirosis antibody	Rapid test	

Comments/Opinion:_____

Signature of Authority

END OF REPORT

6) Type and amount of sample to be collected

Sr No.	Specific tests examination	Material for examination	Container for sample	Type	Optimum Quantity of sample
1.	Aerobic Culture and antimicrobial sensitivity for urine	Urine	Sterile Universal container	Urine	10-20 ml
2.	Aerobic Culture and antimicrobial sensitivity for pus	Pus	Sterile Universal container/ Sterile swab	Pus	About 2- 5ml of pus /swab/ in syringe
3.	Aerobic Culture and antimicrobial sensitivity for swab	Swab contain material taken from any site of the body and wound	Sterile cotton swabs in plastic or glass test tube	Pus/any Discharge/ High vaginal swab, or swab taken from any body lesion	Material to be immersed in the swab
4.	Aerobic Culture and antimicrobial sensitivity for body Fluid	body fluid	Sterile Universal container	Ascitic fluid, Pleural fluid, CSF, pericardial fluid, synovial fluid	Body fluids : 2- 5ml
5.	Aerobic Culture andantimicrobial susceptibility for Blood	Blood	Blood culture bottle for adult & Pediatric	Whole Blood	For adult :10-20 ml For pediatrics: 2-5ml For infant: 0.5-2 ml blood in blood culture bottle
6.	Aerobic Culture and antimicrobial susceptibility for CSF	CSF	Sterile Universal container	CSF	Up to 3 ml
7.	Aerobic Culture and antimicrobial sensitivity for Sputum	Sputum	Sterile Universal container	Sputum	5-10 ml

8.	Aerobic Culture and antimicrobial sensitivity for Stool	Stool	Sterile Universal container	Stool	2-5gm
9.	Gram's stain	Any Sample	Sterile universal container *Iswab /* smear on glass slide	Any	5-10 ml, For CSF 2-3 ml
10.	Acid fast Stain	Any Sample	Sterile universal container /swab *I* smear on glass slide	Sputum, any body fluid, Urine:early morning fresh sample is collected.	5-10 ml, For CSF 2-3 ml
11.	Special stain (Albert's stain, Toludine blue stain)	Throat swab/sputum sample/pus/ bronchoalveolar lavage	Sterile universal container or sterile disposable swab stick	Throat Swab/sputum sample/pus sample/broncho alveolar lavage	Throat swab: Sputum & Pus: 2-5 ml
12.	Water sample	Water	Sterile glass bottle and with cold chain maintenance	Water	150-200ml
13.	OT sample	Swab from different sites in the OT	Sterile swab in tube	Swab/Petri dish	Sufficient quantity
14.	Hepatitis-B Rapid test for HBs Antigen detection	Serum	Plain Tube	Whole Blood	2-5ml
15.	Hepatitis-B ELISA test for HbS Antigen Detection	Serum	Plain Tube	Whole Blood	2-5ml
16.	Widal test for typhoid	Serum	Plain Tube	Whole Blood	2-5ml
17.	Test for Syphilis-Rapid plasma regain Test(Slide flocculation test)	Serum	Plain Tube	Whole Blood	2-5ml

18.	Anti StreptolycinO (latex agglutination	Serum	Plain Tube	Whole Blood	2-5ml
19	C Reactive Protein(CRP) (latex agglutination test)	Serum	Plain Tube	Whole Blood	2-5ml
20.	Rheumatoid Factor (RA test) (latex agglutination test)	Serum	Plain Tube	Whole Blood	2-5ml
21.	Ig M antibody detection for HAV by rapid test	Serum	Plain Tube	Whole Blood	2-5ml
22.	Ig M antibody detection for HEV by rapid test	Serum	Plain Tube	Whole Blood	2-5ml
23.	Ig M antibody detection for HAV by ELISA test	Serum	Plain Tube	Whole Blood	2-5ml
24.	Ig M antibody detection for HEV by ELISA test	Serum	Plain Tube	Whole Blood	2-5ml
25.	Ig M and Ig G antibody detection for Measles	Serum	Plain Tube	Whole Blood	2-5ml
26.	Ig M antibody detection for HCV by rapid test	Serum	Plain Tube	Whole Blood	2-5ml
27.	Ig M antibody detection for HCV by ELISA tets	Serum	Plain Tube	Whole Blood	2-5ml
28.	Ig M and Ig G antibody detection for TORCH	Serum	Plain Tube	Whole Blood	2-5ml
29.	Ig G antibody detection for ANA/ ANA profile	Serum	Plain Tube	Whole . Blood	2-5ml

30.	Ig M and Ig G antibody detection for HSV-1	Serum	Plain Tube	Whole . Blood	2-5ml
31.	Ig M and Ig G antibody detection for HSV-2	Serum	Plain Tube	Whole . Blood	2-5ml
32.	Ig M antibody detection for Chikunguniya	Serum	Plain Tube	Whole . Blood	2-5ml
33.	Ig M / NS1 antibody detection for Dengue	Serum	Plain Tube	Whole . Blood	2-5ml
34.	FUNGAL culture	Scrapping material from lesion of any site	Strile container	Scrapping material from lesion	Strile container, wrape in strile clean paper
35.	KOH Preparation	Scrapping material from lesion,sputum, nail, hair, skin, biopsy material, Sputum, any body fluid	Warp in dry clean paper or put the material in between two silde which is remain together tightly with wrapper	Scrapping material from lesion,sputum, nail, hair, skin, biopsy material, Sputum, any body fluid	-
36	Indian Ink preparation for Cryptococci	CSF	sterile universal container	CSF	2-5 ml
37.	Stool for Ova- cyst	stool	sterile universal container	stool	2 gm
38.	Leptospirosis - Rapid test for Ig M antibody detection	Serum	Plain Tube	Whole. Blood	2-5ml
39.	Leptospirosis – ELISA test for Ig M and Ig G antibody detection	Serum	Plain Tube	Whole. Blood	2-5ml
40.	HIV ELISA test for Antibody detection	Serum	Plain Tube	Whole. Blood	2-5ml
41.	HIV rapid test for Antibody detection	Serum	Plain Tube	Whole. Blood	2-5ml
42.	CD 4 count	Serum	EDTA Tube	Whole. Blood	2-5ml

43.	Leptospirosis (Microscopic agglutination test)	Serum	Plain Tube	Whole . Blood	2-5ml
44.	Leptospirosis(PCR-Polymerase chain reaction)	Serum/EDTA	Plain Tube	Whole . Blood	2-5ml
45	H1N1 influenza (PCR-polymerase chain reaction)	Nasopharyngeal swab & throat swab	Viral transport media	secretions	---
46	HIV -1 Viral load test	EDTA	EDTA Tube	Whole . Blood	2-5ml

7. Specimen containers

1. **Universal sterile containers**

2. **Blood culture bottles**

3. Transport swabs

4. Blood collection vacutainer

5. Charcoal swabs

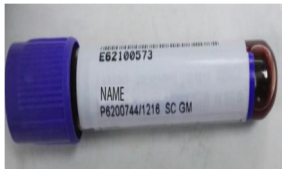
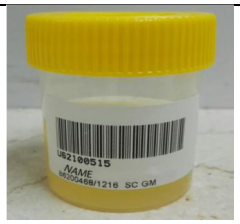
6. Viral swabs

Labelling of primary samples

Label all sample containers prior to collection at the patient's side. Together, we can instil the right culture to ensure the right specimen is collected from the right patient and the right order of test being filled in the request form.
The following information is mandatory

- Patient Name
- Patient ID
- Department + Unit + Location
- Date and time of Sample collection
- Sample ID given by laboratory (as soon as it is generated)

Please stick the label lengthwise.
Unlabelled samples will be rejected.

Correct way of label	Incorrect way of label
	
	

8. SAMPLE COLLECTION

Please note that the sample collection process is dependent on test required and the accuracy and timeliness of test results begin with a successful sample collection.

1. Determine the **type of tests to be ordered and the accompanying instructions** for sample collection (e.g. fasting, non-fasting, pre- or post-medication, pre- or post-dialysis). Determine the time of last medication/meal (if required).

2. Identify the **correct containers/tube types** to be used with the correct additives (if required). Samples must be collected into appropriate containers supplied by or approved by microbiology department.

3. Please **check containers** for any defects **before use**.

4. Aseptic techniques must be employed during sample collection to prevent the introduction of micro-organisms into the patient's anatomical space, and to prevent the sample from being contaminated.

5. Collect sufficient amount of sample to enable the test(s) to be carried out, especially when multiple tests are ordered. In the case the amount of sample is insufficient please state which tests should be done in order of priority.

6. Please check the containers again after sample collection for any leakage and tighten the lids of containers properly to prevent leakage of samples during handling and transportation. A leaked sample container can pose infection hazards to the transportation and laboratory staff, besides risking the sample to be insufficient.

7. Please ensure that the outer surfaces of the containers are not contaminated by the patients' samples.

8. Please place the sample container in the plastic bag provided. Please in insert the Request Form in the pocket on the side of the bag and not in the sample compartment.

9. All samples should be regarded as potentially infectious and the standard universal precaution guidelines should be adhered by all healthcare workers during sample collection and handling.

Unacceptable Samples (Rejection Criteria)

The following criteria will be used to consider a sample is unacceptable and will be rejected. The Laboratory staff will inform the ordering clinician will be notified.

☐ incompletely filled or no sample identify on the request form

☐ Sample without accompanying request form

☐ Sample without any label

☐ Discrepancy in patient's identity between the request form and sample label

☐ Inappropriate test sample, e.g. wrong use of container/preservative

☐ Leaking specimen container

☐ Grossly haemolysed sample

☐ Sample received with intact needles

☐ Quantity of sample not sufficient for testing

☐Lipemic sample

PACKAGING THE SAMPLES

Primary Package

Clinical/biological samples should be placed in a sealed container, for example a sealed Vacutainer™ or a specimen container. For discipline specific container, please refer to the relevant sections in the specific sample collection.

Secondary Package

If the sample is liquid, then the sealed primary container should be placed inside a sealed leak proof secondary package such as a sealed plastic bag or another watertight container which would be sufficient to contain all of the liquid content if the primary container breaks. Put absorbent material to prevent/ protect any type of leakage around primary package.

Please do the following:

☐ One bag per patient

☐ Insert the paper request form into the bag's side compartment/pouch/pocket

☐Do not put the request form together with the sample in same pouch

☐ Do not use staples

☐ Needles must be removed from all sample collection devices before transporting. Samples received with intact needles will be rejected

Tertiary Package

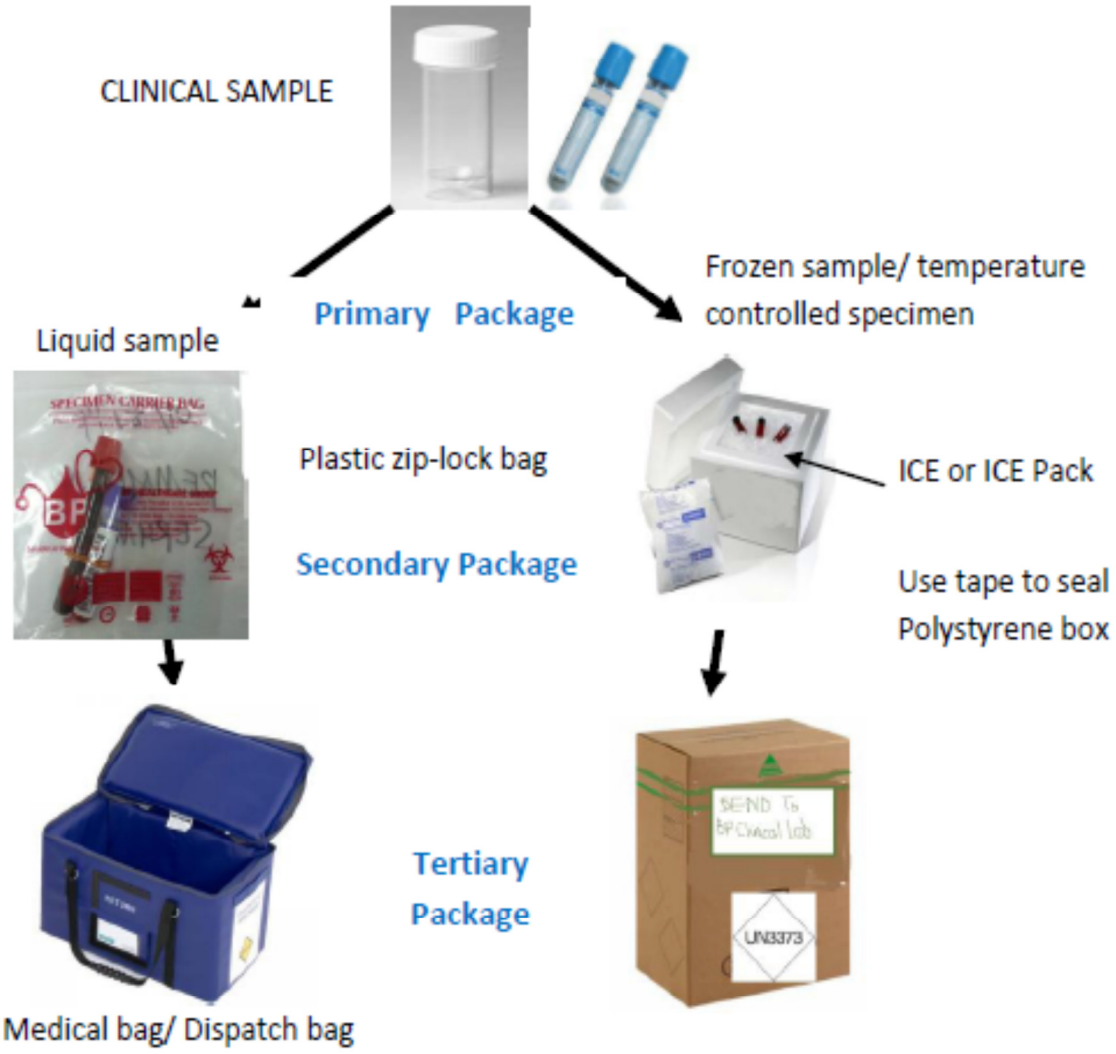
A rigid sealed/secured outer container e.g. a cardboard box or plastic container, to house thesecondary package. Please label the laboratory address clearly and biohazard symbol.

Special Requirement for Frozen Samples

☐ For temperature sensitive samples the secondary container may also be a polystyrene boxcontaining wet/dry ice. The box should be sealed with tape

☐ The polystyrene box is then placed inside a tertiary package with proper labelling.

SUMMARY OF PACKAGING FOR CLINICAL / BIOLOGICAL SAMPLE TRANSPORT



WHO GUIDELINES ON DRAWING BLOOD: BEST PRACTICES IN PHLEBOTOMY

Purpose and scope

The following guidelines summarize the best practices in phlebotomy to improve the outcomes for health workers and patients, for all levels of health care where phlebotomy is practiced. They extend the scope of the existing guidelines from the World Health Organization (WHO) and the Safe Injection Global Network (SIGN), which is a WHO-hosted network.

Objective

The objectives of these guidelines are:

• To improve knowledge and awareness of the risks associated with phlebotomy among all health workers involved in the practice;

• To increase safe practices and reduce blood borne virus exposure and transmission;

improve patient confidence and comfort;

• To improve the quality of laboratory tests.

Infection Prevention and Controls:

At all times, follow the strategies for infection prevention and control as listed below:-

DO	**DO NOT**
• DO carry out hand hygiene (use soap & water or alcohol rub), & wash carefully, including wrists & spaces between the fingers for at least 30 seconds (Please note the WHO's 'My 5 moments for hand hygiene)	○ DO NOT forget to clean your hands
• DO use one pair of non-sterile gloves per procedure or per patient	○ DO NOT use the same pair of gloves for more than one patient ○ DO NOT wash gloves for reuse
• DO use a single-use device for blood sampling &	○ DO NOT use a syringe, needle or lancet for more than one patient

• Drawing	
• DO disinfect the skin at the venipuncture site	○ DO NOT touch the puncture site after disinfecting it
• DO discard the used device (a needle and syringe is a single unit) immediately into a robust sharps container	○ DO NOT leave an unprotected needle lying outside the sharps container
• Where recapping of a needle is unavoidable, DO use the one-hand scoop technique	○ DO NOT recap a needle using both hands
• DO seal the sharps container with a tamper-proof lid	○ DO NOT overfill or decant a sharps container
• DO place laboratory sample tubes in a sturdy rack before injecting into the rubber stopper	○ DO NOT inject into a laboratory tube while holding it with the other hand
• DO immediately report any incident or accident linked to a needle or sharp injury, and seek assistance; start PEP as soon as possible, following protocols	○ DO NOT delay PEP after exposure to potentially contaminated material; beyond 72 hours, PEP is NOT effective

Wash Yours beforeVenipuncture

HOW TO HANDWASH?

• Wash hands only when visibly soiled!

1 • Wet hands with water

2 • Apply enough soap to cover all hand surfaces.

3 • Rub hands palmto palm.

4 • Right palm over left dorsum with interlaced fingers and vice versa,

5 • Palm to palm with fingers interlaced,

5 • Backs of fingers to opposing palms with fingers interlocked ,

7 • Rotational rubbing, of left thumb clasped in right palm and vice versa

8 • Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa

9 • Rinse hands with water

10 • Dry thoroughly with a single use towel

11 • Use towel to turn off faucet

12 • Your hands are safe.

HOW TO HANDRUB?

• Otherwise, use handrub!

1 • Apply a palmful of the product in a cupped hand and cover all surfaces.

2 • Rub hands palm to palm;

3 • Right palm over left dorsum with interlaced fingers and vice versa;

4 • Palm to palm with fingers interlaced;

5 • Backs of fingers to opposing palms with fingers interlocked;

6 • Rotational rubbing of left thumb clasped in right palm and vice versa;

7 • Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa.

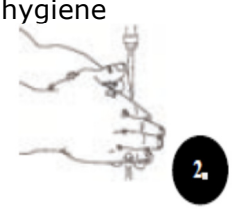
8 • Once dry... your hands are safe.

Practical Guidance on Venipuncture for Laboratory Testing

(WHO guidelines on drawing blood: Best practices in phlebotomy)

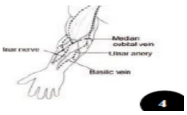
1. Assemble equipment to include needle and syringe or vacuum tube, depending on which is to be use

2. Perform hand hygiene

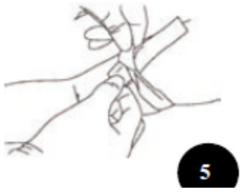


3. Identify and prepare the patient. Ask the patient to state his full name.

4. Select the site (preferably at the bend of the elbow). Palpate the area; locate a vein of a good size that is visible, straight and clear. The vein should be visible without applying the tourniquet



5. Apply a tourniquet 4–5 finger widths above the selected site



6. Ask the patient to form a fist so that the veins are more prominent

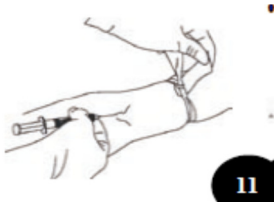
7. Put on well fitting, non-sterile gloves

8. Disinfect the site. Use 70% isopropyl alcohol and allow to dry. **DO NOT touch the site once disinfected.**

9. Anchor the vein by holding the patient's arm and placing a thumb BELOW the venipuncture site. DO NOT touch the cleaned site; in particular, DO NOT place a finger over the vein to guidethe needle

10. Perform venipuncture. Enter the vein swiftly at a30 degree angle

11. Once sufficient blood has been collected, release the tourniquet BEFOREwithdrawing the needle



12. Withdraw the needle gently. Give the patient a clean gauze or dry cotton-wool ball to press gently on the site. Ask the patient **NOT to bend the arm**

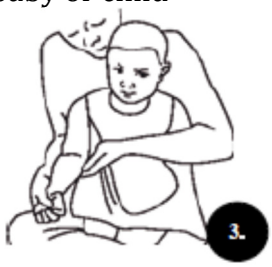
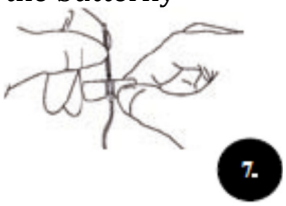
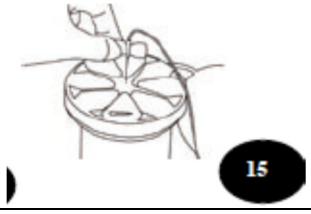
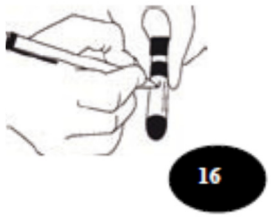
Filling tubes **1**. If the tube does not have a rubber stopper, press the plunger in slowly to reduce haemolysis (This is safer than removing the needle). **2. Place the stopper in the tube. 3.** Following laboratory instructions, invert the sample gently to mix the additives with the blood before dispatch**.**

13. Discard the used needle and syringe or blood-sampling device immediately into the sharps container.

14. Check the label and forms for accuracy

Practical Guidance on Paediatric and Neonatal Blood Sampling

(WHO guidelines on drawing blood: Best practices in phlebotomy)

1. Collect supplies and equipment. Use a winged steel needle 	2. Perform hand hygiene 	3. Immobilize the baby or child 	4. Apply a tourniquet 
5. Put on well-fitting, non-sterile gloves 	6. Attach the end of a winged infusion set to the end of the vacuum tube 	7. Remove the plastic sleeve from the end of the butterfly 	8. Disinfect the collection site 
9. Use a thumb to draw the skin tight and insert the needle 	10. Push the vacuum tube completely onto the needle 	11. Blood should begin to flow into the tube. Fill the tube until it is full or until the vacuum is exhausted 	12. Release the tourniquet 
13. Place dry gauze over the venipuncture site and slowly withdraw the needle 	14. Ask the parent to continue applying mild pressure 	15. Remove the butterfly from the vacuum tube holder. Dispose of the butterfly in a sharps container 	16. Label the tube with the patient identification number and date 

SAMPLE COLLECTION

Blood Sample

Most laboratory tests are performed on anti-coagulated whole blood, plasma or serum.

Whole Blood

Draw sufficient blood into appropriate tube. Invert the tube gently, 6 to 8 times immediately after collection. Please do not vigorously shake the tube for it will cause haemolysis. Send sample to the laboratory as soon as possible.

Plasma

Draw sufficient blood into appropriate tube. Invert the tube gently, 6 to 8 times immediately after collection. Send sample to the laboratory as soon as possible. If required, separate the plasma from the clot within 20-30 minutes, by centrifuging.

Serum

Draw sufficient blood into appropriate tube. Allow blood to clot at room temperature. Send sample to the laboratory immediately. If required, separate serum from the clot within 20-30 minutes, by centrifuging.

Vacuum Tube System Reminders

1. Tubes with powdered anticoagulants should be tapped near the stopper to dislodge any anticoagulant that may be between the stopper and the tube wall.

2. All tubes with liquid anticoagulants should be filled to the exhaustion of the vacuum to ensure proper ratio of anticoagulant to blood.

Order-Of-Draw Guidelines

The following order-of-draw is recommended when drawing multiple samples for clinical laboratory testing during a single venipuncture. Its purpose is to avoid possible test result error due to cross contamination from tube additives. This procedure should be followed for both, glass and plastic venous blood collection tubes:

1. Blood culture tube

2. Coagulation tube (e.g. blue closure)

3. Serum tube with or without clot activator, with or without gel (e.g. red closure)

4. Heparin tube with or without gel plasma separator (e.g. green closure)

5. EDTA (e.g. lavender closure)

6. Glycolytic inhibitor (e.g. gray closure)

When using a winged blood collection set for venipuncture and a coagulation tube is

the first tube to be drawn, a discard tube should be drawn first. The discard tube must be used to fill the blood collection tubing dead space and to assure maintenance of the proper anticoagulant/blood ratio and need not be completely filled. The discard tube should be a non-additive or a coagulation tube.

Order of Draw for Multiple Tube Collections: Blood should be collected in the RECOMMENDED order based on the test(s) being collected to prevent contamination

Order of Draw	**Description**	**Tube Content**	**Draw Volume**	**Determinations**	**Instructions**
1		BACTEC Blood Cultures	8-10 mL per bottle	Aerobic & Anaerobic Cultures	Sample for Blood cultures should be done separately. However, if blood samples are also needed, then **blood cultures are done first** to avoid contamination by additives from other blood tubes
2	Blue 	Sodium Citrate	2.7 mL	PT/PTT PT/INR Platelets Function Test (PFT) (use 7 tubes for PFT)	Allow tube to fill completely. Mix by inverting **4** times
3	Red 	Plain	6 mL	Antibody identifications	Mix by inverting **5** times
4	Gold 	SST (Plain with Gel)	5 mL	For Biochemistry tests	Mix by inverting **5** times

5	Green 	Lithium Heparin	4 mL	Ammonia **(please send in with ice-pack)**, HLAB27 (use 2 tubes), Cytogenetic investigations	Mix by inverting **8** times
6	Pink 	K2EDTA 10.8 mg	6 mL	Strictly for Group X-Match, Pre-transfusion Tests (Blood Group, Antibody Screen, Compatibility test)	Mix by inverting **8** times
7	Lavender 	K2EDTA 5.4 mg	3 mL	FK506, Cyclosporin, G6PD, FBC, HbA1c, Homocysteine**(please send in with ice-pack)**	Mix by inverting **8** times
8	Grey 	Sodium Fluoride	6 mL	Blood glucose analysis, Lactate **(please send in with ice-pack)**, Pyruvate, GTT	Mix by inverting **8** times

Blood Collection

a) It is recommended to take blood from a seated patient before breakfast to avoid interference from food, diurnal variation and variations arising from body position (exception for hospital in-patients).

b) Venous blood is used for testing most substances except for blood pH and blood gases measurement (whole arterial blood is heparinized in a tube with minimal head space or syringe in which it was taken).

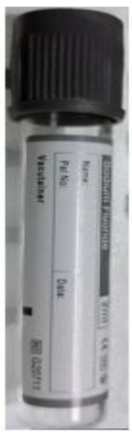
c) Avoid prolonged venous stasis by releasing the tourniquet soon after the needle enters the vein. Refrain from taking blood from a limb with a running intravenous infusion.

d) Observe careful technique and gentle handling to prevent haemolysis and trauma to the surrounding tissues.

e) Collect blood samples in standard colour-coded vacutainers.

f) Fill all tubes until the vacuum is exhausted and blood ceases to flow. For accurate results, fill the tubes to the marked line to ensure the correct blood anticoagulant ratio is attained and invert the tubes gently 6 to 10 times immediately after venipuncture.

Draw sufficient blood



- Fill to the "BLACK" mark on the tube

SPECIAL PROCEDURES FOR MICROBIOLOGY TEST

General Guidelines for Proper Specimen Collection and Transport

☐ Collect specimen before administering antimicrobial agents where possible.

☐ Use sterile containers and aseptic technique to collect specimens to prevent introduction of microorganisms during the invasive procedures.

☐ Collect an adequate amount of specimen. Inadequate amounts of specimen may yield false negative results.

☐ Transport of swabs in suitable media is essential for reliable results.

☐ Specimens obtained using needle aspiration should be transferred to a sterile container and transported to the laboratory as soon as possible. If there is only a small volume of material in the syringe, add some sterile saline, mix and then transfer to a sterile container.

☐ Formalin must not be used to preserve microbiology samples.

☐ All specimens from high risk patients (HIV, Hep B, TB, and others) must be clearly marked as high risk.

☐ The specimen container must be properly labeled, placed in a biohazard plastic bag and accompanied by a completed laboratory request form.

☐ Specimens should be transported to the laboratory as soon as possible and preferably within 24 hours.

Special Instructions

1. Urine Culture

A clean mid-stream specimen is essential. In urinary tract infection (UTI) the bacterial count exceeds 100,000 organisms/ml in the majority of cases.

Urine acts as a culture medium and therefore specimens should be stored at 4oC to prevent subsequent multiplication of bacteria after collection of the patient's sample which would invalidate the bacterial count. Any sample which may be subject to delay of more than 2 hours before being sent to the lab should be refrigerated.

Urines for culture should be collected as described below in a sterile 90mL container. The patient's full name, I.C. Number, source of specimen and date and time of collection should be specified on the request form and sample container. Also include additional relevant information concerning pregnancy, antibiotic medication, drug allergies, etc. on the requisition.

A "mid-stream clean catch" urine sample is necessary for culture so that any bacteria present around the urethra and on the hands do not contaminate the specimen.

Collection of a Mid-stream Urine Samples

(a) Early morning urine specimens are preferred, although urine collected at other times of the day are acceptable.

(b) Use a sterile container for collection.

(c) Complete the information requested on the container label: full name, IC Number, source of specimen and date and time of collection.

(d) Instruction given to the patient:

☐ Wash and dry your hands thoroughly.

☐ Remove the container lid and set it aside. Do not touch inner surfaces of container

☐ Wash your urogenital area ("lower parts") with the toiletries.

☐ For women, wipe from front to back between the folds of skin labia separated with both hands

☐ For men, retract the foreskin (if un-circumcised), and clean the glans (head of the penis)

☐ Pass a small amount of urine into the toilet (a women needs to hold the skin folds apart) and then midway through urination, urinate into the container. The container should only be 1/2 to 2/3 full.

☐ Replace the lid and tighten firmly.

☐ Wash and dry your hands thoroughly.

(e) Immediately refrigerate the specimen and dispatch to the laboratory within 24

hours of collection (maintain at 2-8°C when transporting).

(f) If transportation to the laboratory is expected to go beyond 24 hours, transfer 10mL of urine into container with boric acid preservative. Maintain preserved urine at room temperature and submit to the laboratory within 72 hours of collection.

Supra pubic bladder aspiration:

The bladder must be full before performing the procedure.

Clean the area, from central to periphery with spirit, 1% tincture iodine from suprapubicsymphysis, up to umbilicus.

Urine is aspirated directly in to syringe through a percutaneous inserted needle, thereby ensuring contamination free specimen.

Tapping method:

a) Stimulating urine flow in baby by tapping just above the pubis with two fingers,1hr after a feed.

b) One tap per second is given for 1 min an interval of 1 min is allowed, and then tapping is resumed in this cycle.

Indwelling catheter:

Sample collection in patients with indwelling catheter requires scrupulous aseptic technique. Anyone who handles the catheter should wear the gloves.

Catheter should be clamped off above the port to allowed collection of freshly voided urine.

The catheter port or wall of the tubing should then be cleaned vigorously with 70% ethanol, then urine is aspirated via a needle and syringe. The integration of the closed drainage system must be maintained to prevent the introduction of organism in to the bladder.

Note: Specimen obtained from the collection bag should be rejected.

2. Blood Culture

Ensuring that blood cultures are obtained in a manner that prevents contamination is a cornerstone of an infection prevention and control process. In addition, the increasing use of blood cultures obtained through vascular/arterial devices necessitates meticulous technique and timely communication with the microbiology laboratory.

Timing and Number

Acute Sepsis: Collect two or three sets of culture from separately prepared sites prior to initiating antimicrobial therapy. Each set consists of two bottles, one aerobic and one anaerobic or two aerobic.

Acute Endocarditis:

Obtain three blood cultures from separate venipuncture sites over 1 – 2 hours, prior to initiating therapy. These cultures are often obtained 30 minutes apart in order to document persistent bacteraemia.

Sub-acute Endocarditis:

Obtain three blood cultures on day 1 (15 minutes or more apart). If cultures are negative after 24 hours, obtain 3 more.

Volume of Blood:

Collectionof Blood for Blood cultures

o Venous blood
☐ infants: 0.5 - 2 ml
☐ children: 2 - 5 ml
☐ adults: 5 - 10 ml
o Requires aseptic technique
☐ if suspect bacterial endocarditis: 2 sets of blood culture are required

The volume of blood is critical because the concentration of organisms in most cases of bacteraemia is low, especially if the patient is already on antimicrobial therapy. However, in infants and children, the concentration of organisms during bacteremia is higher than in adults, so less volume of blood is required.

Adults: 10 ml of blood per culture bottle. In the event that less than 10 ml of blood is obtained from an adult, put it all into one aerobic blood culture bottle.

Children and infants: 1 – 3 ml of blood per culture bottle. The minimum volume is dependent upon the weight of the child/infant, please contact the microbiology department prior to obtaining the blood if assistance is needed in determining the correct amount of blood needed for the child/infant.

Procedure for blood Collection

Blood can be collected by venipuncture of peripheral veins or arteries. Collection from intravascular catheters is not recommended as they are intrinsically contaminated. If a line must be used, indicate the type of line or port through which the blood was obtained.

Technique is important to prevent contamination of the blood resulting in inaccurate results. The following are the basic tips to prevent contamination of blood collection:

☐ Perform hand hygiene, explain the procedure to the patient prior to collection of all specimen, and adhere to all appropriate safety equipment.

☐ Locate the venipuncture site prior to skin disinfection.

☐ Disinfect the venipuncture site and the stoppers of the bottles prior to blood collection.

☐ Use chlorhexidine/alcohol combination (e.g. ChloraPrep™) for skin disinfection for optimal results.

☐ Disinfect the top of the blood culture bottle(s) with 70% isopropyl or ethyl alcohol.

☐ Scrub the site with a chlorhexidine/alcohol swab or wand, using single stroke.

☐ Allow the disinfectant to dry. (DO NOT palpate the vein after disinfecting the skin, prior to inserting the needle).

☐ Draw blood using a sterile safety syringe and needle, or safety butterfly, designed to attach to a vacutainer holder and dispense the appropriate amount of blood into the bottles.

NOTE: The blood culture bottles can be used with the vacutainer adapter, but it may not deliver a controlled draw. Care must be taken to dispense the appropriate amount of blood into the culture bottle.

☐ Aftervenipuncture and inoculation of bottles, engage safety device on needle or butterfly and immediately dispose of collection materials in a sharps container. Wipe residual chlorhexidine/alcohol from skin with alcohol to prevent irritation of the skin.

☐ Indicate site of draw, date and time of draw, and initials of person drawing blood.

☐ If blood has been obtained through an indwelling intravascular device, provide specific information including lumen and location of the device.

☐ Transport blood cultures to the Laboratory immediately. Do not refrigerate. Delay in transport may compromise the specimen and recovery of organisms.

3. Nasal Swab

A nasal swab is not usually useful for the investigation of sinusitis. Antral lavage or pus from sinus should be sent if acute maxillary sinusitis is suspected.

Nasal swabs are useful for the investigation of carriage of Staphylococcus, including MRSA.

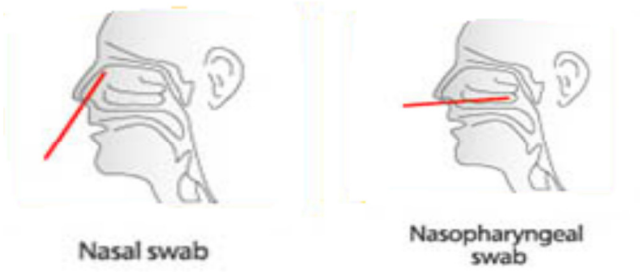
Use Infection Control Precautions

☐ Wear a surgical mask and disposable gloves.

☐ Wash hands thoroughly with soap and water or alcohol-based hand gel before and after the procedure.

☐ When completed, dispose of all PPE and other contaminated materials in the trash.

How to Do a Nasopharyngeal Swab



☐ Remove patient's surgical mask to perform theprocedure and replace with a new one when done.

☐ Use a flexible fine-shafted aluminum swab with apolyester (dacronor rayon, not cotton or calciumalginate) tip.

☐ The distance from the patient's nose to the ear givesan estimate of the distance the swab should beinserted.

☐ Insert swab into one nostril down and backward into the nasopharynx and leave in place for a few seconds.

☐ Slowly withdraw swab with a rotating motion.

☐ Place tip of the swab into a vial containing 2–3 ml of VTM* and cut the shaft.

Storage

☐ Specimen can be kept refrigerated at 4°C for up to 72 hours

☐ Specimens that cannot be processed within 48-72 hours should be kept in the refrigerator at 4°C.

4. Genital Infections Sexually Transmitted Diseases

Specimens Required

Females: Cervical or High vaginal swabs, Urethral swabs

Males: Urethral swab, penile swab

Genital tract swabs

Cervical and high vaginal swabs should be taken with the aid of a speculum. It is important to avoid vulvar contamination of the swab. For trichomonas, the posterior fornix, including any obvious candida plaques should be swabbed. If pelvic infection, including gonorrhoea, is suspected, the cervical os should be swabbed.

High Vaginal Swabs

After the introduction of the speculum, the swab should be rolled firmly over the surface of the vaginal vault. The swab should then be placed in transport medium preferably with charcoal.

Cervical Swabs

After introduction of the speculum into the vagina, the swab should be rotated inside the endocervix. The swab should then be placed in transport medium preferably with charcoal.

Urethral Swabs

Thin swabs are available for collection of specimens.

The patient should not have passed urine for at least 1 hour.

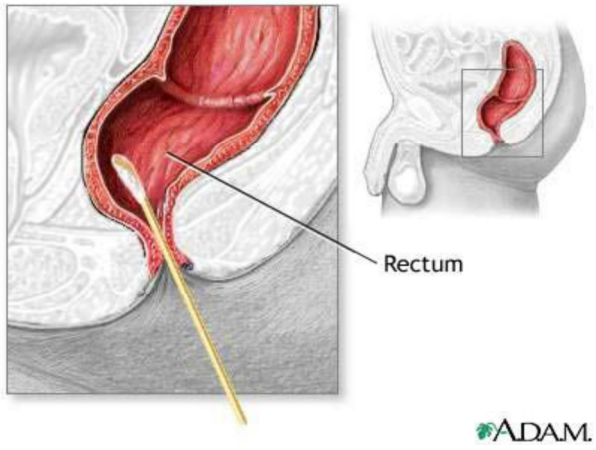
For males, the swab is gently passed through the urethral meatus and rotated. Place the swab in transport medium preferably with charcoal.

Intrauterine Contraceptive Devices (IUCDs)

The entire device should be sent in a sterile universal container.

5. Rectal Swabs

Rectal swabs should be taken via a proctoscope.



Advantages of rectal swabs:

- Convenient
- Adapted to small children, debilitated patients and othersituations where voided stool sample not feasible

Drawbacks of rectal swabs:

- No macroscopic assessment possible
- Less material available
- Not recommended for viruses

6. Pus Samples/ Wound Swabs

Wound swabs should only be taken when signs of clinical infection are present. Deep rather than superficial swabs give more accurate representation of bacteria/fungi if present.

Please indicate clearly on the request form and the swab, the site of the wound to facilitate interpretation of culture results.

Specimens Required

1. Pus sample (always preferable to a wound or pus swab) in sterile universal container.

2. Wound swab in transport medium.

Wound or Pus samples are screened for all likely bacterial pathogens and, if present, these organisms and their antibiotic sensitivity results will be reported. The inclusion of relevant clinical information on the request form will assist in determining the bacterial isolates.

Abscess

1. Decontaminate the surface with 70-95% alcohol and 1-2% tincture of iodine.

2. Collect the purulent material aseptically from an un-drained abscess, using a sterile needle and syringe. Open miliary abscesses with a sterile scalpel and collect the

expressed material with a sterile needle and syringe.

3. Transfer 5-10 ml of the aspirated material to an anaerobic transport vial. Transport immediately. Anaerobic transport media is not recommended for AFB culture. If requesting AFB culture, transfer at least 1 ml of the aspirated material into a sterile container.

4. Swabs are a poor choice because they dry easily and because of the limited amount of material obtained. Swabs are not optimal for fungal, anaerobe cultures, or decubitus ulcers. Swabs are not accepted for mycobacterial cultures, perirectal abscesses and oral abscesses. Gram stains cannot be provided from a single swab. If a Gram stain is needed, collect two swabs.

Eye Swab

☐ Explain the procedure and the purpose of the investigation to the patient to obtain informed consent, gain co-operation, and allay any fears and anxieties.

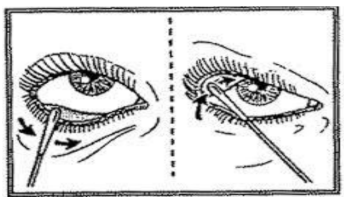
☐ Sit or lay the patient with head well-supported and with the chair at an appropriate height to ensure safety for the patient and the nurse.

☐ Do hand hygiene to reduce the risk of cross infection

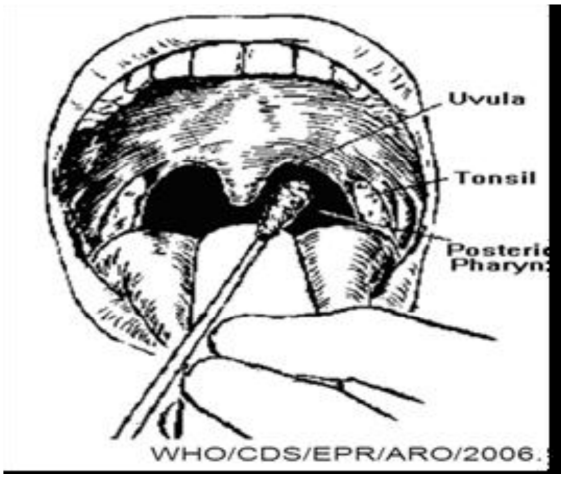
☐ Ask the patient to look up and gently pull down the lower lidexposing the conjunctiva.

☐ Gently sweep the swab stick along the lower fornix, from inner to outer canthus, taking care not to touch the eyelids. Place swab immediately into bacterial medium container, then ask patient to close the eye for a few seconds. This will ensure safe technique of swab taking and avoid damage to the cornea.

☐ Repeat the procedure to the other eye if necessary to comply with investigatory request, wash hands in between to minimize the risk of contamination to the other eye. A separate swab is required for each eye.



Throat Swab
(Posterior pharyngeal swab)
☐ Hold tongue away with tongue depressor.
☐ Locate areas of inflammation and exudate inposterior pharynx, tonsillar region of throatbehindUvula.
☐ Avoid swabbing soft palate.
☐ Do not touch tongue.
☐ Rub the affected area back and forth with cotton or Dacron swab



9. Fungal nail and skin infections

Affected areas should be scraped with a blunt scalpel to harvest affected hairs,broken-off hair stubs and scalp scale. This is preferable to plucking, which mayremove uninvolved hairs. Scrapings should be transported in a folded square ofpaper preferably fastened with a paper clip, but commercial packs are alsoavailable (e.g. 'Mycotrans'). It is easier to see affected hairs on white paperrather than black.

10. Sputum

A good quality purulent or mucopurulent sputum specimenshould be obtained, preferably before antimicrobial therapyalthough antimicrobial therapy should not be delayedunnecessarily while awaiting a sputum specimen. Thespecimen should be transported to the laboratory within 2h. Salivary or mucosalivary specimens are unsuitable and assuch are not processed.

Instructions for the patients:

a. Do mouth wash.
b. Take a deep breath.
c. Cough deeply to produce sputum.
d. Collect the sputum in sterile universal container provided.
e. Take care not to mix it with saliva.
f. Cap the lid securely.
g. Early morning sputum sample is preferable

Specific aetiological agents have been associated with certainunderlying diseases. It is therefore important to include allrelevant clinical information.

11. Tip culture

Distal 3 cm of the line cut with a sterile scissors should be sent in to sterile universal container. Only send tips from lines that are suspected to be infected.Specimens received without appropriate clinical informationwill not be cultured.

12. Collection of Body fluids:

o Collect Body fluids in appropriate sterile vaccumised tube after releasing cap and removing vacuum.
o After aspiration of synovial, pleural, pericardial, peritoneal, or hydrocele fluid, aseptically dispense the fluid (2-5ml), in a sterile universal container and transport immediately to the bacteriology laboratory.

Collection of CSF sample:

o Collect CSF in a sterile container.
o Cerebrospinal fluid must be collected aseptically from the subarachnoid space by lumbar puncture by the trained personnel and the CSF is allowed to drip into a dry sterile container and transport immediately to the laboratory.
o If there is any delay in transport, do not refrigerate it. Keep it at roomtemperature. Use recommended transport media whenever necessary.

9.SAMPLE TRANSPORTATION TO LABORATORY:

Transportation of Samples within the Same Building

Please follow instruction as for Primary Package and Secondary Package.

Transport of Samples to Other Areas Not Within the Same Building

Samples should be packaged as per instruction as Primary, Secondary and Tertiary

1) Send the sample for analysis as early as possible.

2) Keep the samples at 2 to 8 º C till analyzed.

3) Sample to be transported in Transportation box/vaccine carrier with ice pack.

4) Samples should be transported in a manner to prevent contamination to workers, patients, and environment.

5) Samples must be transported in a secondary container to prevent accidental spillage and breakage

6) All specimens should be collected or transferred into a leak-proof primary container with a secure closure.

7) Care should be taken by the person collecting the specimen not to contaminate the outside of the primary container.

8) Laboratory requisitions slips should be protected from contamination and separated from the primary container.

9) Person who transport specimens must be trained in safe handling practices and in decontamination procedures in case of a spill.

10) Gloves should be worn when removing specimens from the primary container and for all manipulations of the primary container.

11) If delay in transport of Urine is more than 2 hours then refrigerate the sample at 4º C or add boric acid (0.1gm/10ml) if the sample is not refrigerated.

12) If immediate delivery of Body fluid sample is not possible then stored the sample at 4 -80 C.

13) Do not refrigerate CSF for Culture and Sensitivity, transport at ambient temperature

Sr. no	Specific tests/ examination performed	Transport timeframe (time between collection and receipt)	Special transport care
1.	Aerobic Culture and antimicrobial Susceptibility for urine	<2hrs at 2' C - 8 ' C	If >2hrs is anticipated, add boric acid preservative or keep at 2°C - 8° C
2.	Aerobic Culture and antimicrobial Susceptibility for pus	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
3.	Aerobic Culture and antimicrobial Susceptibility for swab	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
4.	Aerobic Culture and antimicrobial Susceptibility for body fluid	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
5.	Aerobic Culture and antimicrobial Susceptibility for Blood	<2hrs	Room temperature/ Incubator
6.	Aerobic Culture and antimicrobial Susceptibility for CSF	<2hrs	Room temperature/ incubator-37°C.Do not refrigerate
7.	Aerobic Culture and antimicrobial Susceptibility for Sputum	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
8.	Aerobic Culture and antimicrobial Susceptibility for Stool	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
9.	Gram stain	<2hrs	-----
10.	Acid fast Stain	<2hrs	------
11.	Special stain (Albert's stain, toludine blue stain)	<2hrs	Recommended transport media
12.	Water sample	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
13.	OT sample	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
14.	Hepatitis-B Rapid test for surface Antigen detection(HBsAg)	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
15.	Hepatitis-B ELISA test for surface Antigen detection (HBsAg)	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
16.	Widal test for Typhoid (Tube agglutination test)/ Rapid test for Typhoid	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
17.	Test for Syphilis-Rapid plasma reagin test. (Slide flocculation test)	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
18.	Anti Streptolysin O test (latex agglutination card test)	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
19.	C Reactive Protein(CRP)(latex agglutination card test)	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
20.	Rheumatoid Factor (RA test)(latex agglutination card test)	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
21.	Ig M antibody detection for HAV(Rapid test)	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
22.	Ig M antibody detection for HAV(ELISA Test)	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
23.	Ig M antibody detection for HEV(Rapid test)	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C

24.	Ig M antibody detection for HEV (ELISA Test)	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
25.	Ig M antibody detection for HCV by rapid test	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
26.	Ig M antibody detection for HCV by ELISA test	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
27.	Ig M antibody detection for Chikungunya	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
28.	Ig M antibody / NS1 detection for Dengue	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
29.	Ig M&Ig G antibody detection for Measles	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
30.	FUNGAL culture	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
31.	KOH Preparation	<2hrs	Room temperature
32.	Indian ink preparation of CSF for Cryptococci	<2hrs	Room temperature
33.	Stool for ova- cyst	<2hrs	Room temperature
34.	Leptospirosis -Rapid test for Ig M antibody detection	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
35.	Leptospirosis -ELISA test for Ig M and Ig G antibody detection	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
36.	HIV test for Antibody detection	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
37.	CD 4 count	<2hrs	If >2hrs is anticipated, keep at 22°C , at room temperature
38.	Leptospirosis(MAT-Microscopic agglutination)	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
39.	Leptospirosis(PCR- Polymerase chain reaction)	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
40.	H1N1 swine influenza PCR (Category "C" only)	<2hrs	In cold chain only at 2-8 °C
41.	HIV -1 Viral load test	<2hrs	In cold chain only at 2-8 °C
42.	Ig M and Ig G antibody detection for TORCH	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
43.	Rapid test for typhoid fever-WB	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
44.	Ig M and Ig G antibody detection for HSV-1	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
45.	Ig M and Ig G antibody detection for HSV-2	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C
46.	Dengue (PCR- Polymerase chain reaction)	<2hrs	If >2hrs is anticipated, keep at 2°C -8° C

10. Safe disposal of materials after sample collection

Material	Treatment	Disposal
Waste sharps including metals Needles, syringes with fixed needles, needles from needle tip cutter or burner Scalpel blades	○ Dispose in (translucent) puncture-proof, tamper proof, leak proof containers 	Treat with 1% hypochlorite or autoclave or dry heat sterilization followed by shredding or mutilation
Needle holder, Syringe Vacutainer collection tube Infected gloves Catheters, urine bags Infectious plastic waste	○ Dispose in non-chlorinated plastic bags / containers red bag 	Autoclaving or micro-waving/ hydroclaving followed by shredding or mutilation
Human Anatomical waste Animal anatomical waste Soiled waste Expired or discarded medicines Chemical waste Micro, Bio technology and other clinical lab waste Chemical liquid waste	○ Non chlorinated yellow plastic bags ○ Separate collection system leading to effluent treatment system 	Incineration or plasma pyrolysis or deep burial
Glassware	○ Cardboard boxes with blue colored marking 	Disinfection or autoclavin microwaving, hydroclavir and then sent for recycling

Waste collected in White puncture-proof container and red beg should be delivered to central biomedical waste collecting authority and acknowledgement of the same should be obtained.

11) Storage of examined samples

1) From receiving of urine sample to inoculation period urine sample are stored at 4-8^0 C.
2) After inoculation of all bacteriology sample for culture are stored at 4-8^0 C for 72 hours. And CSF for culture,stored in GPB or BHI broth at room temperature.
3) All other samples are stored at 2-8^0 C for 72 hours.

Procedure for Storage of samples are mentioned in all section of Microbiology department in document MI: C/0019 procedure for storage of samples

12) Repeat examination due to analytical failure

- Whenever there is analytical failure following action is taken
  -If (residual primary sample/secondary sample is sufficient) and (sample integrity is not in doubt) .Then examinations are repeated and reported
  -If (residual primary sample and secondary sample are insufficient) or (sample integrity is in doubt) then clinician is informed of analytical failure on phone or in writing or in person
- Clinician is requested to resend the new sample.
- Analytical failure is reported against the concerned examination in concerned sample ID and also in NC register of respective section.

Complain/Feedback

1. Complain or feedback forms are available in all the different sections of laboratory services, GMCS, SURAT.
2. In case of complain or feedback, fill the forms available and put in to complain box or contact Section In-charge/ Quality Manager/ Laboratory Director.
3. Complain box is checked weekly and necessary action will be taken after analysis.
4. Regarding the diagnostic report please contact Section In-charge of respective Sections/ Quality Manager/ Laboratory Director.

13. TURN AROUND TIME

Sr. no	Specific tests/ examination performed	Maximum Turnaround time	
		OPD	WARD
1	Aerobic Culture and antimicrobial Susceptibility for urine	Negative: 54hr, Positive: 80hr	Negative: 54 hr, Positive: 80hr
2	Aerobic Culture and antimicrobial Susceptibility for pus	Negative: 54 hr, Positive: 80 hr	Negative: 54 hr, Positive: 80 hr
3	Aerobic Culture and antimicrobial Susceptibility for swab	Negative: 54 hr, Positive: 80 hr	Negative: 54 hr, Positive: 80 hr
4	Aerobic Culture and antimicrobial Susceptibility for body fluid	Negative: 54 hr, Positive: 80 hr	Negative: 54 hr, Positive: 80 hr
5	Aerobic Culture and antimicrobial Susceptibility for Blood	Negative: 5 days Positive: 6 days	Negative: 5 days Positive: 6 days
6	Aerobic Culture and antimicrobial Susceptibility for CSF	Negative: 54 hr, Positive: 80 hr	Negative: 54 hr, Positive: 80 hr
7	Aerobic Culture and antimicrobial Susceptibility for Sputum	Negative: 54 hr, Positive: 80 hr	Negative: 54 hr, Positive: 80 hr
8	Aerobic Culture and antimicrobial Susceptibility for Stool	Negative: 54 hr, Positive: 80 hr	Negative: 54 hr, Positive: 80 hr
9	Gram stain	If sample received before 1 pm: 6hrs If sample received after 1 pm: 24hrs	If sample received before 1 pm: 6hrs If sample received after 1 pm: 24 hrs
10	Acid fast Stain	If sample received before 1 pm: 6hrs If sample received after 1 pm: 24hrs	If sample received before 1 pm: 6hrs If sample received after 1 pm: 24 hrs
11	Special stain (Albert's stain, toludine blue stain)	If sample received before 1 pm: 6hrs If sample received after 1 pm: 24hrs	If sample received before 1 pm: 6hrs If sample received after 1 pm: 24 hrs
12	Water sample	72 hrs	72 hrs

13	OT sample	48hrs	48 hrs
14	Hepatitis-B Rapid test for HBs Antigen detection	If sample received between 9 am to 3 pm: 6hrs If sample received after 3 pm: 24hrs	If sample received between 9 am to 3 pm: 6hrs If sample received after 3 pm: 24hrs
15	Hepatitis-B ELISA test for HBs Antigen detection	If sample received before10 am: 6 hrs If sample received after 10 am : 30hrs	If sample received before 10 am: 6hrs If sample received after 10Am: 30 hrs
16	Widal test for Typhoid (Tube agglutination test)	If sample received before3 pm: 24hrs If sample received after 3 pm: 48hrs	If sample received before3 pm: 24hrs If sample received after 3 pm: 48hrs
17	Test for Syphilis-Rapid plasma reagin test.(Slide flocculation test)	If sample received before 10 am 6 hrs If sample received after 10am: 30 hrs	If sample received before 10 am: 6hrs If sample received after 10pm: 30 hrs
18	Anti-Streptomycin O test (latex agglutination test)	If sample received between 9 am to 3 pm: 6hrs If sample received after 3 pm: 24hrs	If sample received between 9 am to 3 pm: 6hrs If sample received after 3 pm: 24hrs
19	C Reactive Protein(CRP)(latex agglutination test)	If sample received between 9 am to 3 pm: 6hrs If sample received after 3 pm: 24hrs	If sample received between 9 am to 3 pm: 6hrs If sample received after 3 pm: 24hrs
20	Rheumatoid Factor (RF test)(latex agglutination test)	If sample received between 9 am to 3 pm: 6hrs If sample received after 3 pm: 24hrs	If sample received between 9 am to 3 pm: 6hrs If sample received after 3 pm: 24hrs
21	Ig M Antibody detection for HAV by ELISA test	If sample received before 10 am: 6 hrs If sample received after 10am: 30 hrs	If sample received before 10 am: 6 hrs If sample received after 10am: 30 hrs

22	Ig M Antibody detection for HEV by ELISA test	If sample received before 10 am : 6 hrs If sample received after 10am: 30 hrs	If sample received before 10 am: 6 hrs If sample received after 10am: 30 hrs
23	Ig M Antibody detection for HAV by rapid test	If sample received between 9 am to 3 pm: 6hrs If sample received after 3 pm: 24hrs	If sample received between 9 am to 3 pm: 6hrs If sample received after 3 pm: 24hrs
24	Ig M Antibody detection for HEV by rapid test	If sample received between 9 am to 3 pm: 6hrs If sample received after 3 pm: 24hrs	If sample received between 9 am to 3 pm: 6hrs If sample received after 3 pm: 24hrs
25	Ig M and Ig G antibody detection for Measles	72hrs	72 hrs
26	Ig M Antibody detection for HCV by rapid test	If sample received between 9 am to 3 pm: 6hrs If sample received after 3 pm: 24hrs	If sample received between 9 am to 3 pm: 6hrs If sample received after 3 pm: 24hrs
27	Ig M Antibody detection for HCV by ELISA test	If sample received before 10 am 6 hrs If sample received after 10 am: 30hrs	If sample received before10 am: 6hrs If sample received after 10 pm: 30 hrs
28	Ig M antibody detection for Chikungunya	72 hours	72 hours
29.	Ig M ELISA antibody detection for Dengue	48 hrs	48 hrs
30.	Ns1 antigen detection for Dengue	48 hrs	48 hrs
31.	Fungal culture	7 days	7 days
32.	KOH preparation	6 hrs	6 hrs
33.	Indian ink preparation of CSF for Cryptococci	6 hrs	6 hrs
34	Stool for Ova and Cyst	6 hrs	6hrs
35	Leptospirosis -Rapid test for Ig M antibody detection*	If sample receive before 11 am:report given at 5 pm If sample received after 11am: next	If sample receive before 11 am:report given at 5 pm If sample received after 11am: next working day at 5 pm

36	Leptospirosis -ELISA test for Ig M and Ig G antibody detection*	If sample receive before 11 am :report given at 5 pm If sample received after 11am: next working day at 5 pm	If sample receive before 11 am :report given at 5 pm If sample received after 11am: next working day at 5 pm
37	In ICTC: HIV rapid test for Antibody detection	If sample received before 1 pm: 4 pm If sample received after 1 pm: 24 hrs	If sample received before 1 pm: 4 pm If sample received after 1 pm: 24 hrs
38	In SRL: HIV Rapid and ELISA test for Antibody detection	Reports are dispatched in fourth week of quarter month. (Jan, April, July, October) For indeterminate samples, reports are given within 1 week.	
39	CD 4 count	If sample received before 1 pm: 4 pm If sample received after 1 pm: 24 hrs	If sample received before 1 pm: 4 pm If sample received after 1 pm: 24 hrs
40	Leptospirosis(MAT-Microscopic agglutination)	If sample receive before 11 am:report given at 5 pm If sample received after 11am: next working day at 5 pm	If sample receive before 11 am :report given at 5 pm If sample received after 11am: next working day at 5 pm
41	Leptospirosis(PCR- Polymerase chain reaction)	If sample receive before 11 am:report given at 5 pm If sample received after 11am: next working day at 5 pm	If sample receive before 10 am:report given at 5 pm If sample received after 10am: next working day at 5 pm
42	Rapid test for typhoid fever	If sample received between 9 am to 3 pm: 6hrs If sample received after 3pm: 24hrs	If sample received between 9 am to 3 pm: 6hrs If sample received after 3pm: 24hrs

43	H1N1 swine influenza PCR (Category "C" only)	If sample received before 11 am: 5pm If sample received after 11am: Next working day 5 pm	If sample received before 11 am: 5pm If sample received after 11am: Next working day 5 pm
44	Ig M and Ig G antibody detection for TORCH	48 hrs	48 hrs
45	Ig M and Ig G antibody detection for HSV-1	48 hrs	48 hrs
46	Ig M and Ig G antibody detection for HSV-2	48 hrs	48 hrs
47	Dengue (PCR- Polymerase chain reaction)	36 hrs	36 hrs

SR. NO.	**SPECIFIC TESTS/ EXAMINATION IN EMERGENCY**	**Maximum turn around time**	
		Interim report	**Final report**
1	Gram stain (Suspected gas gangrene, Diphtheria, CSF meningitis, precious body fluids)	2 hrs	24 hrs
2	HIV rapid test for Antibody detection	Negative report: 2 hrs, Positive: awaited, refer patient to ICTC	Negative report: 2 hrs, Positive: 24 hrs from ICTC
3	Hepatitis-B Rapid test for HBs Antigen detection	2 hrs	24 hrs
4	Leptospirosis -Rapid test for Ig M antibody detection	2 hrs	24 hrs
5	IgM rapid test for HCV antibody detection	2 hrs	24 hrs
6	Stool darting motility for suspected cholera cases	2 hrs	2 hrs
7	India ink preparation in CSF sample for cryptococcal meningitis	2 hrs	2 hrs

- **On holiday result will be given on next working day.**
- **Total turnaround time will be applicable only for the available test kits & reagents for particular tests requested.**

HANDLING OF TEST RESULTS

☐ All test results are treated with strict confidentiality.

☐ Laboratory management is responsible for ensuring that reports are received by the appropriate individuals within an agreed-upon time interval. When results transmitted as an interim report, the final report will be forwarded to the requester.

☐ Total turnaround time will be applicable only for the available test kits & reagents for particular tests requested.

☐ All shortfalls in the turnaround time are investigated and where necessary, corrective action are taken immediately to address any problems.

☐ Copies or files of reported results are retained electronically in the Laboratory Information System. This facilitates retrieval of the information.

☐ The laboratory will notify the physician (or other clinical personnel responsible for patient care) when the test results for critical properties fall within established "alert" or "critical" interval and when an urgent test is requested.

11.CRITICAL LABORATORY VALUES

Definition:

Critical laboratory Result

Test result or value that falls outside the critical limits or the presence of any unexpected abnormal findings, cells or organisms which may cause imminent danger to the patient, and/or require immediate medical attention

Critical Limit

Boundaries of low and high laboratory test values beyond which may cause imminent danger to the patient and/or require immediate medical attention

Who Do We Inform?

To the clinician who had ordered the test or to the next designated person if the responsible clinician is not around.

Critical intervals and properties for examination

Sr. no	Specific tests/ examination performed	Samples	Critical values
1.	Aerobic Culture and antimicrobial Susceptibility for urine	Urine	No critical values
2.	Aerobic Culture and antimicrobial Susceptibility for pus	Pus	No critical values
3.	Aerobic Culture and antimicrobial Susceptibility for swab	Swab	No critical values
4.	Aerobic Culture and antimicrobial Susceptibility for body fluid	Body fluids	No critical values
5.	Aerobic Culture and antimicrobial Susceptibility for Blood	Blood	Positive
6.	Aerobic Culture and antimicrobial Susceptibility for CSF	CSF	Positive
7.	Aerobic Culture and antimicrobial Susceptibility for Sputum	Sputum	No critical values
8.	Aerobic Culture and antimicrobial Susceptibility for Stool	Stool	If Salmonella, shigella isolation in culture and darting motility of vibrio from stool sample.
9.	Gram stain	Any sample	Throat swab: Gram positive bacilli, rash exudates &CSF: Gram negative diplococcic, Pus exudates: gram positive bacilli, blood culture: if any organism seen.
10.	Acid fast Stain	Sputum, body fluids, urine etc..	No critical values
11.	Special stain (Albert's stain, toluidine blue stain)	Throat swab	Corynebacterium diphtheria
12.	Water sample	Water in sterile bottle	No critical values
13.	OT sample	Swab , petri dish	No critical values

14.	Hepatitis-B Rapid test for HBs Antigen detection	Serum	No critical values
15.	Hepatitis-B ELISA test for HBs Antigen detection	Serum	No critical values
16.	Widal test for Typhoid (Tube agglutination test)	Serum	No critical values
17.	Test for Syphilis-Rapid plasma reagin test. (latex agglutination test)	Serum	No critical values
18.	Anti Streptolysin O test (latex agglutination card test)	Serum	No critical values
19.	C Reactive Protein(CRP)(latex agglutination card test)	Serum	No critical values
20.	Rheumatoid Factor (RA test)(latex agglutination card test)	Serum	No critical values
21.	Ig M antibody detection for HAV by rapid test	Serum	No critical values
22.	Ig M antibody detection for HEV by rapid test	Serum	No critical values
23.	Ig M antibody detection for HAV by ELISA test	Serum	No critical values
24.	Ig M antibody detection for HEV by ELISA test	Serum	No critical values
25.	Ig M and Ig G antibody detection for Measles	Serum	No critical values
26.	Ig M antibody detection for HCV by rapid test	Serum	No critical values
27.	Ig M antibody detection for HCV by ELISA test	Serum	No critical values
28.	Ig M antibody detection for Chikunguniya	Serum	No critical values
29.	Ig M antibody detection for Dengue	Serum	Positive
30.	FUNGAL culture		No critical value
31.	KOH Preparation	Scrapping from affected area	Positive corneal scrapping
32.	Indian ink preparation of CSF for Cryptococci	CSF	Positive
33.	Stool for ova- cyst	Stool	No critical values
34.	Leptospirosis -Rapid test for Ig M antibody detection	Serum	Positive

35.	Leptospirosis -ELISA test for Ig M and Ig G antibody detection	Serum	Positive
36.	HIV test for Antibody detection	Serum	No critical values
37.	CD 4 count	Whole blood in EDTA	No critical values
38.	Leptospirosis(MAT-Microscopic agglutination)	Serum	Positive
39.	Leptospirosis(PCR-Polymerase chain reaction)	Serum	Positive
40.	NS1 antigen	Serum	Positive
41.	Rapid test for typhoid fever	Serum	No critical values
42.	H1N1 swine influenza PCR (Category "C" only)	Nasopharyngeal swab and throat swab in VTM	Positive
43.	Ig M and Ig G antibody detection for TORCH	Serum	No critical values
44.	Ig M and Ig G antibody detection for HSV-1	Serum	No critical values
45.	Ig M and Ig G antibody detection for HSV-2	Serum	No critical values
46.	Dengue (PCR-Polymerase chain reaction)	Serum	Positive