LABORATORY USER MANUAL

Table of Contents

LIST OF ACRONYMS

CARICOM	Caribbean Community
CARPHA	Caribbean Public Health Agency
CMS	CARPHA Member States
CSF	Cerebro Spinal Fluid
DOB	Date of Birth
ELISA	Enzyme Linked Immuno Sorbent Assay
ICAO	International Civil Aviation Organization
ID	Identification
IgG	Immunoglobulin G
IgM	Immunoglobulin M
MDR-TB	Multi Drug Resistant Tuberculosis
NPS	Nasopharyngeal Swab
PCR	Polymerase Chain Reaction
TB	Tuberculosis
WHO	World Health Organization

1. INTRODUCTION

This manual is designed to give an overview of the services provided by the CARPHA Medical Microbiology Laboratory (CMML) in Trinidad

CARPHA is the amalgamation of five Caribbean regional health institutions (RHI) which started operation from the 01st January, 2013. The RHI's were**: Caribbean Epidemiology Centre (CAREC), the Caribbean Environmental Health Institute (CEHI), the Caribbean Food and Nutrition Institute (CFNI), the Caribbean Health Research Centre (CHRC) and the Caribbean Regional Drug Testing Laboratory (CRDTL)**. For more info, please visit CARPHA`s website http://www.carpha.org

1.1 CARPHA's Vision

Healthy People, Healthy Spaces, Healthy Caribbean.

1.2 CARPHA's Goal

A Caribbean in which people are resilient, living longer and healthier lives in a more supportive environment.

1.3 CARPHA's Mission

As a professional organisation to build member states' capacity to prevent disease and promote health and wellness through leadership, partnership and innovation in public health.

1.4 Role of the Laboratory

The main function of the laboratory based in Trinidad is to provide reference and referral services, training, technology transfer, monitoring and research of public health importance.

Our staff is committed to providing the highest quality service to our member states and as such we have instituted and continually upgraded our systems to ensure that the quality of our services is assured at all times.

2. GENERAL INFORMATION

2.1 Laboratory Address and Contact Information

The CARPHA Medical Microbiology Laboratory is located at:

16-18 Jamaica Boulevard,
Federation Park,
NEWTOWN 190324
Port-of-Spain, TRINIDAD

General Telephone	1-868: 299-0820; 299-0895; 622-4261
Email:	customerservice@carpha.org
Website:	www.carpha.org

2.2 List of Contacts

Any queries relating to service provision or the User Manual should be directed to the Laboratory Management Team. Email: LMT@carpha.org.

Requests for advice regarding technical aspects of the service directed to the Head of Laboratory Services

Additional contact numbers are provided in the Table below.

Position	Name	Extension
Head Laboratory Services and Networks (Laboratory Director)	**Dr. Michelle Hamilton**	**40334**
For Entomology related queries **- Senior Technical Officer – Vector Borne Diseases**	**Rajesh Ragoo**	**40300**
Senior Technologist – Virology **Senior Technologist – Virology**	**SueMin Nathaniel** **Risha Singh**	**40266** **40283**
Quality Manager	**Lisa Edghill**	**40254**

2.3 Complaints & Compliments

Feedback from our users – both positive and negative – allows us to continually refine and improve the service we provide These may be submitted in the following manner:

1. **ORALLY** - Please contact the Quality Manager (Lisa Edghill)
   Phone: (868) 622-4261 EXT 40254
   Email: edghilli@carpha.org

2. **WRITTEN** – Please complete the Customer Feedback Form (FOR-Q10-001) in Annex 5 (Page 40) and email to the Quality Manager

2.4 Hours of Service

Normal Opening Hours: Monday to Friday (Except Public Holidays): 8:00 a.m. to 4:30 p.m.
For outside of routine working hours, weekends, public holidays and emergency situations please contact CARPHA at 1-868-622-4261/2 and 1-868-299-0895.
The declared public holidays in Trinidad and Tobago are as follows:

MONTH	DAY	HOLIDAY
January	**01**	**New Year's Day**
March	**30**	**Shouter Baptist Liberation Day**
May	**30**	**Indian Arrival Day**
June	**19**	**Corpus Christi**
August	**01** **31**	**Emancipation Day** **Independence Day**
September	**24**	**Republic Day**
December	**25** **26**	**Christmas Day** **Boxing Day**
Dates to be announced	**Change from year to year**	**Carnival Monday** **Carnival Tuesday** **Good Friday** **Easter Monday** **Labour Day** **Eid-ul-Fitr** **Divali**

2.5 Referred Work

For the purposes of additional or confirmatory investigations, samples may be sent to one of our external referral laboratories:

1. Centers for Disease Control and Prevention
   United States of America

2.6 Urgent Laboratory Investigation

To aid the Laboratory in identifying specimens that are deemed clinically or epidemiologically urgent, users are requested to follow the protocol below.

Please note: It is ***not*** sufficient to simply write urgent on the request form.

1: Contact CMML prior to sending the sample

If a sample is deemed urgent, please contact Customer Service ***PRIOR*** to sending the sample

Email: customerservice@carpha.org

Phone: 1-868-622-4261 EXT 40291

Emergency Phone: 1-868-324-0869 (Dr. Michelle Hamilton)

2: Provide the name and contact number (mobile if possible) of person to contact re the result

It is ***ESSENTIAL*** that these contact details are accurate, and a designated person is available to discuss the request as further information may be required before the sample is processed as urgent.

3: Ensure urgent samples are clearly identified particularly when they are included with routine delivery items

NOTE: Urgent samples should be packaged in a separate container/envelope and clearly marked as URGENT on the external packaging and request form.

4: Result reporting

It is ***ESSENTIAL*** that contact details are provided for results to be telephoned when required.

2.7 Submission of Specimens to CARPHA

Specimens must be routed through the relevant National Reference/ Public Health Laboratory or the Ministry of Health.

The following minimum information must accompany each specimen.

1. **A labelled specimen container with the following information:**
   - Unique Identifier - Name / National Patient ID / National Laboratory Number
   - Date of collection
   - Specimen type

2. **Completed CARPHA Laboratory Investigation form**

   The Laboratory has a web-based Laboratory Information Management System (LIMS). Countries will be trained in its use. Once fully implemented the method of submission of information will change.

2.8 Packing the Specimen for Transport

Refer to Annex 2 – GUIDELINES FOR PREPARATION, PACKING AND SHIPPING SPECIMENS
The requirements stated in this section are in accordance with International Air Transport Association (IATA) and apply to all samples directed to the CARPHA Medical Laboratory from overseas member states. It is the responsibility of the referring site to ensure compliance with these requirements.

2.9 General Information for Transportation of Specimens

Referred specimens must always be prepared, packaged and transported in accordance with current international shipping guidelines and IATA regulations.

1. Send an email to customerservice@carpha.org with the following information –
   - Line listing with itemized information per sample being submitted including patient ID/name, test/s requested, Dates of Onset and Collection
   - Scanned patient forms as per the line listing above
   - Completed Air Way Bill (AWB) and CARICOM Invoice
2. Await feedback on completeness of documents and confirmation to proceed with shipment.
3. Ensure accuracy, legibility and completeness of shipment documents then proceed with shipment.
4. Send an email to customerservice@carpha.org with a notification that the shipment is en-route.
5. Address all packages as follows:

Dr. Joy St. John
Executive Director of CARPHA
The Caribbean Public Health Agency (CARPHA)
16-18 Jamaica Boulevard
Federation Park
NEWTOWN 190324
PORT of SPAIN
TRINIDAD, W.I.

2.10 Specimen Retention Policy

CMML will retain all specimens according to its Specimen Retention and Discard Procedure (This document is available upon request).

2.11 Communication of Results

The CMML issues results via e-mail to previously agreed upon secure addresses.

2.12 Copy Reports

Copy reports will only be issued on receipt of a written request from the requesting source.

2.13 Telephone Results

CMML does not routinely communicate results by telephone.

However, the laboratory does appreciate that in certain circumstances, telephone communication of significant results may be indicated.

The following procedure is to be followed:

NOTE: It is not the policy of the laboratory to report results using the telephone except those classified as critical which are reported to authorized personnel

CARPHA calling Laboratory: The Laboratory Director or designate will contact the requesting laboratory and document the exchange in the Telephone Log.

Laboratory calling CARPHA: ***If person calling is recognized*** as being authorized to receive the results then they can be given over the phone.

If the person calling is not recognized the CARPHA staff will take the contact information and check the SOP- Reporting of Results (SOP-Q05-001) to determine whether the person is authorized to receive the results. Once checked the authorized person is contacted.

NOTE: The verbal release of the result is followed by release of the report in accordance with ***SOP-Q05-001_ Reporting of Results***.

3. SPECIMEN COLLECTION INFORMATION

3.1 Using CARPHA Laboratory Investigation Form - Essential Information

The following essential information must be documented in a legible manner on the CARPHA Laboratory Investigation form & specimen containers (where feasible) sent to the Laboratory:

Note: *The sections in bold are mandatory and omission will delay/ prevent processing and testing of the sample.*

3.2 Laboratory Investigation Forms

The laboratory produces its own request forms that assist in the efficient processing of samples. (Refer to Annex 3)

Additional requirements for submission of TB samples are highlighted in red

SECTION	ESSENTIAL INFORMATION
1. Patient Information	**- Patient demographics i.e., National Patient ID and/or Laboratory Number, Age, D.O.B., Sex, Address, Occupation (where relevant)**
2. Referring Doctor	**- Name of Referral Doctor/ Hospital with contact information**
3. Provisional Diagnosis, Additional Notes	**- Clinical diagnosis** **- Travel history** **Provide any past clinical information on patient including past treatment, treatment failure, relapse or non-compliance.** **Indicate if patient is suspected of pulmonary TB (PTB) or a suspected MDR-TB case.**
4.Food/Animal/Environment Sample Details	**- Specimen type**
5. Case	Type of case e.g. Single/Outbreak/Survey
6. Date of Onset of Illness	**- Date of onset of illness**
7. Outcome	Hospitalization status or death
8. Signs and Symptoms	**Clinical signs and symptoms** **Please check all symptoms exhibited by patient.** **Please include HIV status and any treatment information with start date if known.**
Laboratory Use and Physician/EHO Use	**- LABORATORY INVESTIGATION(S) requested** **- Date of collection of specimen(s)** **- Laboratory results of all tests performed in country re that specimen, including date tested** **- Date specimen referred to CARPHA for testing**

3.3 Using CARPHA LIMS webpage - Essential Information

The essential information that must be entered is indicated on the web-page form.

3.4 Samples from Private Patients

The primary role of the CMML is to provide a reference clinical and diagnostic service to CARPHA Member States (CMS). It currently only accepts samples submitted through the national public health laboratories of its member states

3.5 Specimen Rejection & Factors that may affect Assay Performance

Specimens may be rejected based upon the following criteria however this decision will be made on a case by case basis and the submitting agency will be notified

NOTE: Assay performance may be affected by sample quality: blood specimens that are grossly haemolysed, icteric (high bilirubin content) or lipaemic may not be suitable for testing.

SPECIMEN REJECTION CRITERIA	FURTHER ACTION
• Unlabelled or mislabelled specimen	• Submitting agency will be notified that specimen will be discarded
• Specimens with insufficient volume • Specimen deemed not to be of an acceptable quality for processing at CARPHA	• Submitting agency will be notified and new specimens will be requested by CARPHA • Submitting agency will be notified and specimen will be discarded
Specimens without the following information: • Clinical diagnosis and/or signs and symptoms • Date of onset of symptoms • Date of specimen collection	• The submitting agency will receive notification requesting the required information prior to testing. • Specimens will be appropriately stored awaiting the requested information
• Illegible patient documentation.	• A request for clarification of information will be sent to the submitting agency for urgent resolution
• Inappropriate container or specimen type for the test requested.	• Submitting agency will be notified and new specimens will be requested

3.6 Specimen Collection

Please refer to Annex 1 for specific guidelines

All specimens referred for serological testing assays should:

- Have a minimum volume of 1.0 ml.
- Be maintained at temperatures within the range of 4^0C to -20^0C.
- Be contained in appropriate vials that do not exceed the dimensions of 1.5 cm diameter and 4.7 cm in height e.g. Nunc vial. Only vials with external threads are to be used.

NOTE: Do not send specimens in glass tubes or internally threaded/snap cap tubes

3.6.1 Specimens Submitted Under the Expanded Programme on Immunization (EPI)

Please check with the EPI manager in-country to ensure appropriate recording of samples prior to submission to CARPHA Medical Microbiology Laboratory for the vaccine preventable diseases covered under the EPI elimination or eradication programme (Measles, Mumps, Polio and Rubella)

4. TESTING IN SPECIAL CIRCUMSTANCES

4.1 Supplementary Testing

Please note that on occasion, where indicated, the Laboratory may perform extra tests on a sample: this procedure typically occurs following review of the clinical details and is intended to clarify the significance of initial test results or as part of extended surveillance.

4.2 Additional Test Requests

Please note that CARPHA Laboratory will only perform further examinations (i.e., those not on the original request) on the primary sample as follows:

1. A CARPHA laboratory Investigation form must be completed
2. The time limit for receipt of requests following receipt of the primary sample is as follows:

PCR tests (respiratory)	- 3 days
Sputum and stool	- 3 days
All other samples	- 5 days

5. LABORATORY TESTING SERVICES

This section outlines investigations offered by all the departments of the laboratory.

These guidelines are applicable for routine specimen referrals.

Please note - Potential outbreaks are managed on a case-by-case basis following contact with the Laboratory and Epidemiology divisions for further guidance.

Matrix of Disease/Aetiology Specimen Type/s Diagnostic Method and Turnaround Times

NOTE: Turnaround Times are from the date of receipt by CMML to the date of publishing of the test report

**For instructions on specimen collection and transport conditions, please refer to Annex 2*

Disease/ Aetiologic Agent	Method	Specimen	TAT (Days)
Bacterial Identification and Antimicrobial Susceptibility Testing	Culture →VITEK	Isolate in appropriate media	7
Bordetella pertussis	PCR	Nasopharyngeal or throat swab (collected 0 – 3 weeks from onset of cough)	7
Chikungunya virus	PCR*	Acute serum (collected 1-5 days from onset of symptoms)	7
	IgM ELISA	Convalescent serum (collected 6 - 21 days from onset of symptoms)	14
Cholera	Serotyping and Identification	- Isolate in maintenance media - Stool in Cary Blair media	7
COVID-19 (SARS-CoV-2)	PCR	Nasopharyngeal swab (Preferred) Oropharyngeal swab (Accepted)	1 - 2
COVID-19 (SARS-CoV-2) Gene Sequencing		Please contact CMML prior to submission	14
Dengue virus	PCR*	Acute serum (collected 1 - 4 days from onset of symptoms)	7
	IgM ELISA	Convalescent serum (collected 5 - 15 days from onset of symptoms)	14
Histoplasma Galactomannan	IgM ELISA	- Serum - Urine	14
Influenza A & B <u>Other Respiratory Viruses</u> Adenovirus Human Metapneumovirus Parainfluenza 1 - 3 Rhinovirus Respiratory Syncytial Virus Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Enterovirus-D68	PCR**	Nasopharyngeal swab (NPS) and Oropharyngeal swab (OPS) or other respiratory samples	7

* Samples submitted for Chikungunya, Dengue or Zika that will be tested by PCR are run on a Trioplex panel so there will be results for all three agents

** Samples submitted for respiratory syndromes are analysed using an algorithm in which they are first tested for Influenza

Disease/ Aetiologic Agent	Method	Specimen	TAT (Days)
Leptospirosis	PCR	Whole Blood with anticoagulant (collected > 5 days from onset of symptoms)	7
Malaria Contact CARPHA for discussion before submitting	PCR	Blood	7
Mayaro Virus Contact CARPHA for discussion before submitting	PCR	Serum (collected <7 days from onset of symptoms)	7
Measles Virus Performed under EPI programme Please check with the EPI manager in-country to ensure appropriate recording of samples prior to submission to CARPHA	ELISA IgM	Serum - Acute sample (collected <7 days after onset of rash)	4
	ELISA IgG	Serum - Convalescent sample (collected 10 to 21 days after collection of acute samples)	
	PCR	- NPS (collected <7 days after onset of rash) - Urine (collected <15 days after onset of rash) NOTE: Urine must be paired with NPS	
Meningitis infection (due to Neisseria meningitidis)	Antimicrobial Resistance (AMR) testing	Isolate in BHI with glycerol or on Chocolate agar	7-14
Meningitis/Sepsis (due to Streptococcus pneumoniae or Haemophilus influenzae)	Serotyping (Meningococcus only)		
Mumps Virus Performed under EPI programme Please check with the EPI manager in-country to ensure appropriate recording of samples prior to submission to CARPHA	PCR	Oral swab (collected 5 days from onset of symptoms)	7
	Virus Isolation		14
Norovirus	PCR	Stool	7
Plague - Yersinia pestis CARPHA: to be contacted for discussion if necessary Sent to CARPHA's Reference Laboratory			
Polio Virus Performed under EPI programme Please check with the EPI manager in-country to ensure appropriate recording of samples prior to submission to CARPHA	PCR	Stool (No preservative) CSF	7
	Virus Isolation		14-21

Disease/ Aetiologic Agent	Method	Specimen	TAT (Days)
Non-polio enteroviruses (NPEV)	PCR	Serum, stool, NPS, Eye swabs, oral fluids (Collect specimens <7days days from onset of symptoms)	7
Rabies Virus (in humans) Contact CARPHA for discussion before submitting (Sent to CARPHA's Reference Laboratory)			
Rotavirus Performed in outbreak situations. - Please contact CARPHA for discussion	Ag ELISA	Stool	7
Rubella Virus Performed under EPI programme Please check with the EPI manager in-country to ensure appropriate recording of samples prior to submission to CARPHA	ELISA IgM	Serum - Acute sample (collected <7 days after onset of rash)	4
	ELISA IgG	Serum - Convalescent sample (collected 10 to 21 days after collection of acute sample)	
	PCR	- NPS (collected <7 days after onset of rash) - Urine (collected <15 days after onset of rash) NOTE: Urine must be paired with NPS	
Salmonellosis	Serotyping	Isolate in Maintenance media	7 - 14
Shigellosis	Serotyping	Isolate in Maintenance media	14
Tuberculosis (Pulmonary & Extra-pulmonary) Selected specimens sent to CARPHA's Reference Laboratory	Identification and Drug Sensitivity Testing (PCR_GeneXpert)	Sputum, Sputum Sediment,	4
Typhoid and paratyphoid fever	- Identification - Serotyping	Isolate in maintenance media	7
West Nile Virus Contact CARPHA for discussion before submitting	PCR	CSF/Serum, (collected 7 days after onset of symptoms)	7
Yellow Fever Virus Contact CARPHA for discussion before submitting	PCR	Single serum	7
Zika Virus Zika IgM not done during Dengue outbreaks.	PCR*	- Serum	7
	IgM ELISA	- CSF, Urine, Amniotic fluid NOTE: All of these must be paired with serum sample	14

* Samples submitted for Chikungunya, Dengue or Zika that will be tested by PCR are run on a Trioplex panel so there will be results for all three agents

5.1 Specialized Test Panels

- Performed on The BioFire® FilmArray® system
- CARPHA must be contacted before submitting samples to be tested by this method as a special Laboratory Investigation must be completed
- Turnaround Time is 2 days

MENINGITIS ENCEPHALITIS PANEL	**RESPIRATORY PANEL**	**GASTROINTESTINAL PANEL**
Sample: 0.2 mL of CSF	***Sample:*** 0.3 mL of nasopharyngeal swab stored in transport medium	***Sample:*** 0.2 mL stool in Cary Blair transport medium
BACTERIA		
• *Escherichia coli* K1 • *Haemophilus influenzae* • *Listeria monocytogenes* • *Neisseria meningitidis* • *Streptococcus agalactiae* • *Streptococcus pneumoniae*	• *Bordetella pertussis* • *Bordetella parapertussis* • *Chlamydophila pneumoniae* • *Mycoplasma pneumoniae*	• *Campylobacter (jejuni, coli, and upsaliensis)* • *Clostridium difficile* (toxin A/B) • *Plesiomonas shigelloides* • *Salmonella* • *Yersinia enterocolitica* • *Vibrio (parahaemolyticus, vulnificus, and cholerae)* **DIARRHEAGENIC** ***E. coli / Shigella*** • *Enteroaggregative E. coli* (EAEC) • *Enteropathogenic E. coli* (EPEC) • *Enterotoxigenic E. coli* (ETEC) *lt/st* • *Shiga-like toxin-producing E.coli* (STEC) *stx1/stx2* • *E. coli* O157 • *Shigella/Enteroinvasive E. coli* (EIEC)

MENINGITIS ENCEPHALITIS PANEL	**RESPIRATORY PANEL**	**GASTROINTESTINAL PANEL**
Sample: 0.2 mL of CSF	***Sample:*** 0.3 mL of nasopharyngeal swab stored in transport medium	***Sample:*** 0.2 mL stool in Cary Blair transport medium
VIRUSES		
• Cytomegalovirus (CMV) • Enterovirus (EV) • Herpes simplex virus 1 (HSV-1) • Herpes simplex virus 2 (HSV-2) • Human herpesvirus 6 (HHV-6) • Human parechovirus (HPeV) • Varicella zoster virus (VZV)	• Adenovirus • Coronavirus 229E • Coronavirus HKU1 • Coronavirus OC43 • Coronavirus NL63 • Human Metapneumovirus • Human Rhinovirus/Enterovirus • Influenza A • Middle East Respiratory Syncial CoronaVirus (Mers-CoV) • Influenza A/H1 • Influenza A/H1-2009 • Influenza A/H3 • Influenza B • Parainfluenza (1 – 4) • RSV	• Adenovirus F40/41 • Astrovirus • Norovirus GI/GII • Rotavirus A • Sapovirus (I, II, IV, and V)
YEASTS		
• *Cryptococcus neoformans/gattii*		
PARASITES		
		• *Cryptosporidium* • *Cyclospora cayetanensis* • *Entamoeba histolytica* • *Giardia lamblia*

5.2 Entomology Specimen Referrals

The following table lists information relevant to the collection and testing of specimens for Entomology investigations.

Note: All specimens sent to the Entomological unit must be accompanied by the following information:

- Method of specimen collection
- Date and time of specimen collection
- Name of specimen collector
- Country and location
- Type of habitat (from which collection was made)

Test	Specimen recommended	Notes	TAT (Days)
Insecticide resistance	*Aedes aegypti* mosquito eggs	On removal from ovitraps, the paper containing eggs should be placed in a container lined with damp paper towels. After 2-3 days, the paper should be removed from the container and left to air-dry for 1-2 days. Fold paper in two with the side containing the eggs on the inside.	42
Mosquito identification (larval specimen)	Specimen collected and killed in hot but NOT boiling water	Specimen should be sent in vials containing 70% ethanol.	7
Mosquito identification (adult specimen)	Specimen killed with chloroform, ether, carbon dioxide or rapidly frozen in a domestic refrigerator	The specimen should be packaged and sent in a small vial or cardboard box lined with grease-proof paper or paper towels.	7
Arbovirus detection in mosquitoes (Mosquito-based Surveillance)	Adults sorted by species Mosquito Eggs	Demonstration of the presence of Dengue viruses (1-4), Chikungunya virus, Zika virus, Western Equine Encephalitis virus, Yellow Fever virus, Mayaro, Ilheus, Bussuquara virus, Usutu virus, Spondweni virus, O'nyong nyong virus, Eastern Equine encephalitis virus, Semliki forest virus or Rocio virus in mosquitoes.	7

ANNEX 1: SPECIMEN COLLECTION GUIDELINES

PURPOSE

To describe methods for the collection and transport of the following specimens

A. Blood

- Venous Blood Samples
- Serum from Blood

B. Respiratory Tract Samples

- Upper Respiratory Tract Specimens
- Throat Swab
- Nasopharyngeal Swab (NPS)
- Aspirates
- Lower Respiratory Tract Specimens

C. Cerebrospinal Fluid

D. Faecal Specimens

- Stool Specimen
- Rectal Swab from Infants

E. Eye Specimen

F. Samples from Skin Lesions

- Vesicular or Vesiculo-Pustular Rash

G. Urine Specimens

H. Sputum Specimens for TB Testing

A. COLLECTION OF BLOOD SPECIMENS

Blood and separated serum are the most common specimens taken to investigate the aetiology of communicable diseases. Venous blood can be used for isolation and identification of pathogens using sub-culture and inoculation techniques. Blood is also separated into serum for the detection of genetic material (e.g. using the polymerase chain reaction), specific antibodies, antigens, or toxins (e.g. by ELISA). For the processing of most specimens for diagnosis of viral pathogens, serum is preferable to un-separated blood except where otherwise directed. When specific antibodies are being assayed, it is often useful to collect paired sera, i.e. an acute sample taken at the onset of illness and a convalescent sample collected one to four weeks later. Blood can also be collected by finger prick for the preparation of slides for microscopy or for absorption onto special filter paper discs for analysis. Whenever possible, blood specimens for culture should be taken before antibiotics are administered to the patient.

NOTE: Collect acute and convalescent blood for serology between 2 and 4 weeks between acute and convalescent specimens

A.1.0 VENOUS BLOOD SAMPLES

MATERIALS

SUPPLIES	REAGENTS
• Disposable latex or vinyl gloves • Tourniquet, Vacutainer, Monovette, or similar vacuum blood collection devices, or disposable syringes and needles • Vacutainer, blood culture bottles (50ml for adults, 25ml for children) with appropriate media • Swabs, gauze pads, band-aid • Labels and indelible marker pen.	• Skin disinfection: 70% alcohol (isopropyl alcohol, ethanol) or 10% povidone, iodine,

A.2.0 SEPARATION AND COLLECTION OF SERUM FROM BLOOD

MATERIALS

EQUIPMENT	SUPPLIES	REAGENTS
• Centrifuge	• Disposable latex or vinyl gloves • Tourniquet, Vacutainer, Monovette, or similar vacuum blood collection devices, or disposable syringes and needles • Vacutainer, blood culture bottles (50ml for adults, 25ml for children) with appropriate media • Swabs, gauze pads, band-aid • Labels and indelible marker pen. • Sterile Pasteur pipettes and bulb, or soft, disposable transfer pipettes (pastettes). The latter are easy to handle and dispose of in the field laboratory, • Sterile screw-cap vials	• Skin disinfection: 70% alcohol (isopropyl alcohol, ethanol) or 10% povidone, iodine,

PROCEDURE

STEP	ACTION
1	• Using the materials (above) and methods described in Section A1.0, draw 10ml of venous blood and transfer to a screw cap tube without anti-coagulant. • Alternatively, blood may be collected directly into a proprietary collection and transport tube (e.g., Vacutainer, Monovette, etc.).
2	• Allow the blood specimen to clot for 30 minutes at ambient temperature • The specimen should be centrifuged at the laboratory at low speed (1000g for 10 minutes) to remove residual blood cells. • When serum separation is performed in a field laboratory, proper safety precautions should be taken. • Ensure that the centrifuge is in good condition and that the tubes are properly closed and balanced to avoid breakage and spilling. • If viral haemorrhagic fever is strongly suspected, samples should only be processed in properly equipped, specialized laboratories - Under BSL2+ or BSL3 conditions, using Biosafety Class II A2/B cabinets • Discuss with the laboratory personnel whether a separation gel blood tube (see Note) would be acceptable in this case.
3.	• Separate the serum aseptically from the clot using a sterile Pasteur pipette and bulb or soft, disposable transfer pipette. • Transfer to a screw cap vial. Secure the cap tightly.
4.	• If a centrifuge is not available and there will be a delay before samples can be transported to a laboratory, serum may still be separated carefully from the retracted clot using a disposable transfer pipette. • Allow 4-6 hours to elapse after taking the blood sample to ensure adequate clot retraction. • Using the transfer pipette, remove the clear yellow serum whilst taking care to keep the tip as far as possible from the clot, and avoid agitating the blood tube during the removal process. (This may be easier if a separation gel collection tube has been used). • Transfer to plastic screw-cap vial and secure cap tightly.
5.	• Label the vial with the same patient details that appear on the blood sample tube.

NOTE: *In some instances, it may be acceptable to use a special blood tube containing a separation gel, which encourages separation of serum from clot. In this case, the centrifugation step is eliminated. This has the advantage of ease and safety of specimen processing under field conditions. However, it is important to check with the laboratory in advance to ensure that these devices are appropriate for your particular investigation.*

HANDLING AND TRANSPORT

- If serum will be required for testing, separation from blood should take place as soon as possible, preferably within 2 - 3 hours at ambient temperature.
- If the specimen will not reach a laboratory for processing within 24 hours, serum must, be separated from blood prior to transportation.
- Sera may be stored at 4-8^{o} for up to 4 days. If serological testing is to be delayed for a longer period, serum samples may be frozen.
- If separation on site is not possible, or is inadvisable for safety reasons, the blood sample should be stored at 4-8^{o}C.
- Protect such un-separated samples from excessive vibrations while transporting.
- Un-separated blood samples should not be frozen.

B. COLLECTION OF RESPIRATORY TRACT SAMPLES

Preferably specimens should be taken within the first 3 days after onset of symptoms for most respiratory infections

Specimens are collected from the upper or lower respiratory tract, depending on the site of infection. Upper respiratory tract pathogens (viral and bacterial) are found in throat nasopharyngeal specimens. Lower respiratory tract pathogens are found in sputum specimens.

MATERIALS

SUPPLIES	REAGENTS
• Dacron and cotton swabs • Tongue depressor • Flexible wire calcium alginate tipped swab (for suspected pertussis) • Nasal speculum (for suspected pertussis) – not essential • Suction apparatus or 20-50ml syringe • Sterile screw-cap tubes, and wide mouthed clean sterile jars (minimum volume 25 ml)	• Transport media – bacterial and viral

B.1.0 UPPER RESPIRATORY TRACT SPECIMENS

B.1.1 THROAT SWAB

PROCEDURE

STEP	ACTION
1	• Hold the tongue down with the depressor. • Use a strong light source to locate areas of inflammation and exudate in the posterior pharynx and the tonsillar region of the throat behind the uvula
2	• Rub the area back and forth with a Dacron or calcium alginate swab. • Withdraw the swab without touching cheeks, teeth or gums and insert into a screw-cap vial containing viral or bacterial transport medium.
3	• Break off the top part of the stick without touching the tube and tighten the screw cap firmly
4	• Label the specimen containers
5	• Complete the laboratory request form.

B.1.2 NASOPHARYNGEAL SWAB

PROCEDURE

STEP	ACTION
1	Seat the patient comfortably, tilt the head back and insert a flexible swab beneath the inferior turbinate of either nostril or leave in place for a few seconds and move the swab upwards into the nasopharyngeal space.
2	Rotate the swab on the nasopharyngeal membrane a few times; slowly withdraw with a rotating motion against the mucosal surface of the nostril.
3	Remove the swab carefully and insert it into a screw-cap tube containing transport medium.
4	Repeat the procedure in the other nostril using a new sterile swab
5	Label the vial with patient's name type of specimen and date of collection

B.1.3 ASPIRATES

PROCEDURE

STEP	ACTION
1	• Nasopharyngeal secretions are aspirated through a catheter connected to a mucus trap and fitted to a vacuum source.
2	• The nasal aspirates are collected by introducing a few ml of saline into the nose with a syringe fitted with a fine tubing or catheter.
3	• The catheter is inserted into a nostril parallel to the palate. • The vacuum is then applied, and the catheter is slowly withdrawn with a rotation motion.
4	• Mucus from the other nostril is collected with the same catheter in a similar manner.
5	• After mucus has been collected from both nostrils, the catheter is flushed into a screw cap vial with 3 ml viral transport media
6	• Label the vial with patient's name type of specimen and date of collection

B.2.0 LOWER RESPIRATORY TRACT SPECIMENS

B.2.1 SPUTUM

PROCEDURE

STEP	ACTION
1	• Instruct patient to take a deep breath and cough up sputum directly into a wide mouth sterile container. • Avoid saliva or postnasal discharge. • Minimum volume should be about 1 ml
2	• Label the specimen containers
3	• Complete the laboratory request forms

HANDLING AND TRANSPORT

- All respiratory specimens except sputum are transported in appropriate bacterial/viral media
- Transport as quickly as possible to the laboratory to reduce overgrowth by commensal oral flora.
- For transit periods up to 24 hours, transport bacterial specimens at ambient temperature and viruses at 4-8^{o}C in appropriate media.

C. COLLECTION OF CEREBROSPINAL FLUID

CSF is used in the diagnosis of viral, bacterial, parasitic and fungal meningitis
The specimen must be taken by a physician or a person experienced in the procedure.

PROCEDURE

- ***As only specially trained personnel should be involved in the collection of CSF samples, the method is not described in this document.***
- CSF is collected directly into the separate screw-cap tubes.
- If the samples will not be promptly transported, separate tubes should be collected for bacterial and viral processing.

HANDLING AND TRANSPORT

- In general, specimens should be delivered to the laboratory and processed as soon as possible.
- CSF specimens for bacteriology are transported at ambient temperature, generally with transport media.
- Depending upon the test method used samples may or may not require refrigeration (many of the relevant pathogens do not survive well at low temperatures). Specimens for PCR testing can however be refrigerated. Please refer to CARPHA Medical Microbiology laboratory for additional information.
- CSF specimens for virology do not need transport medium. They may be transported at 4-8^{o}C for up to 48 hours, or at -70^{o}C for longer periods.

D. COLLECTION OF FAECAL SAMPLES

Stool specimens are most useful for microbiological diagnosis if collected soon after onset of diarrhoea (for viruses < 48 hours for bacteria < 4 days), and preferably before the initiation of antibiotic therapy. If required, two or three specimens may be collected on separate days for bacterial diarrhoea. Stool is the preferred specimen for culture of bacterial, viral and parasitic diarrhoeal pathogens. Rectal swabs showing faeces may also be used from infants. In general, rectal swabs are not recommended for the diagnosis of viruses.

MATERIALS

SUPPLIES	REAGENTS
• Clean, dry, leak-proof screw cap container and tape.	• Appropriate bacterial transport media for transport of rectal swabs from infants

PROCEDURE

A. Method for collecting a stool specimen:

STEP	ACTION
1	Collect freshly passed stool, 5ml liquid or 5g solid (pea-size), in a container.
2	Label the container

B. Method of collecting a rectal swab from infants:

STEP	ACTION
1	Moisten a swab in sterile saline
2	Insert that swab tip just past the anal sphincter and rotate gently
3	Withdraw the swab and examine to ensure that the cotton top is stained with faeces
4	Place the swab in sterile tube/container containing the appropriate bacterial or viral transport medium.
5	Break off the top part of the stick without touching the tube and tighten the screw cap firmly.
6	Label the vial with patient's name type of specimen and date of collection

HANDLING AND TRANSPORT

- Stool specimens should be transported at 4-8^{o}C. Bacterial yields may fall significantly if specimens are not processed within 1-2 days of collection. *Shigella* is particularly sensitive to elevated temperatures.
- Transport at ambient temperature in containers sealed in plastic bags.

E. COLLECTION OF EYE SPECIMENS

Conjunctival and corneal swabs and smears are the usual specimens collected to diagnose acute bacterial or viral (kerato) conjunctivitis. Label all specimens as conjunctival or corneal and indicate whether the specimen was taken from the left or right eye. Strict aseptic technique is essential when collecting and processing these specimens. All medicines and droppers that come in contact with patients should be discarded.

While corneal scrapings may occasionally prove useful in improving the utility of corneal specimens for diagnosis of some infections, these are not generally infections which are epidemic-prone. Corneal scrapings must only be collected by an ophthalmologist or other trained persons. For these reasons, instructions for taking corneal scrapings will not be given here.

PROCEDURE

- ***As only specially trained personnel should be involved in the collection of these samples, the method is not described in this document.***

HANDLING AND TRANSPORT

- Specimens for detection of bacterial pathogens are transported at ambient temperature in appropriate bacterial transport medium
- Specimens for viral detection are transported at 4-8^{o}C in viral transport medium. Swabs in viral transport medium may also be frozen in liquid nitrogen.

F. COLLECTING OF SAMPLES FROM FOR SKIN LESIONS

In cases of indeterminate diagnoses, unusual presentations, and some rare conditions, collection of specimens from rashes and/or skin lesions may be necessary. In the case of vesicular rashes, specimens for microscopy and culture are taken directly from vesicles. In other exanthemata (macular and/or papular), the diagnosis may be more readily established from alternative specimens (e.g. blood cultures, serology). In suspected cutaneous anthrax or bubonic plague, specimens from the skin lesions (scars and buboes, respectively) and blood cultures may be taken.

MATERIALS

SUPPLIES	REAGENTS
• Sterile swabs and appropriate transport media • Sterile screw cap vials • Sterile lancets or needles (for piercing of vesicles). • Syringe with wide-bore needle (for aspiration of abscesses/buboes) • Wide mouth screw-cap containers (for biopsy specimens) • Glass slides and slide boxes	• Sterile saline

PROCEDURE

STEP	ACTION
1	HSV-infected cells are present in greatest numbers in the base of the vesicles or ulcers that are useful for direct HSV-1 and HSV-2 antigen detection.
2	Clean the fresh mature vesicle or ulcer with 70% ethanol.
3	Using a tuberculin syringe fitted with 26 to 27-gauge needle, insert the needle, bevel edge up, into the base of the vesicle.
4	Aspirate fluid and immediately, carefully inject the fluid into a vial containing 1- 2ml viral transport media; rinse once.
5	Lift the membrane of the vesicle and using a sterile Dacron swab, firmly rub at the base of the ulcer *(Calcium alginate swabs cannot be used).*
6	Immediately place the swab in the vial containing viral transport media.

HANDLING AND TRANSPORT

Specimens for bacteriological analysis should be transported in Stuart's or Amies medium. Swabs for suspected viral pathogens should be transported in virus transport medium. Other specimens should be handled as described in the relevant section.

If processing takes longer than 2 hours, bacteriology specimens can be maintained at ambient temperature for 24 hours. Specimens for virus isolation may be refrigerated at 4-8^{o}C and transported to the laboratory as rapidly as possible. In some instances, the outbreak investigation team may bring liquid nitrogen for specimen preservation. If this is the case, follow the instructions of the experienced laboratorian as to appropriate use. If there are any questions regarding handling and transport, check with the laboratory which will be receiving the specimens. In any outbreak investigation, it should be considered essential to consult the receiving laboratory about the handling of most specimen types before setting out into the field.

G. COLLECTION OF URINE SAMPLES

MATERIALS

SUPPLIES	REAGENTS
• Sterile plastic cup with lid (50ml or more) • Clean, screw-top specimen transport containers ("universal" containers are often used) • Gauze pads	• Soap and clean water (or normal saline) if possible

PROCEDURE

Collection of Mid-Stream Urine (MSU) Sample

STEP	ACTION
1	• Give the patient clear instructions to pass urine for a few seconds, and then hold the cup in the urine stream for a few seconds to catch a mid-stream sample. This should decrease the risk of contamination from organisms living in the urethra
2	• To decrease the risk of contamination from skin organisms, the patient should be directed to avoid touching the inside rim of the plastic cup with the skin of the hands, legs or external genitalia. • Tighten the cap firmly when finished.
3	• For hospitalized or debilitated patients, it may be necessary to wash the external genitalia with soapy water to reduce the risk of contamination. If soap and clean water are not available, the area may be rinsed with normal saline. • Dry the area thoroughly with gauze pads before collecting the urine.
4	• Urine collection bags may be necessary for infants. If used, transfer urine from the urine bag to specimen containers as soon as possible to prevent contamination with skin bacteria. Use a disposable transfer pipette to transfer the urine.
5	• Label the specimen containers

Processing Urine for Viral Isolation

STEP	ACTION
1	• Centrifuge the specimen at 1,500 rpm for 5 min.
2	• Re-suspend the sediment in 0.5 to 2ml of viral transport media
3	• Label the vial with patient's name type of specimen and date of collection**.**
4	• Refrigerate at 4-8 ºC and send as soon as possible to CARPHA or store at -70ºC if shipping is delayed.

HANDLING AND TRANSPORT

- Transport to the laboratory within 2-3 hours of collection. If this is not possible, do not freeze but keep the specimen refrigerated at 4-8ºC.
- Keeping the specimen refrigerated will decrease the risk of overgrowth of contaminating organisms
- Ensure that transport containers are leak-proof and tightly sealed.

H. COLLECTION OF TB SAMPLES

CARPHA performs a PCR assay using the Xpert MTB/RIF test (for use with the Cepheid GeneXpert® System). This is a semi-quantitative nested real-time PCR *in-vitro* diagnostic test for:

1) the detection of *Mycobacterium tuberculosis* complex DNA in extrapulmonary as well as sputum samples or concentrated sediments prepared from induced or expectorated sputa that are either acid-fast bacilli (AFB) smear positive or negative; and
2) the detection of rifampicin resistance associated mutations of the *rpoB* gene in samples from patients at risk for rifampicin resistance.

The MTB/RIF test is intended for use with specimens from untreated patients for whom there is clinical suspicion of tuberculosis (TB). Use of Xpert MTB/RIF for detection of *M. tuberculosis* (MTB) or determination of rifampicin susceptibility has not been validated for patients who are receiving treatment for tuberculosis.

STEP	ACTION
1	• Select a sample container.
2	• Instruct the patient to rinse his or her mouth with plain water twice before bringing up the sputum.
3	• Open the lid of the sample container.
4	• Have the patient inhale deeply 2-3 times. • Cough deeply from the chest, and then spit into the sputum container by bringing it closer to the mouth. • Care should be taken to avoid spoiling or soiling the soiling the outside of the container. • Secure the lid on the collection device.
5	• Make sure the sputum sample is of good quality. • Check the sample for food particles, blood or substances that may inhibit PCR process. • The sample volume should be at least 1ml.

HANDLING AND TRANSPORT

- **Treat all sputum samples as potentially infectious material and use leak proof containers for sample collection and transportation.**
- Specimens should be held at 2°C- 8°C (The sample remains viable at this temperature for 4-10 days.)
- Transport the sample to CARPHA at (2°C- 8°C)

ANNEX 2: GUIDELINES FOR PREPARATION, PACKING AND SHIPPING SPECIMENS

Shipper's Responsibilities for Preparation of Accompanying Documentation

- Use the proper form/s (Air Way Bill, CARICOM Invoice, CARPHA Shipper Declaration, permits if applicable)
- Fill out the form/s accurately, completely and legibly
- Comply with carriers' requirements for filling out the form/s (handwritten vs. typed)
- Sign the form/s (signature must be handwritten)
- Modifications and alterations must be signed by the shipper (best practice is to complete a new form if a correction is needed)
- The form/s must be printed in colour on white paper (e.g. for the Dangerous Goods Declaration Form the left and right diagonal striations must be printed in red)
- The form must be completed in English
- The shipper must complete at least **three copies**. One copy is for the shipper and the remaining copies are for the carrier. Check with the carrier to ensure correct number of copies available.

1. Categorization of Infectious Substances

The majority of specimens to be sent to CMML may be categorized as Category B, Biological Substance (Un number UN3373). For further information on how to properly categorize and prepare specimens please refer to the WHO Guidance on Regulations for the Transport of Infectious ..... Substances 2019 – 2020. To download, please click on the link below - .....
https://apps.who.int/iris/bitstream/handle/10665/325884/WHO-WHE-CPI-2019.20-eng.pdf?ua=1

2. Packaging and Shipping Instructions

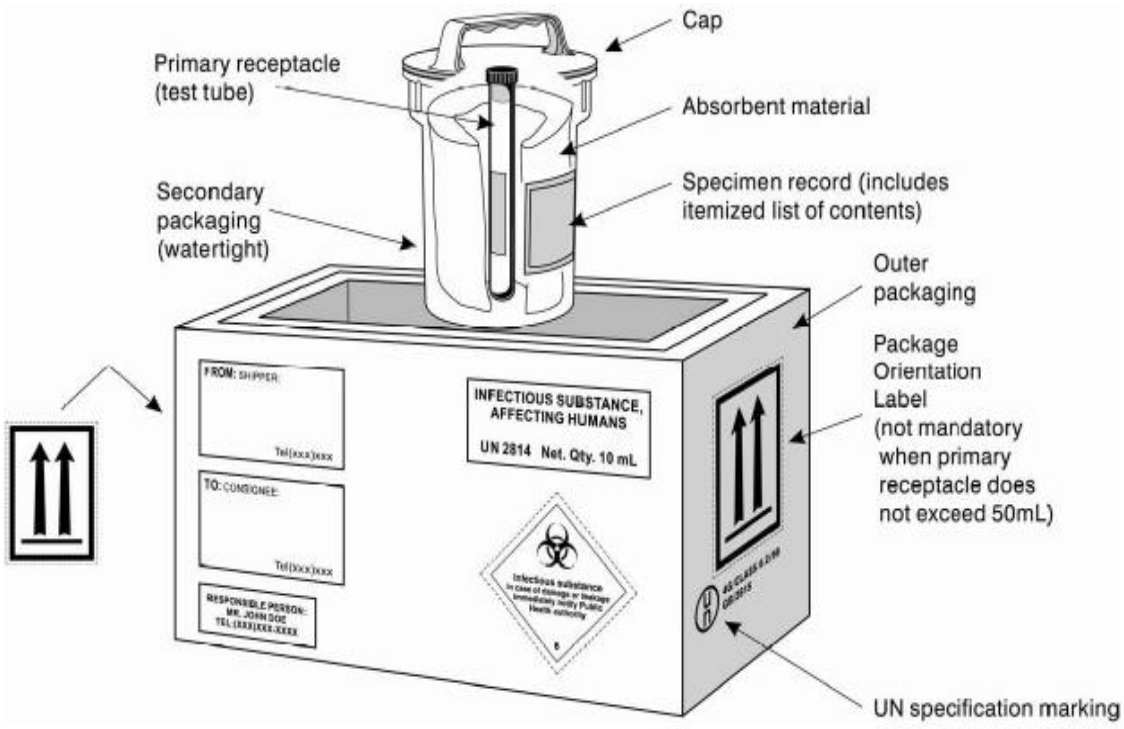
Shippers of infectious substances shall ensure that packages are prepared utilizing the **Triple Packaging System.** This packaging system is used for the transportation of all infectious substances in such a manner that they reach their destination in good condition and present no hazard to persons or animals during transport.

2.1 Shipping Category A Infectious Substances

Infectious substances which fall under Category A can only be transported in packaging which meets the **UN Class 6.2 specifications** and in accordance with **Packaging Instruction (PI) 620** of the IATA DGR**.**

TABLE 2: Requirements for Packaging and Shipping Category A Substances

PACKAGING REQUIREMENTS	MARKINGS AND LABELS	DOCUMENTATION
• Primary container is leakproof • Secondary container is leakproof • Outer container is rigid • UN specification marking: Pressure tested at 95kPa Drop tested from 9m Puncture tested at 7kg Stacking tested • **Shipper must be trained and certified**	***Markings –*** • Shipper's name and address • Receiver's name and address • Name and telephone of responsible person (who is available 24 hours a day until shipment arrives) • Proper Shipping Name and UN Number • UN Specification Marking ***Labels –*** • Infectious substance label • Package orientation label (*only used when primary container exceeds 50ml*)	• Airway Bill • Dangerous Goods Declaration Form **Must be signed by the shipper** • **Import/Export permit (as applicable)** • CARICOM Invoice



Example of the packaging and labelling of a Category A, Infectious Substance (Reference Guidance on regulations for the transport of infectious substances 2017-2018. Geneva, Switzerland: World Health Organization; 2017**)**

2.2 Shipping Category B Infectious Substances

Most specimens (primary specimens) sent to CMML can be categorized with the Proper Shipping Name Category B, Biological Substance. The shipper must comply fully with the requirements of **Packaging Instruction PI 650.**

TABLE 3: Requirements for Packaging and Shipping Category B Substances

PACKAGING REQUIREMENTS	MARKINGS AND LABELS	DOCUMENTATION
• Primary container is leakproof • Secondary container is leakproof • Outer container is rigid • Either Primary or Secondary container is Pressure tested at 95kPa • Drop tested from 1.2 m	***Markings –*** • Shipper's name and address • Receiver's name and address • Proper Shipping Name and UN Number ***Labels –*** • None required (unless shipping with Dry Ice)	• Airway Bill • CARICOM Invoice • **Import/Export permit (as applicable)** *Note: Dangerous Goods Declaration Form is not required, even when shipping with* Dry Ice

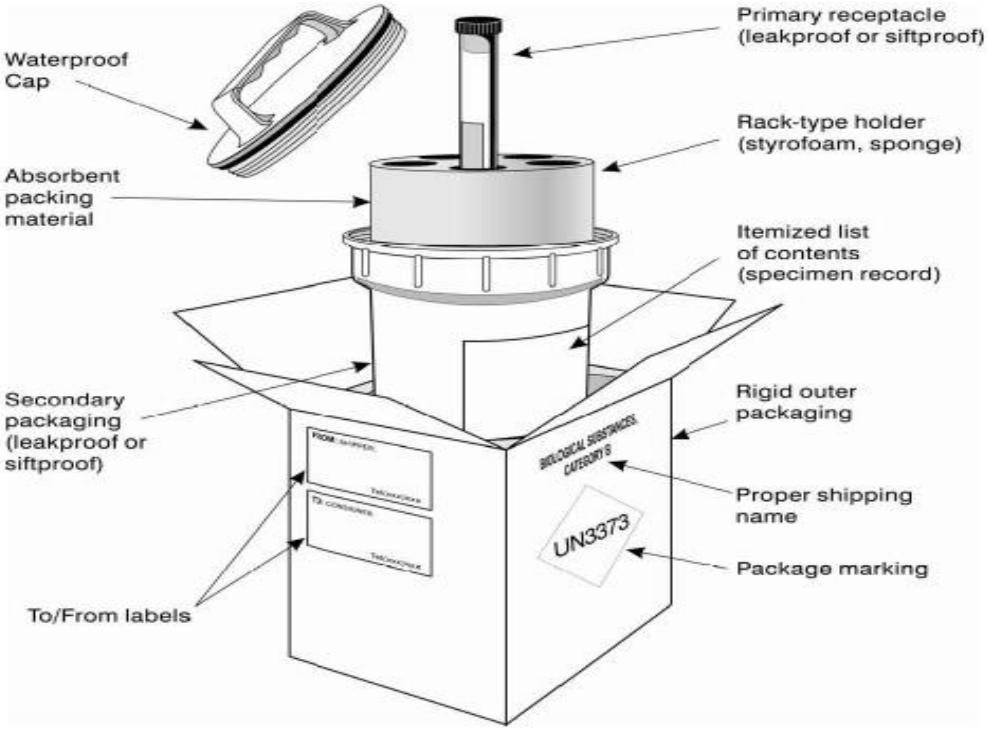


Figure 2: Example of Triple Packaging System for the packaging and labelling of Category B, Infectious Substance (Reference Guidance on regulations for the transport of infectious substances 2017-2018. Geneva, Switzerland: World Health Organization; 2017**)**

Other: Shipping Exempt Substances

An element of professional judgment is required to determine if a substance is exempt. That judgment should be based on the known medical history, symptoms and individual circumstances of the source, human or animal, and endemic local conditions.

TABLE 4: Requirements for Packaging and Shipping Exempt Substances

PACKAGING REQUIREMENTS	MARKINGS AND LABELS	DOCUMENTATION
• Primary container is leak-proof • Secondary container is leak-proof • Outer container is of adequate strength for its capacity, mass and intended use, and with at least one surface having minimum dimensions of 100 mm × 100 m	***Markings –*** • Shipper's name and address • Receiver's name and address • Package marked with "Exempt human specimen" or "Exempt animal specimen" as applicable ***Labels –*** None required (unless shipping with Dry Ice)	• Airway Bill • CARICOM Invoice *Note: Dangerous Goods Declaration Form is not required, even when shipping with* Dry Ice

ANNEX 3: Laboratory Investigation Form (See next page)
ANNEX 4: CARICOM Invoice
ANNEX 5: Customer Feedback Form (Last page)

1. Patient Information

Last Name |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

First Name |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

Patient ID |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|

Gender ☐ M ☐ F Age |_|_|_ ☐years ☐months

Date of Birth |_|_| |_|_| |_|_|_|_|

Street _##_ - _____

City/Parish _____

_____ County _____

Postal Code _____ Tel: _____

2. Referring Doctor

Name: _____

Reporting Address:_____

_____

3. Provisional Diagnosis, Additional Notes[1]

[1] information on risk factors, travel history, lab findings, etc.

4. Food/Animal/Environment Sample Details *(if relevant)*

Specimen ID_____

[4]Name of food/env sample_____

Where specimen(s) collected_____

☐ Outbreak ☐ Traceback ☐ Survey ☐ Other.

5. Case/Specimen Status

☐ Single case ☐ Outbreak ☐ Survey ☐ Unknown

6. Date of Onset of Illness

|_|_| |_|_| |_|_| |_|_|

7. Outcome

Hospitalized? ☐ Y ☐ N ☐ DK

Died? ☐ Y ☐ N ☐ DK

8. Signs and Symptoms

☐ Fever → Temp: _____ → Onset: _

☐ Rash → Location: _____ → Onset: _ _

☐ Pain → Location _____

☐ Haemorrhagic symptoms → describe _____

☐ Altered mental state
☐ Chills
☐ Circulatory collapse
☐ Conjunctivitis

Chronic Conditions
☐ Autoimmune disease
☐ Connective tissue disorder
☐ Lymphoproliferative disor
☐ Transplant recipient/donor
☐ Immunocompromised
☐ Other → specify

☐ Convulsions
☐ Coryza
☐ Cough
☐ Diarrhoea, Acute
☐ Diarrhoea, Chronic
☐ Failure to thrive
☐ Genital discharge
☐ Genital lesions
☐ Hepatomegaly
☐ HIV +ve

☐ Jaundice
☐ Neck stiffness
☐ Lymphadenopathy
☐ Kernig's sign
☐ Paralysis
☐ Respiratory, Upper
☐ Respiratory, Lower
☐ Vomiting
☐ Weakness of limbs
☐ Weight loss

9. Syndromic Classification

☐ AFP
☐ Gastroenteritis
☐ Fever & Haemorrhagic
☐ Fever (undifferentiated)
☐ Fever & Rash
☐ Fever & Respiratory or Acute Respiratory Infection
☐ Fever & Neurologic

10. Immunization History

EPI No: _____

BCG: ☐ Y ☐ N dd_ _mm_ _yy_ MR: ☐ Y ☐ N dd_ _mm_ _yy_

DPT: ☐ Y ☐ N dd_ _mm_ _yy_ Polio: ☐ Y ☐ N dd_ _mm_ _yy_

HBV: ☐ Y ☐ N dd_ _mm_ _yy_ YF: ☐ Y ☐ N dd_ _mm_ _yy

MMR: ☐ Y ☐ N dd_ _mm_ _yy_ Other‡: ☐ Y ☐ N dd_ _mm_ _yy_

‡specify _____

Physician / EHO Use

***Serum; EDTA blood; Blood smear; Sputum; CSF; Swab; Urine; Stool; Tissue; Plasma (PPT); Food; Water; Animal; Environment; if other specify**

	Specimen 1	Specimen 2	Specimen 3
Type of Specimen			
Date Specimen Collected			
Lab Test(s) Requested			

Laboratory Use

Date Received at Nat Lab			
Nat Lab Specimen ID			
Test(s) Performed			
Date(s) Tested			
Laboratory diagnosis			
Date Referred to CARPHA			
Name of Testing Lab			

Approved by (Testing. Lab): _____ Date: _____

CARPHA USE: Specimen ID (1)_____ (2) _____ (3) _____

CARICOM (CARIBBEAN COMMON MARKET) INVOICE

<table>
<tr><td colspan="2" rowspan="2">SELLER (Name, Full address, Country)</td><td colspan="3">INVOICE DATE AND NO.
Date:
Airway Bill #:</td><td>CUSTOMER ORDER NO.</td></tr>
<tr><td colspan="4">OTHER REFERENCES</td></tr>
<tr><td colspan="2" rowspan="2">CONSIGNEE (Name, Full address, Country)
DR. JOY ST. JOHN
EXECUTIVE DIRECTOR
CARIBBEAN PUBLIC HEALTH AGENCY
16 – 18 JAMAICA BLVD.
FEDERATION PARK
PORT-OF SPAIN
TRINIDAD, W.I.
TEL: 1-868-622-4261
FAX: 1-868-628-9302</td><td colspan="4">BUYER (If other than consignee)</td></tr>
<tr><td colspan="4">PRESENTING BANK</td></tr>
<tr><td colspan="2" rowspan="2">PORT OF LADING</td><td colspan="4">COUNTRY OF ORIGIN OF GOODS</td></tr>
<tr><td colspan="4" rowspan="2">TERMS AND CONDITIONS OF DELIVERY AND PAYMENT</td></tr>
<tr><td>COUNTRY OF FINAL DESTINATION
Trinidad</td><td>SHIP/ AIR/ ETC</td><td colspan="4">CURRENCY OF SALE</td></tr>
<tr><td colspan="2" rowspan="2">OTHER TRANSPORT INFORMATION</td><td colspan="2" rowspan="2">MARKS AND NUMBERS
(Description of goods)</td><td colspan="2">GROSS WEIGHT KG.</td></tr>
<tr><td colspan="2">CUBE
M</td></tr>
<tr><td colspan="2">NO. & IGNO SPECIFICATION OF COMMODITIES OF PACKAGE (IN CODE AND/OR FULL)

NO COMMERCIAL VALUE</td><td>AMOUNT</td><td>QUAN</td><td>UNIT PRICE</td><td>AMOUNT</td></tr>
<tr><td colspan="2" rowspan="6">IT IS HEREBY CERTIFIED THAT THIS INVOICE SHOWS THE ACTUAL PRICE OF THE GOODS DESCRIBED, THAT NO OTHER INVOICE HAS SEEN OR WILL BE ISSUED, AND THAT ALL PATRICULARS ARE TRUE AND CORRECT.

Signature

NAME

COMPANY

TELEPHONE

DATE</td><td colspan="2">PACKING</td><td></td><td></td></tr>
<tr><td colspan="2">FREIGHT</td><td></td><td></td></tr>
<tr><td colspan="2">OTHER COSTS
(specify)</td><td></td><td></td></tr>
<tr><td colspan="2">INSURANCE</td><td></td><td></td></tr>
<tr><td colspan="2">TOTAL INVOICE AMOUNT</td><td colspan="2"></td></tr>
</table>

CUSTOMER FEEDBACK FORM

Date Reported:	**Received By:**	**Control No:**
Source of Feedback		
Name (Individual and Company if applicable): **Address:** **Phone:** **E-Mail:**		
Comment Description		
Is this a Complaint _____ (Tick as appropriate)		
Immediate Action Taken (if applicable) TO BE COMPLETED BY CARPHA		
Investigated By:	**Date:**	
Corrective Action or Response (TO BE COMPLETED BY CARPHA)		
Prepared By:	**Date:**	

Approved by: _____ (Quality Manager) Date: _____