Title:	**UCD National Virus Reference Laboratory User Manual**		
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1. INTRODUCTION

This manual is designed to give an overall view of the services provided by the UCD National Virus Reference Laboratory (NVRL). The laboratory provides a national diagnostic and reference service for clinicians investigating virus infections. The current workload involves over 500,000 tests per annum. The laboratory is fully accredited by Clinical Pathology Accreditation (UK) Ltd., the World Health Organisation as a National Laboratory for Poliovirus and Influenza, Measles and Rubella. An 'out of hours' service is available to deal with urgent testing requirements, such as screening of solid organ donors, testing of those requiring renal dialysis and investigation of sources of needle-stick injuries. This ensures a continuity of service with laboratory investigations available 365 days a year on a 24-hour basis. Requests for this service must be approved at the requesting hospital by the relevant Consultant Microbiologist / Pathologist and by the NVRL 'on call' clinician. A wide range of diagnostic tests are performed routinely but others are available by prior arrangement. The tests available are outlined in this document.

Professor William Hall

August 2011

2. GENERAL INFORMATION

2.1 Laboratory Address

National Virus Reference Laboratory
University College Dublin
Belfield
Dublin 4
Ireland

2.2 Hours of service

Normal Opening Hours: Monday to Friday: 8.00 a.m. - 5.30 p.m.

2.3 Out of Hours Service

An "out of hours service" is available for urgent laboratory investigation. Before testing can proceed it must be approved by a Consultant Microbiologist/ Pathologist at the requesting hospital. On weekdays any request for investigation after 10 pm must be approved by the NVRL On Call Clinician (087 9806448)

The on-call service can also be accessed outside normal hours by contacting VoxPro Telephone call back service on No. 021 4521935. When using this number the following information is required:

a) Name of caller
b) Contact number
c) Hospital source
d) Message

Urgent Investigations available "on-call" are as follows:

Solid organ donor screening: Serological investigation for HIV (HIV Ag/Ab), Hepatitis B (HBsAg, anti-HBc) Hepatitis C (HCV Ag and anti-HCV), HTLV (anti-HTLV I/II), Toxoplasma, CMV and Syphilis.

Source of needlestick injury investigation: Serological investigation for HIV (HIV Ag/Ab) and Hepatitis B (HBsAg,). HCV investigations are performed the next working day a "baseline" sample collected from the recipient will be stored at the NVRL.

Screening of patients before first renal dialysis session: Serological investigation for HIV (HIV Ag/Ab), Hepatitis B (HBsAg, anti-HBc) Hepatitis C (HCV Ag and anti-HCV).

Determination of VZV Immune status Investigation must be approved, following discussion with On-Call Clinician.

Unbooked deliveries: Investigations for evidence of maternal infection, such as HIV and HBV, will be performed as required

Immuno-compromised patients: Investigation must be approved, following discussion with On-Call Clinician.

NOTE: Additional urgent investigations will only be performed following discussions with the NVRL On call clinician

Results will be telephoned to the requesting doctor. To ensure immediate transmission of results, it is ESSENTIAL that the request form accompanying the specimen specifies the requesting doctor's name and bleep no./ phone no (mobile number if possible).

Clinical advice is available "out of hours" by contacting the NVRL 'on call' clinician at 087 9806448.

2.4 Blood and Tissue Establishment (BTE)

A dedicated laboratory was established within the NVRL to fulfil the requirements of the European Communities (Quality and Safety of Human Blood and Blood Components) Regulations (*S.I No 360 of 2005)*.

The BTE acts as the confirmatory laboratory for blood donor samples reactive during screening at the Irish Blood Transfusion Service. In addition the laboratory screens blood donations collected for autologous transfusion.

For samples to be tested in the BTE a Service Level Agreement is necessary between the NVRL and the referring centre. The sample collection and transport criteria for samples investigated in the BTE laboratory differs from other samples referred to the NVRL. For further information please contact Jeff Connell: e.mail: jeff.connell@ucd.ie.

2.5 General Contact Details

General Telephone: +353 - 1 - 716 4401

Fax: +353 - 1- 2697611

E-mail: nvrl@ucd.ie

Website: http://www.ucd.ie/nvrl

2.6 List of Contacts

Telephone enquiries for patient results are available between 9a.m and 5.30 p.m. Monday-Friday. The telephone numbers to contact are outlined below. Results are reported (hard copy and in many cases electronically) as soon as they are authorised. Many reports are issued to the hospital pathologist and therefore it is advisable to check with your pathology department before calling NVRL. Any queries relating to service provision or the User Manual should be directed to the Quality Assurance Officer.

Where clinical, scientific and administrative advice is required please use the provided listing.

Name	Extension

Director	Professor William Hall	716 1236
Laboratory Manager	Deirdre Burke	716 1328
Assistant Director	Dr. Jeff Connell	716 1321
Consultant Microbiologist	Dr. Brendan Crowley	416 2968
Principal Clinical Scientist	Dr. Suzie Coughlan	716 1359
Quality Assurance Officer	Cleo Talbot	716 4420
Systems Manager	Brian O'Grady	716 1346
Facilities Manager	Brian Keogan	716 1235
	NVRL On Call Clinician	087 9806448
	Patient Result Queries	716 4413/ 4414 / 4415
	Clinical / Urgent Queries	716 1349 /1240

2.7 Complaints

Please contact the Quality Assurance Officer.

2.8 Laboratory Fees

A list of charges, which is updated annually, is provided to the HSE. Telephone enquiries can also be made to 01 716 4403/1342.

2.9 Referred Work

For the purposes of additional or confirmatory investigations, samples may be referred to an external laboratory. See list below

Pathogen	External Laboratory
Arbovirus *Viral Haemorrhagic Fever*	Health Protection Agency Porton Down, Salisbury, Wiltshire. SP4 0JG
Toxoplasma(Toxoplasma referrals occur based on clinical details and initial results obtained in the NVRL)	Toxoplasma Reference Laboratory Public Health Wales Microbiology ABM, Singleton Hospital, Swansea. SA2 8QA
Leptospira (*Leptospira* referrals occur based on clinical details and initial results obtained in the NVRL)	Leptospira Reference Unit Dept. of Microbiology & Immunology The County Hospital Union Walk Hereford HR1 2ER

*Lymes (Borrelia burgdoferi)(*Lymes referrals occur based on clinical details and initial results obtained in the NVRL)	Southampton HPA Level B South Laboratory Block, Southampton General Hospital Southampton SO16 6YD

3. TESTS AVAILABLE

3.1 Urgent Laboratory Investigation

Requests for **URGENT** investigation must be arranged by phone (01 716 1349/1240) with the NVRL clinical team.

3.2 Routine Laboratory Investigation

Pathogen Tested	Investigation
Adenovirus	Culture
	Direct Immunofluorescence
	Electron Microscopy
	Molecular Qualitative
	Molecular Quantitative
Arbovirus Group	Immunofluorescence
Astrovirus	Electron Microscopy
Borrelia burgdorferi (Lyme Disease)	Serology
Chikungunya	Molecular Qualitative
	Immunofluorescence
Chlamydia trachomatis	Molecular Qualitative
Coronaviruses (EXCL SARSCOV)	Electron Microscopy
Cytomegalovirus (CMV)	Culture
	Molecular Qualitative
	Molecular Quantitative
	Serology
Dengue virus	Serology
Enterovirus	Culture
	Molecular Qualitative
Epstein Barr virus (EBV)	Serology
	Molecular Quantitative

Pathogen Tested	Investigation
Hantavirus	Serology
Hepatitis A virus	Serology
Hepatitis B virus	Molecular Quantitative
	Genotypic antiviral resistance testing
	HBV genotyping
	Pre-core mutant analysis
	Serology
Hepatitis C virus	Molecular Quantitative
	Genotypic testing
	IL-28
	Serology
Hepatitis D virus	Serology
Hepatitis E virus	Serology
Herpes Simplex Virus 1, 2 (HSV)	Serology
	Culture
	Spin amplified Immunofluorescence
	Direct Immunofluorescence
	Molecular Qualitative
Herpes group viruses	Electron Microscopy
HHV-6	Molecular Qualitative
Human Immunodeficiency Virus 1, 2 (HIV)	Molecular Quantitative
	Genotypic Tropism determination
	Genotypic antiviral resistance testing
	Serology

Pathogen	Investigation
Human T-Lymphotropic Virus (HTLV) I, II	Serology
	Molecular quantitative
Influenza Virus	Direct Immunofluorescence
	Molecular Qualitative
	Genotypic antiviral resistance testing
Influenza virus (H5)	Molecular Qualitative
Leptospirosis	Serology
Measles virus	Culture
	Molecular Qualitative
	Serology/ Saliva
Molluscum contagiosum	Electron Microscopy
Mumps virus	Culture
	Molecular Qualitative
	Serology
Neisseria gonorrhoeae	Molecular Qualitative
Norovirus	Electron Microscopy
	Molecular Qualitative
Orf virus	Electron Microscopy
Papovavirus	Electron Microscopy
Parainfluenza virus	Direct Immunofluorescence
	Culture
Parvovirus B19	Serology
	Molecular

Pathogen	Investigation
Polyoma virus (JC)	Molecular Qualitative
	Molecular Quantitative
Polyoma BK virus	Molecular Quantitative
Respiratory Syncytial virus (RSV)	Culture
	Direct Immunofluorescence
Rhinovirus	Culture
Rotaviruses	Electron Microscopy
Rubella	Serology
Syphilis (*Treponema pallidum*)	Serology
Toxoplasma gondii	Serology
Varicella Zoster virus (VZV)	Direct immunofluorescence
	Spin Amplified Immunofluorescence
	Molecular Qualitative
	Serology
Viral Haemorrhagic Fevers	Serology
West Nile Virus	Serology

Table 1 indicates the laboratory investigations available. To access the details of the sample type, transport conditions, testing frequency, sample volume, request form and turnaround time please double click on the investigation beside the pathogen named. The minimum turnaround time for a single test is calculated from day of receipt of specimen to date of issue of report in working days. Any sample arriving after 12.00midday will be regarded as arriving the next working day. Please note that additional days are required for confirmation of reactive samples. Samples referred to other reference laboratories will further extend the test turnaround time.

3.3 Additional Laboratory Testing

If **additional laboratory testing** is required by the referring clinician on a sample previously referred, please contact the laboratory to investigate the feasibility of using the initial specimen for analysis. Additional testing will only be performed on receipt of a written or faxed request.

3.4 Packing the Specimen for Transport

The requirements stated below are in accordance with the European Agreement concerning the International Carriage of Dangerous Goods by Road (UNADR) and apply to all specimens or samples directed to the NVRL. It is the responsibility of the referring site to ensure compliance with these requirements.

3.4.1 Procedure for the Transport of Diagnostic Specimens (Non Infectious)

1. Specimen to be sent should be stored in a secure (preferably plastic) primary container.
2. Wrap the container in tissue or cotton wool, which will act as absorbent material in event of any spillages.
3. This will be placed in a biohazard bag.
4. Place the biohazard bag with the sample in a padded (jiffy bag) envelope.
5. Label the envelope with a hazard warning label, "Diagnostic Specimen".
6. Place the name, address and contact number of the destination laboratory on the outside of the envelope. Please avoid use of staples for closure of packages, as these present a safety hazard to the laboratory staff.
7. Place the name, address and contact number of the originator on the outside of the envelope or transport container.
8. The specimen can be transported under the appropriate temperature conditions.

3.4.2 Procedure for the Transport of Infectious or Suspected Infectious Specimens

1. Specimens or samples suspected or known to contain risk group 3 or 4 Pathogens are classified as infectious and are packaged and transported accordingly as outlined below.
2. Specimens or samples to be sent should be stored in a secure (preferably plastic) primary container.
3. Wrap the container in tissue or cotton wool, which will act as absorbent material in event of any spillages.
4. Place the wrapped primary specimen or sample container inside of the plastic container of the UN-approved Class 6.2 package type.
5. Place the container inside the cardboard box.
6. The box should contain a label " Infectious Substance". Write the name of the suspected microbe being transported in brackets.
7. Place the name, address and contact number of the destination laboratory on the outside of the box.
8. Place the name, address and contact number of the originator on the outside of the box.
9. Complete a transport document and provide a copy to the licensed courier.

A licensed courier must be used for the transport of infectious or suspected infectious specimens.

4. REQUEST FORMS

Requests for specimens requiring **urgent** investigation must be either faxed to the laboratory clearly stating the referring Doctors name and contact details (bleep or mobile) and reason for urgent investigation or arranged by phone with the NVRL Clinical team. The accompanying sample and request form must be clearly labelled **'urgent'** and **have a contact name and number (bleep/mobile number) for reporting.**

NVRL request forms

GP Request Form

General Virology Request Form

Viral Serology Request Form

Biocontainment Facility Request Form

HIV Viral Load Assay Form

Hepatitis C Virus RNA Investigation Form

Chlamydia trachomatis and Neisseria gonorrhoeae PCR test Form

Measles IgM Oral Fluid Assay Form

Mumps IgM Oral Fluid Assay Form

Influenza Form

HIV Genotypic Resistance Assay Request Form

HIV Tropism Determination Request Form

may be downloaded from the NVRL website ***(www.ucd.ie/nvrl/nvrl_how_send.html).***

5. SPECIMEN RETENTION POLICY

In accordance with the guidelines of the Royal College of Pathologists (UK), Institute of Biomedical Sciences and National Pathology Accreditation Advisory Council (Australia) the NVRL will retain all serum/plasma specimens for 4 months following issue of final report unless otherwise arranged. The exceptions to this policy are antenatal samples and reactive syphilis specimens, which are retained for 1 year. In addition, serum taken after needle-stick injury or otherwise hazardous exposure will be retained for 2 years.

6. REPORTS

Hard copy reports are important documents and should be promptly distributed to the requesting clinician. Telephoned results will be given in cases of urgency to an identified person from the requesting source. For reasons of confidentiality **it is the policy of the NVRL not to fax or e-mail reports**. Copy reports will only be issued on receipt of a written request. Reports can be transmitted electronically via Medibridge please contact the NVRL for further information.

7. REQUESTING GUIDE

The following 'Requesting Guide' may assist in identifying possible viruses/agents involved. More detailed information is available on the NVRL website (www.ucd.ie/nvrl).

Requests for 'Viral screen', 'routine virology' or 'atypical screen' without accompanying clinical information will not be processed. Failure to supply the required information will lead to delays in reporting.

Provisional Diagnosis/	**Possible Virus /Agent / Disease**

Symptoms	
AIDS & HIV	Human Immunodeficiency Virus (HIV)
Arthralgia	Rubella virus Parvovirus B19 *Mycoplasma pneumoniae* Brucella
Central Nervous System	Enterovirus Mumps virus Herpes Simplex virus (HSV) Varicella Zoster virus (VZV) Measles virus Dengue Virus
Conjunctivitis	Adenovirus Herpes Simplex virus (HSV) Enteroviruses *Chlamydia trachomatis*
Diarrhoea/Vomiting	Rotavirus, Adenovirus Astrovirus Calicivirus Norovirus (Small round structured viruses)
Genital infection	Herpes Simplex virus (HSV) *Chlamydia trachomatis* Syphilis (*Treponema pallidum)*
Hand, foot & mouth disease	Coxsackie A16 virus
Heart disease	Coxsackie group B virus Q Fever (*Coxiella burnetti)* Chlamydia Group *Mycoplasma pneumonia*
Immune Status	Hepatitis A & B virus Varicella Zoster virus (VZV) Rubella virus Mumps virus Measles virus Parvovirus
"**In Utero" infections**	Rubella virus Cytomegalovirus (CMV) Parvovirus B19 *Toxoplasma gondii* Varicella Zoster virus (VZV)
Lymphadenopathy & Glandular fever	Epstein Barr virus (EBV) Cytomegalovirus (CMV) *Toxoplasma gondii*

Organ donors	Hepatitis B & C viruses Human Immunodeficiency Virus (HIV) Cytomegalovirus (CMV) *Toxoplasma gondii* Human T-Lymphotropic Virus (HTLV) *Treponema pallidum* (TPHA)
Paraparesis	Human T-Lymphotropic Virus (HTLV) Enterovirus
Pleurodynia	Coxsackie group B viruses
Skin Rashes	Q Fever (*Coxiella burnetti)* Chlamydia Group *Mycoplasma pneumonia* Syphilis (*Treponema pallidum)* Enterovirus
Stomatitis	Herpes Simplex virus (HSV) Enterovirus

Other investigations may be carried out by arrangement. Please do not hesitate to call the NVRL if further assistance is required

Adenovirus Culture

Test: Adenovirus detection using culture techniques

Sample Types applicable:

- Broncho –alveolar Lavage (BAL)
- Nasopharyngeal Aspirate (NPA)
- Throat Swab
- Stool

Specimen Collection/Transport Conditions:

Respiratory Secretions

Respiratory viruses are extremely thermo labile and therefore should be transported to the laboratory at 4^{o}C without delay. The quality of the sample is a major determinant in identifying the causative agent.

- Throat swabs and other swabs are obtained by swabbing the affected site and then breaking the swab into Viral Transport Medium (VTM) or equivalent medium.
- Nasopharyngeal secretions should be aspirated into a sterile plastic mucous extractor. Transport the mucous extractor with the secretions to the NVRL.
- A broncho-alveolar lavage should be transported in a sterile container.

Stool samples

2 to 5g should be transported in a sterile universal container. Transport medium is not required.

Eye swabs

Conjunctival swabs and scrapings for virus isolation should be taken into VTM or equivalent medium.
Specimens should be transported without delay, ideally at 4^{o}C.

Testing Frequency: Daily
Turnaround Time: 14 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone number for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Adenovirus Direct Immunofluorescence

Test: Adenovirus detection using Direct Immunofluorescence

Sample Types applicable:

- Nasopharyngeal Aspirate (NPA)
- Sputum
- Broncho –alveolar Lavage (BAL)

Specimen Collection/Transport Conditions:

Respiratory Secretions

Respiratory viruses are extremely thermo labile and therefore should be transported to the laboratory at 4^{o}C without delay. The quality of the sample is a major determinant in identifying the causative agent.

- Throat swabs and other swabs are obtained by swabbing the affected site and then breaking the swab into Viral Transport Medium (VTM).
- Nasopharyngeal secretions should be aspirated into a sterile plastic mucous extractor. Transport the mucous extractor with the secretions to the NVRL.
- A broncho-alveolar lavage should be transported in a sterile container.

Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone number for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Adenovirus Electron Microscopy

Test: Adenovirus detection using Electron Microscopy

Sample Types applicable:

- Stool Sample
- Biopsy Tissue
- Post Mortem tissue

Specimen Collection/Transport Conditions:

Stool samples

2 to 5g should be transported in a sterile universal container. Transport medium is not required.

Post - mortem or Biopsy specimens

Fresh unfixed tissues should be collected aseptically from the sites of probable infection using separate sterile instruments to cut and remove each sample. Place each sample in a separate sterile container and clearly identify each sample type. Specimens should be transported without delay, ideally at 4^{o}C.
Scabs or biopsy material for electron microscopy should be sent in a sterile dry bottle.
Rapidly frozen tissue may also be sent for electron microscopy.

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone number for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Adenovirus Molecular Qualitative

Test: Adenovirus detection using Molecular Qualitative Techniques

Sample Types applicable:

- Eye Swab
- Stool
- Throat Swab

Specimen Collection/Transport Conditions:

Eye swabs

Conjunctival swabs and scrapings for virus isolation should be taken into VTM or equivalent medium.
Specimens should be transported without delay, ideally at 4^{o}C.

Stool samples

2 to 5g should be transported in a sterile universal container. Transport medium is not required.

Testing Frequency: Twice Weekly
Turnaround Time: 5-7 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone number for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Adenovirus Molecular Quantitative

Test: Adenovirus detection using Molecular Quantitative Techniques

Sample Types applicable:

- EDTA whole blood
- Plasma
- Clotted blood
- Serum

Specimen Collection/Transport Conditions:

EDTA whole blood/Serum/Clotted blood/plasma

Samples for molecular investigation should be separated from whole blood within 24 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral DNA. These samples should be despatched to the NVRL in a frozen state.Alternatively, whole blood (EDTA or clotted blood) can be sent to the NVRL but must arrive within 4-6 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Testing Frequency: Daily
Turnaround Time: 3 working days.
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone number for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Arbovirus Group

Test: Arbovirus detection using immunofluorescence

Sample Types applicable:

- Serum
- Clotted Blood

Specimen Collection/Transport Conditions:

Serum / Clotted Blood

For serological investigations serum samples (>1ml) or container of clotted blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder).

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone number for urgent results
6. **N.B**. Clinical details and travel information

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Note: Arbovirus tested

a) Non US screen: West Nile Virus, Venezuelan Encephalitis Virus, Japenese Encephalitis Virus, Yellow Fever, Dengue Virus.

b) US screen: West Nile Virus, Western Encephalitis Virus, Eastern Encephalitis Virus, St. Louis Encephalitis Virus, Powassan Virus, La Crosse Virus.

Travel history particularly important to choose the appropriate Arbovirus screen. Please notify laboratory if the patient has received Yellow Fever Vaccine as cross reactivity can be observed within Arbovirus screening assays resulting in false positive results due to non specific cross reactivity.

Astroviruses Electron Microscopy

Test: Astroviruses detection using Electron Microscopy

Sample Types applicable:

- Stool

Specimen Collection/Transport Conditions:

Stool samples

2 to 5g should be transported in a sterile universal container. Transport medium is not required.

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone number for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Borrelia burgdoferi (Lymes Disease)

Test: Borrelia burgdoferi (Lymes Disease) Serology

Sample Types applicable:

- Serum
- Clotted Blood

Specimen Collection/Transport Conditions:

Serum / Clotted Blood

For serological investigations serum samples (>1ml) or container of clotted blood (5-10 ml) or serum (> 1ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder).
Testing Frequency: 2-3 times weekly
Turnaround Time: 5 working days.
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone number for urgent results
6. Clinical details in relation to rash /tick bite etc

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Chikungunya immunofluorescence

Test: Chikungunya detection using immunofluorescence

Sample Types applicable:

- Serum
- Clotted Blood
- Plasma
- EDTA Whole blood

Specimen Collection/Transport Conditions:

Serum / Clotted Blood

For serological investigations serum samples (>1ml) or container of clotted blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder).
Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone number for urgent results
6. **N.B**. Clinical details and travel information

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Chikungunya Molecular Qualitative

Test: Chikungunya detection using molecular qualitative

Sample Types applicable:

- Plasma
- EDTA Whole Blood

Specimen Collection/Transport Conditions:

Plasma/EDTA Whole blood

Plasma samples for molecular investigation should be separated from whole blood within 24 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral DNA. These samples should be despatched to the NVRL in a frozen state. Alternatively, EDTA whole blood can be sent to the NVRL but must arrive within 24 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone number for urgent results
6. **N.B**. Clinical details and travel information

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Chlamydia trachomatis

Test: *Chlamydia trachomatis* Molecular Qualitative
Please note: Samples requested for Chlamydia trachomatis investigations will also be tested for Neisseria gonorrhoea.

Sample Types applicable:

- Endocervical Swab
- Urethral Swabs
- Urine Specimens
- Eye swabs
- Rectal Swabs

Specimen Collection/Transport Conditions:
Details on specimen collection for combined *Chlamydia Trachomatis* (CT) and *Neisseria gonorrhoeae* (GC) testing are included in the APTIMA collection device kits provided by the NVRL.

Only specimens collected in APTIMA collection devices can be tested in the NVRL.
Testing Frequency: 4 times a week
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone number for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Coronavirus Electron Microscopy

Test: Coronavirus detection using electron microscopy techniques

Sample Types:

- Stool
- Respiratory Secretions

Specimen Collection/Transport Conditions:

Stool

2 to 5g should be transported in a sterile universal container. Transport medium is not required. For detection of coronavirus, specimens should be transported to the laboratory as soon as possible post collection. Alternatively specimens may be stored at 4^{o}C for up to 72 hrs before dispatch.

Respiratory Secretions

Please contact the laboratory

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Cytomegalovirus (CMV) Culture

Test: Cytomegalovirus (CMV) detection using Culture

Sample Types applicable:

- Biopsy Specimens
- Other specimen types by arrangement

Specimen Collection/Transport Conditions:

Scabs or biopsy material for electron microscopy should be sent in a sterile dry bottle. Rapidly frozen tissue may also be sent for electron microscopy.

Testing Frequency: Daily
Turnaround Time: 14 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone number for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Cytomegalovirus (CMV) Molecular Qualitative

Test: Cytomegalovirus (CMV) detection using molecular qualitative techniques

Sample Types applicable:

- Cerebrospinal Fluid (CSF)
- Urine
- Broncho- alveolar Lavage (BAL)
- Amniotic Fluid
- Blood Spot (Guthrie card)

Specimen Collection/Transport Conditions:

Cerebrospinal Fluid (CSF)

If possible, collect 500µl into a sterile container for virus isolation and molecular investigation. Transport medium is not required. Specimens should be transported without delay, at 4^{o}C.

Urine

10ml of urine should be sent in a sterile container. Specimens should be transported without delay, at 4^{o}C.

Respiratory Secretions

Respiratory viruses are extremely thermo labile and therefore should be transported to the laboratory at 4^{o}C without delay. The quality of the sample is a major determinant in identifying the causative agent.

- Throat swabs and other swabs are obtained by swabbing the affected site and then breaking the swab into Viral Transport Medium (VTM) or equivalent medium.
- Nasopharyngeal secretions should be aspirated into a sterile plastic mucous extractor. Transport the mucous extractor with the secretions to the NVRL.
- A broncho-alveolar lavage should be transported in a sterile container.

Testing Frequency: Daily
Turnaround Time: 2 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Cytomegalovirus (CMV) Molecular Quantitative

Test: Cytomegalovirus (CMV) detection using molecular quantitaive techniques

Sample Types applicable:

- EDTA whole blood
- Plasma

Specimen Collection/Transport Conditions:

Plasma

Plasma samples for molecular investigation should be separated from whole blood within 24 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral DNA. These samples should be despatched to the NVRL in a frozen state.

EDTA

Alternatively, EDTA whole blood can be sent to the NVRL but must arrive within 24 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Testing Frequency: Daily
Turnaround Time: 3working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Cytomegalovirus (CMV) Serology

Test: Cytomegalovirus (CMV) detection using serology techniques

Sample Types applicable:

- Clotted blood
- Serum
- Plasma
- EDTA Whole blood

Specimen Collection/Transport Conditions:

Clotted Blood/Serum/ Plasma/ EDTA Whole blood

For serological investigations serum/plasma samples (>1ml) or container of clotted blood/EDTA Whole blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder)

Testing Frequency: Daily

Turnaround Time: 3 working days

Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Dengue Serology

Test: Dengue detection using serology techniques

Sample Types applicable:

- Serum
- Clotted Blood

Specimen Collection/Transport Conditions:

Serum / Clotted Blood

For serological investigations serum samples (>1ml) or container of clotted blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder).
Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone number for urgent results
6. **N.B**. Clinical details and travel information

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Enteroviruses Culture

Test: Enteroviruses detection using culture techniques

Sample Types applicable:

- Stool
- Throat Swab
- Pleural Fluid

Specimen Collection/Transport Conditions:

Stool samples

2 to 5 g should be transported in a sterile universal container. Transport medium is not required.

Respiratory Secretions

Respiratory viruses are extremely thermo labile and therefore should be transported to the laboratory at 4^{o}C without delay. The quality of the sample is a major determinant in identifying the causative agent.

- Throat swabs and other swabs are obtained by swabbing the affected site and then breaking the swab into Viral Transport Medium (VTM). VTM can be obtained from the NVRL

Testing Frequency: Daily
Turnaround Time: 14 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly

Enteroviruses Molecular Qualitative

Test: Enteroviruses detection using molecular qualitative techniques

Sample Types applicable:

- Cerebrospinal Fluid (CSF)
- Stool
- Throat swab

Specimen Collection/Transport Conditions:

Cerebrospinal Fluid

If possible, collect 500µl into a sterile container for virus isolation and molecular investigation. Transport medium is not required. Specimens should be transported without delay, at 4^{o}C.

Stool samples

2 to 5 g should be transported in a sterile universal container. Transport medium is not required.

Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Epstein Barr Virus (EBV) Molecular Quantitative

Test: Epstein Barr Virus (EBV) detection using molecular quantitative techniques

Sample Types applicable:

- EDTA whole blood
- Plasma

Specimen Collection/Transport Conditions:

Plasma

Plasma samples for molecular investigation should be separated from whole blood within 24 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral DNA. These samples should be despatched to the NVRL in a frozen state.

EDTA

Alternatively, EDTA whole blood can be sent to the NVRL but must arrive within 24 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Epstein Barr Virus (EBV) Serology

Test: Epstein Barr Virus (EBV) detection using serology techniques

Sample Types applicable:

- Clotted blood
- Serum
- Plasma
- EDTA Whole blood

Specimen Collection/Transport Conditions:

Clotted Blood/Serum/ Plasma/ EDTA Whole blood

For serological investigations serum/plasma samples (>1ml) or container of clotted blood/EDTA Whole blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder)
Testing Frequency: Twice weekly
Turnaround Time: 5 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Hantavirus Serology

Test: Hantavirus detection using serology techniques

Sample Types applicable:

- Serum
- Clotted Blood

Specimen Collection/Transport Conditions:

Serum / Clotted Blood

For serological investigations serum samples (>1ml) or container of clotted blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder).

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone number for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Hepatitis A Virus Serology

Test: Hepatitis A Virus detection using serology techniques

Sample Types applicable:

- Clotted blood
- Serum
- Plasma
- EDTA Whole blood

Specimen Collection/Transport Conditions:

Clotted Blood/Serum/ Plasma/ EDTA Whole blood

For serological investigations serum samples (>1ml) or container of clotted blood/EDTA Whole blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder)
Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Hepatitis B Virus Molecular Quantitative

Test: Hepatitis B Virus detection using molecular quantitative techniques

Sample Types applicable:

- Clotted blood
- Serum
- EDTA whole blood
- Plasma

Specimen Collection/Transport Conditions:

Serum and plasma

Samples for molecular investigation should be separated from whole blood within 24 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral DNA or RNA. These samples should be despatched to the NVRL in a frozen state. Alternatively, whole blood (EDTA or clotted blood) can be sent to the NVRL but must arrive within 4-6 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Testing Frequency: Weekly
Turnaround Time: 7 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Hepatitis B Virus Genotypic antiviral resistance testing

Test: Hepatitis B Virus Genotypic antiviral resistance

Sample Types applicable:

- Clotted blood
- Serum

Specimen Collection/Transport Conditions:

Serum and plasma

Samples for molecular investigation should be separated from whole blood within 24 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral DNA. These samples should be despatched to the NVRL in a frozen state. Alternatively, whole blood (clotted blood) can be sent to the NVRL but must arrive within 4-6 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Hepatitis B Virus Genotyping

Test: Hepatitis B Virus Genotyping

Sample Types applicable:

- Clotted blood
- Serum

Specimen Collection/Transport Conditions:

Serum and plasma

Samples for molecular investigation should be separated from whole blood within 24 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral DNA. These samples should be despatched to the NVRL in a frozen state. Alternatively, whole blood (clotted blood) can be sent to the NVRL but must arrive within 4-6 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Hepatitis B Virus Pre- core mutant analysis

Test: Hepatitis B Virus Pre- core mutant analysis

Sample Types applicable:

- Clotted blood
- Serum

Specimen Collection/Transport Conditions:

Serum and plasma

Samples for molecular investigation should be separated from whole blood within 24 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral DNA. These samples should be despatched to the NVRL in a frozen state. Alternatively, whole blood (clotted blood) can be sent to the NVRL but must arrive within 4-6 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Hepatitis B Virus Serology

Test: Hepatitis B Virus using serology techniques

Sample Types applicable:

- Clotted blood
- Serum
- EDTA whole blood
- Plasma

Specimen Collection/Transport Conditions:

Clotted Blood/Serum/ Plasma/ EDTA Whole blood

For serological investigations serum/plasma samples (>1ml) or container of clotted blood/EDTA Whole blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder).

Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Hepatitis C Virus IL-28 testing

Test: Hepatitis C Virus IL-28 testing

Sample Types applicable:

- Clotted blood
- Serum
- EDTA whole blood
- Plasma

Specimen Collection/Transport Conditions:

Serum and plasma

Samples for molecular investigation should be separated from whole blood within 4-6 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral RNA. These samples should be despatched to the NVRL in a frozen state.

EDTA

Alternatively, whole blood (EDTA or clotted blood) can be sent to the NVRL but must arrive within 4-6 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Note: Patient consent is required prior to performing IL-28 testing.

Testing Frequency: Weekly
Turnaround Time: 7 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Hepatitis C Virus Molecular Quantitative

Test: Hepatitis C Virus detection using molecular quantitative techniques

Sample Types applicable:

- Clotted blood
- Serum
- EDTA whole blood
- Plasma

Specimen Collection/Transport Conditions:

Serum and plasma

Samples for molecular investigation should be separated from whole blood within 4-6 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral RNA. These samples should be despatched to the NVRL in a frozen state.

EDTA / Clotted Blood

Alternatively, whole blood (EDTA or clotted blood) can be sent to the NVRL but must arrive within 4-6 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Note: In cases where HCV genotyping is also required an additional 1ml volume of sample should be sent to the NVRL.
Testing Frequency: 3 times weekly
Turnaround Time: 7 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlight

Hepatitis C Virus Genotyping

Test: Hepatitis C Virus Genotype

Sample Types applicable:

- Clotted blood
- Serum
- EDTA whole blood
- Plasma

Specimen Collection/Transport Conditions:

Serum and plasma

Samples for molecular investigation should be separated from whole blood within 6 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral RNA. These samples should be despatched to the NVRL in a frozen state.

EDTA

Alternatively, whole blood (EDTA or clotted blood) can be sent to the NVRL but must arrive within 6 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.
Note: Please note 1ml volume is required for HCV genotyping. In cases where HCV molecular quantitative testing is also required an additional 1ml volume shpuld be sent to he NVRL.

Testing Frequency: Weekly
Turnaround Time: 10 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Hepatitis C Virus Serology

Test: Hepatitis C Virus using serology techniques

Sample Types applicable:

- Clotted blood
- Serum
- EDTA Whole blood
- Plasma

Specimen Collection/Transport Conditions:

Clotted Blood/Serum/ Plasma/ EDTA Whole blood

For serological investigations serum/plasma samples (>1ml) or container of clotted blood/EDTA Whole blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder).

Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Hepatitis D Virus Serology

Test: Hepatitis D Virus detection using serology techniques

Sample Types applicable:

- Clotted bloods
- Serum

Specimen Collection/Transport Conditions:

Serum / Clotted Blood

For serological investigations serum samples (>1ml) or container of clotted blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder).

Testing Frequency: Weekly
Turnaround Time: 10 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Hepatitis E Virus Serology

Test: Hepatitis E Virus detection using serology techniques

Sample Types applicable:

- Clotted blood
- Serum
- EDTA Whole blood
- Plasma

Specimen Collection/Transport Conditions:

Clotted Blood/Serum/ Plasma/ EDTA Whole blood

For serological investigations serum samples (>1ml) or container of clotted blood/EDTA Whole blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder)
Testing Frequency: Weekly
Turnaround Time: 10 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Herpes Simplex Virus 1,2 (HSV) Culture

Test: Herpes Simplex Virus (HSV) 1,2 using Culture techniques

Sample Types applicable:

- broncho-alveolar lavage (BAL)
- Throat swabs

Specimen Collection/Transport Conditions:

Respiratory Secretions

Respiratory viruses are extremely thermo labile and therefore should be transported to the laboratory at $4^{o}C$ without delay. The quality of the sample is a major determinant in identifying the causative agent.

- Throat swabs and other swabs are obtained by swabbing the affected site and then breaking the swab into Viral Transport Medium (VTM). VTM can be obtained from the NVRL
- A broncho-alveolar lavage should be transported in a sterile container.

Testing Frequency: Daily
Turnaround Time: 14 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Herpes Simplex Virus 1,2 (HSV) Direct Immunofluorescence

Test: Herpes Simplex Virus (HSV) 1,2 using direct Immunofluorescence technique

Sample Types applicable:

- Vesicle Fluid/Scrapings on slide

Specimen Collection/Transport Conditions:

Vesicular Fluid

Vesicular fluids and cellular material from the base of lesions should be collected during the first 3 days after vesicle eruption. Vesicle fluid may be aspirated using a needle and syringe and released into a sterile bottle. Alternatively a sample can be collected using a swab which is then placed into VTM. The base of the lesion can be opened and then scraped with a sterile scalpel and the cellular material washed into VTM.

Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Herpes Simplex Virus 1,2 (HSV) Spin Amplified Immunofluorescence

Test: Herpes Simplex Virus (HSV) 1,2 using spin amplified immunofluorescence technique

Sample Types applicable:

- Please contact the laboratory

Specimen Collection/Transport Conditions:
Please contact the laboratory

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Herpes Simplex Virus 1,2 (HSV) Molecular Qualitative

Test: Herpes Simplex Virus (HSV) 1,2 using molecular qualitative technique

Sample Types applicable:

- CSF
- Viral Swab

Specimen Collection/Transport Conditions:

CSF

If possible, collect 500µl into a sterile container for virus isolation and molecular investigation. Transport medium is not required. Specimens should be transported without delay, at 4^{o}C.

Testing Frequency: Daily (CSF)/3 times Weekly (Swab)
Turnaround Time: 2 working days (CSF)/5 working days (Swab)
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Herpes Simplex Virus 1,2 (HSV) Serology

Test: Herpes Simplex Virus (HSV) 1,2 using serology techniques

Sample Types applicable:

- Clotted Blood
- Serum

Specimen Collection/Transport Conditions:

Serum / Clotted Blood

For serological investigations serum samples (>1ml) or container of clotted blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder)

Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Herpes Group Virus Electron Microscopy

Test: Herpes Simplex group virus using electron microscopy techniques

Sample Types applicable:

- Clotted Blood
- Serum

Specimen Collection/Transport Conditions:

Serum / Clotted Blood

For serological investigations serum samples (>1ml) or container of clotted blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder)
Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

HHV 6 Molecular Qualitative

Test: HHV6 virus using molecular qualitative techniques

Sample Types applicable:

- CSF
- Saliva
- Plasma
- EDTA Whole blood

Specimen Collection/Transport Conditions:

CSF

If possible, collect 500µl into a sterile container for virus isolation and molecular investigation. Transport medium is not required. Specimens should be transported without delay, at 4^{o}C.

Saliva

Please contact the laboratory

Plasma/EDTA Whole blood

Please contact the laboratory

Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Human Immunodeficiency Virus (HIV1) Molecular Quantitative

Test: HIV 1detection using Molecular Quantative techniques

Sample Types:

- EDTA whole blood
- Plasma

Specimen Collection/Transport Conditions:

Plasma

Plasma samples for molecular investigation should be separated from whole blood within 6 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral RNA. These samples should be despatched to the NVRL in a frozen state. Chillette portable containers are recommended for transport of frozen specimens.

EDTA

Alternatively, EDTA whole blood can be sent to the NVRL but must arrive within 6 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Testing Frequency: 3 times weekly
Turnaround Time: 5 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Human Immunodeficiency Virus (HIV) Genotypic antiviral resistance testing

Test: HIV Genotypic detection using antiviral resistance techniques

Sample Types applicable:

- EDTA whole blood
- Plasma

Specimen Collection/Transport Conditions:

Plasma

Samples for molecular investigation should be separated from EDTA whole blood within 6 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral RNA. These samples should be despatched to the NVRL in a frozen state. Chillette portable containers are recommended for transport of frozen specimens.

EDTA

Alternatively, whole blood (EDTA) can be sent to the NVRL but must arrive within 6 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Testing Frequency: Weekly
Turnaround Time: 14 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Human Immunodeficiency Virus (HIV) Genotypic tropism testing

Test: HIV Genotypic tropism

Sample Types applicable:

- EDTA whole blood (HIV viral load result <1,000c/ml before testing performed)
- Plasma (HIV viral load > 1,000c/ml before testing performed)

Specimen Collection/Transport Conditions:

Plasma

Samples for molecular investigation should be separated from EDTA whole blood within 6 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral RNA. These samples should be despatched to the NVRL in a frozen state. Chillette portable containers are recommended for transport of frozen specimens.

EDTA

Alternatively, whole blood (EDTA) can be sent to the NVRL but must arrive within 6 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Testing Frequency: Weekly
Turnaround Time: 14 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Human Immunodeficiency Virus 1,2 (HIV) Serology

Test: HIV 1,2detection using Serology techniques

Sample Types:

- Serum
- Clotted blood
- Plasma
- EDTA Whole blood

Specimen Collection/Transport Conditions:

Clotted Blood/Serum/ Plasma/ EDTA Whole blood

For serological investigations serum/plasma samples (>1ml) or container of clotted blood/EDTA Whole blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder).

Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Human T-Lymphotropic Virus (HTLV) I,II Molecular Quantitative

Test: HTLV I,II detection using molecular quantitative techniques

Sample Types:

- EDTA Whole Blood

Specimen Collection/Transport Conditions:

EDTA Whole blood

For the above molecular investigation a container of EDTA Whole blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C.

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Human T-Lymphotropic Virus (HTLV) I,II Serology

Test: HTLV I,II detection using serology techniques

Sample Types:

- Serum
- Clotted blood

Specimen Collection/Transport Conditions:

Serum/Clotted blood

For serological investigations serum samples (>1ml) or container of clotted blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder).

Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Influenza Virus Direct Immunofluorescence

Test: Influenza detection using direct immunofluorescence techniques

Sample Types:

- Nasopharyngeal Aspirate
- Sputum
- Throat washing
- Broncho – alveolar Lavage (BAL)

Specimen Collection/Transport Conditions:

Respiratory Secretions

Respiratory viruses are extremely thermo labile and therefore should be transported to the laboratory at $4^{o}C$ without delay. The quality of the sample is a major determinant in identifying the causative agent.

- Throat swabs and other swabs are obtained by swabbing the affected site and then breaking the swab into Viral Transport Medium (VTM) or equivalent medium.
- Nasopharyngeal secretions should be aspirated into a sterile plastic mucous extractor. Transport the mucous extractor with the secretions to the NVRL.
- A broncho-alveolar lavage should be transported in a sterile container.

Testing Frequency: Daily
Turnaround Time: 2 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Influenza Virus Molecular Qualitative

Test: Influenza detection using molecular qualitative techniques

Sample Types:

- Broncho-alveolar Lavage
- Nasopharyngeal Aspirate
- Nasopharyngeal Swab
- Throat Swab
- Throat Washings
- Flaccid swabs

Specimen Collection/Transport Conditions:

Respiratory Secretions

Respiratory viruses are extremely thermo labile and therefore should be transported to the laboratory at 4^{o}C without delay. The quality of the sample is a major determinant in identifying the causative agent.

- Throat swabs and nasopharyngeal swabs are obtained by swabbing the affected site and then breaking the swab into Viral Transport Medium (VTM). The use of flaccid swabs may improve yield of respiratory virus
- Nasopharyngeal secretions should be aspirated into a sterile plastic mucous extractor. Transport the mucous extractor with the secretions to the NVRL.
- A broncho-alveolar lavage should be transported in a sterile container.

Testing Frequency: Daily in season/Twice a week not in season
Turnaround Time: 3 working days (in season)/5 working days (not in season)
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Influenza genotypic antiviral resistance testing

Test: Influenza genotypic antiviral resistance testing

Sample Types:

- Broncho-alveolar Lavage
- Nasopharyngeal Aspirate
- Nasopharyngeal Swab
- Throat Swab
- Throat Washings
- Flaccid swab

Specimen Collection/Transport Conditions:

Respiratory Secretions

Respiratory viruses are extremely thermo labile and therefore should be transported to the laboratory at 4^{o}C without delay. The quality of the sample is a major determinant in identifying the causative agent.

- Throat swabs and nasopharyngeal swabs are obtained by swabbing the affected site and then breaking the swab into Viral Transport Medium (VTM) or equivalent media. Flaccid swabs may improve the yield of respiratory viruses.
- Nasopharyngeal secretions should be aspirated into a sterile plastic mucous extractor. Transport the mucous extractor with the secretions to the NVRL.
- A broncho-alveolar lavage should be transported in a sterile container.

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

Please note that additional patient history and treatment history is required.

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Influenza Virus (H5) Molecular Qualitative

Test: Influenza (H5) detection using molecular qualitative techniques

Sample Types:

- Nose/Throat swabs

Specimen Collection/Transport Conditions:

Respiratory Secretions

Respiratory viruses are extremely thermo labile and therefore should be transported to the laboratory at 4^{o}C without delay. The quality of the sample is a major determinant in identifying the causative agent.

- Throat swabs and nasopharyngeal swabs are obtained by swabbing the affected site and then breaking the swab into Viral Transport Medium (VTM) or equivalent medium. The use of flaccid swabs may improve yield of respiratory virus

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Note: Please note that the laboratory must be notified prior to dispatching the sample. Please contact the clinical team on 01 7161321/ 01 7164440.

Leptospirosis Serology

Test: Leptospirosis detection using serology techniques

Sample Types:

- Serum
- Clotted Blood

Specimen Collection/Transport Conditions:

Serum/Clotted blood

For serological investigations serum samples (>1ml) or container of clotted blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder)

Testing Frequency: Twice weekly
Turnaround Time: 4 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Measles Virus Culture

Test: Measles detection using culture techniques

Sample Types:

- Cerebrospinal Fluid
- Nasopharyngeal Aspirate
- Throat Swab

Specimen Collection/Transport Conditions:

CSF

If possible, collect 500µl into a sterile container for virus isolation and molecular investigation. Transport medium is not required. Specimens should be transported without delay, at 4^{o}C.

Respiratory Secretions

Respiratory viruses are extremely thermo labile and therefore should be transported to the laboratory at 4^{o}C without delay. The quality of the sample is a major determinant in identifying the causative agent.

- Throat swabs and other swabs are obtained by swabbing the affected site and then breaking the swab into Viral Transport Medium (VTM).
- Nasopharyngeal secretions should be aspirated into a sterile plastic mucous extractor. Transport the mucous extractor with the secretions to the NVRL.

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Measles Virus Molecular Qualitative

Test: Measles detection using molecular qualitative techniques

Sample Types:

- Saliva (Oral Fluid)
- Serum
- Clotted Blood

Specimen Collection/Transport Conditions:

Saliva

Oral fluid (saliva) specimens should be collected using a foam swab supplied by the NVRL or using commercially available collection devices such as OraCol™ or OraSure™. Please contact the laboratory for further information.

Serum / Clotted Blood

For serological investigations serum samples (>1ml) or container of clotted blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder).

Testing Frequency: Weekly
Turnaround Time: 5 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

Note: Please include clinical details i.e. details of rash onset.

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Measles Virus Serology

Test: Measles detection using serology techniques

Sample Types:

- Saliva (Oral Fluid)
- Serum
- Clotted Blood

Specimen Collection/Transport Conditions:

Saliva

Oral fluid (saliva) specimens should be collected using a foam swab supplied by the NVRL or using commercially available collection devices such as OraCol™ or OraSure™. Please contact the laboratory for further information.

Serum / Clotted Blood

For serological investigations serum samples (>1ml) or container of clotted blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder).

Testing Frequency: Weekly
Turnaround Time: 4 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Molluscum contagious Electron Microscopy

Test: Molluscum contagious detection using electron microscopy techniques

Sample Types:

- Biopsy Tissue
- Skin
- Vesicle Fluid/Scrapings

Specimen Collection/Transport Conditions:

Biopsy Tissue

Fresh unfixed tissues should be collected aseptically from the sites of probable infection using separate sterile instruments to cut and remove each sample. Place each sample in a separate sterile container and clearly identify each sample type. Specimens should be transported without delay, ideally at 4^{o}C.

Scabs or biopsy material for electron microscopy should be sent in a sterile dry bottle.

Rapidly frozen tissue may also be sent for electron microscopy.

Vesicular fluids/Scrapings/Skin

Vesicular fluids and cellular material from the base of lesions should be collected during the first 3 days after vesicle eruption. Vesicle fluid may be aspirated using a needle and syringe at the base of the opened vesicle can then be scraped with a scalpel. The cellular material and/or the vesicle fluid should be smeared onto the centre of a clean microscope slide and air-dried. Do not fix this material for Electron Microscopy. Place the slide in a plastic slide carrier for transport.

Conjunctival swabs and scrapings for virus isolation should be taken into VTM. Specimens should be transported without delay, ideally at 4^{o}C.

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Mumps virus Culture

Test: Mumps virus detection using culture techniques
Sample Types:

- Cerebrospinal Fluid
- Throat swab
- Urine
- Saliva

Specimen Collection/Transport Conditions:

Cerebrospinal fluid

If possible, collect 1ml into a sterile container for virus isolation and molecular investigation. Transport medium is not required. Specimens should be transported without delay, at 4^{o}C.

Throat swab

Please contact the laboratory.

Urine

10ml of urine should be sent in a sterile container. Specimens should be transported without delay, at 4^{o}C.

Saliva

Oral fluid (saliva) specimens should be collected using a foam swab

Testing Frequency: Daily
Turnaround Time: 14 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Mumps virus Molecular Qualitative

Test: Mumps virus detection using molecular qualitative techniques

Sample Types:

- Serum
- Clotted blood
- Saliva

Specimen Collection/Transport Conditions:

Saliva

Oral fluid (saliva) specimens should be collected using a foam swab supplied by the NVRL or using commercially available collection devices such as OraCol™ or OraSure™. Please contact the laboratory for further information.

Serum / Clotted Blood

For serological investigations serum samples (>1ml) or container of clotted blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder).

Testing Frequency: Weekly
Turnaround Time: 5 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Mumps virus Serology

Test: Mumps virus detection using serology techniques

Sample Types:

- Serum
- Clotted blood
- Saliva

Specimen Collection/Transport Conditions:

Saliva

Oral fluid (saliva) specimens should be collected using a foam swab supplied by the NVRL or using commercially available collection devices such as OraCol™ or OraSure™. Please contact the laboratory for further information.

Serum / Clotted Blood

For serological investigations serum samples (>1ml) or container of clotted blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder).

Testing Frequency: Weekly
Turnaround Time: 5 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Neisseria gonorrhoeae

Test: *Neisseria gonorrhoeae* detection using Molecular Qualitative techniques
Please note: Samples requested for Chlamydia trachomatis investigations will also be tested for Neisseria gonorrhoea.

Sample Types applicable:

- Endocervical Swab
- Urethral Swabs
- Urine Specimens
- Eye swab
- Rectal swab

Specimen Collection/Transport Conditions:
Details on specimen collection for combined *Chlamydia Trachomatis* (CT) and *Neisseria gonorrhoeae* (GC) testing are included in the APTIMA collection device kits provided by the NVRL.

Only specimens collected in APTIMA collection devices can be tested in the NVRL.
Testing Frequency: 4 times a week
Turnaround Time: 3 working days.
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Norovirus Electron Microscopy

Test: Norovirus detection using electron microscopy techniques

Sample Types:

- Stool

Specimen Collection/Transport Conditions:

Stool

2 to 5g should be transported in a sterile universal container. Transport medium is not required. For molecular detection of norovirus, specimens should be transported to the laboratory as soon as possible post collection. Alternatively specimens may be stored at $4^{o}C$ for up to 72 hrs before dispatch.

Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

6. Patient's Name
7. Date of birth
8. Hospital No.
9. Date and time of collection
10. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Norovirus Molecular Qualitative

Test: Norovirus detection using molecular qualitative techniques

Sample Types:

- Stool

Specimen Collection/Transport Conditions:

Stool

2 to 5g should be transported in a sterile universal container. Transport medium is not required. For molecular detection of norovirus, specimens should be transported to the laboratory as soon as possible post collection. Alternatively specimens may be stored at 4^{o}C for up to 72 hrs before dispatch.

Testing Frequency: Daily in season/Weekly out of season
Turnaround Time: 3 working days in season/5 working days out of season
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Orf Virus Electron Microscopy

Test: Orf Virus detection using electron microscopy techniques

Sample Types:

- Biopsy Tissue
- Skin
- Vesicle Fluid/Scrapings

Specimen Collection/Transport Conditions:

Biopsy Tissue

Fresh unfixed tissues should be collected aseptically from the sites of probable infection using separate sterile instruments to cut and remove each sample. Place each sample in a separate sterile container and clearly identify each sample type. Specimens should be transported without delay, ideally at 4^{o}C.

Scabs or biopsy material for electron microscopy should be sent in a sterile dry bottle.

Rapidly frozen tissue may also be sent for electron microscopy.

Vesicular fluids / Scrapings/Skin

Vesicular fluids and cellular material from the base of lesions should be collected during the first 3 days after vesicle eruption. Vesicle fluid may be aspirated using a needle and syringe at the base of the opened vesicle can then be scraped with a scalpel. The cellular material and/or the vesicle fluid should be smeared onto the centre of a clean microscope slide and air-dried. Do not fix this material for Electron Microscopy. Place the slide in a plastic slide carrier for transport.

Conjunctival swabs and scrapings for virus isolation should be taken into VTM or equivalent medium. Specimens should be transported without delay, ideally at 4^{o}C.

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Papovavirus Electron Microscopy

Test: Papovavirus detection using electron microscopy techniques

Sample Types:

- Biopsy Tissue
- Urine

Specimen Collection/Transport Conditions:

Biopsy Tissue

Fresh unfixed tissues should be collected aseptically from the sites of probable infection using separate sterile instruments to cut and remove each sample. Place each sample in a separate sterile container and clearly identify each sample type. Specimens should be transported without delay, ideally at 4^{o}C.

Scabs or biopsy material for electron microscopy should be sent in a sterile dry bottle.

Rapidly frozen tissue may also be sent for electron microscopy.

Urine

10ml of urine should be sent in a sterile container. Specimens should be transported without delay, at 4^{o}C.

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Parainfluenza Culture

Test: Parainfluenza detection using culture techniques

Sample Types:

- Nasopharyngeal Aspirate
- Throat Washing

Specimen Collection/Transport Conditions:

Nasopharyngeal Aspirate/Mouth Washings

Respiratory viruses are extremely thermo labile and therefore should be transported to the laboratory at $4^{o}C$ without delay. The quality of the sample is a major determinant in identifying the causative agent.

- Throat swabs and other swabs are obtained by swabbing the affected site and then breaking the swab into Viral Transport Medium (VTM) or equivalent medium
- Nasopharyngeal secretions should be aspirated into a sterile plastic mucous extractor. Transport the mucous extractor with the secretions to the NVRL.

Testing Frequency: Daily
Turnaround Time: 14 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Parainfluenza Direct Immunofluoresence

Test: Parainfluenza detection using direct immunofluoresence techniques

Sample Types:

- Nasopharyngeal Aspirate
- Throat Washing

Specimen Collection/Transport Conditions:

Nasopharyngeal Aspirate/Mouth Washings

Respiratory viruses are extremely thermo labile and therefore should be transported to the laboratory at 4^{o}C without delay. The quality of the sample is a major determinant in identifying the causative agent.

- Throat swabs and other swabs are obtained by swabbing the affected site and then breaking the swab into Viral Transport Medium (VTM).
- Nasopharyngeal secretions should be aspirated into a sterile plastic mucous extractor. Transport the mucous extractor with the secretions to the NVRL.

Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Parvovirus B19 Molecular Quantitative

Test: Parvovirus B19 detection using molecular quantitative techniques

Sample Types:

- EDTA whole blood
- Amniotic fluid
- Plasma

Specimen Collection/Transport Conditions:

Plasma / EDTA Whole blood

Samples for molecular investigation should be separated from EDTA whole blood within 24 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral RNA. These samples should be despatched to the NVRL in a frozen state. Alternatively, whole blood (EDTA) can be sent to the NVRL but must arrive within 24 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Amniotic Fluid

Please contact the laboratory

Testing Frequency: Weekly
Turnaround Time: 7 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Parvovirus B19 Serology

Test: Parvovirus B19 detection using serology techniques

Sample Types:

- Serum
- Clotted Blood

Specimen Collection/Transport Conditions:

Serum/Clotted blood

For serological investigations serum samples (>1ml) or container of clotted blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder)

Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Polyoma virus (JC) Qualitative

Test: Polyoma virus detection using molecular qualitative techniques

Sample Types:

- Cerebrospinal fluid
- Urine
- Serum/Whole Clotted Blood

Specimen Collection/Transport Conditions:

Cerebrospinal fluid

If possible, collect 500µl into a sterile container for virus isolation and molecular investigation. Transport medium is not required. Specimens should be transported without delay, at 4^{o}C.

Urine

10ml of urine should be sent in a sterile container. Specimens should be transported without delay, at 4^{o}C.

Serum/Whole Clotted Blood

Serum/Clotted Blood

Samples for molecular investigation should be separated from Clotted blood within 24 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral DNA. These samples should be despatched to the NVRL in a frozen state. Alternatively, whole blood can be sent to the NVRL but must arrive within 24 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Testing Frequency: Twice Weekly
Turnaround Time: 7 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Polyoma virus (JC) Quantitative

Test: Polyoma virus detection using molecular quantitative techniques

Sample Types:

- Cerebrospinal fluid
- Urine
- Serum/Whole Clotted Blood

Specimen Collection/Transport Conditions:

Cerebrospinal fluid

If possible, collect 500µl into a sterile container for virus isolation and molecular investigation. Transport medium is not required. Specimens should be transported without delay, at 4^{o}C.

Urine

10ml of urine should be sent in a sterile container. Specimens should be transported without delay, at 4^{o}C.

Serum/Whole Clotted Blood

Serum/Clotted Blood

Samples for molecular investigation should be separated from Clotted blood within 24 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral DNA. These samples should be despatched to the NVRL in a frozen state. Alternatively, whole blood can be sent to the NVRL but must arrive within 24 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Testing Frequency: Twice Weekly
Turnaround Time: 7 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Polyoma virus (BK) Quantitative

Test: Polyoma virus detection using molecular quantitative techniques

Sample Types:

- Serum
- Clotted Blood
- EDTA whole blood
- Plasma
- Urine

Specimen Collection/Transport Conditions:

Serum/Clotted Blood / Plasma / EDTA Whole blood

Samples for molecular investigation should be separated from EDTA whole blood/Clotted blood within 24 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral DNA. These samples should be despatched to the NVRL in a frozen state. Alternatively, whole blood (EDTA) can be sent to the NVRL but must arrive within 4-6 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Urine

10ml of urine should be sent in a sterile container. Specimens should be transported without delay, at 4^{o}C

Testing Frequency: Twice Weekly
Turnaround Time: 7 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Respiratory Syncytial virus (RSV) Culture

Test: Respiratory Syncytial virus detection using culture techniques

Sample Types:

- Nasopharyngeal Aspirate
- Sputum

Specimen Collection/Transport Conditions:

Nasopharyngeal Aspirate / Sputum

Respiratory viruses are extremely thermo labile and therefore should be transported to the laboratory at 4^{o}C without delay. The quality of the sample is a major determinant in identifying the causative agent.

- Nasopharyngeal secretions should be aspirated into a sterile plastic mucous extractor. Transport the mucous extractor with the secretions to the NVRL.

Testing Frequency: Daily
Turnaround Time: 14 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Respirator**y Syncytial virus (RSV) Direct Immunofluoresence**

Test: Respiratory Syncytial virus detection using direct immunofluoresence techniques

Sample Types:

- Nasopharyngeal Aspirate
- Sputum

Specimen Collection/Transport Conditions:

Nasopharyngeal Aspirate / Sputum

Respiratory viruses are extremely thermo labile and therefore should be transported to the laboratory at $4^{o}C$ without delay. The quality of the sample is a major determinant in identifying the causative agent.

- Nasopharyngeal secretions should be aspirated into a sterile plastic mucous extractor. Transport the mucous extractor with the secretions to the NVRL.

Testing Frequency: Daily
Turnaround Time: 2 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Rhinovirus Culture

Test: Rhinovirus detection using culture techniques

Sample Types:

- Throat Swab

Specimen Collection/Transport Conditions:

Throat swabs

Respiratory viruses are extremely thermo labile and therefore should be transported to the laboratory at 4^{o}C without delay. The quality of the sample is a major determinant in identifying the causative agent.

- Throat swabs and other swabs are obtained by swabbing the affected site and then breaking the swab into Viral Transport Medium (VTM). VTM can be obtained from the NVRL

Testing Frequency: Daily
Turnaround Time: 14 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Rotavirus Electron Microscopy

Test: Rotavirus detection using electron microscopy techniques

Sample Types:

- Stool

Specimen Collection/Transport Conditions:

Stool

2 to 5g should be transported in a sterile universal container. Alternatively specimens may be stored at 4^{o}C for up to 72 hrs before dispatch.

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Rubella Serology

Test: Rubella detection using serology techniques

Sample Types:

- Serum
- Clotted Blood
- Saliva
- Plasma
- EDTA Whole blood

Specimen Collection/Transport Conditions:

Serum/Clotted blood/Plasma/EDTA Whole blood

For serological investigations serum samples/plasma samples (>1ml) or container of clotted blood/EDTA Whole blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder)

Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Syphilis (Treponema pallidum) Serology

Test: Syphils detection using serology techniques

Sample Types:

- Serum
- Clotted Blood
- Cerebrospinal fluid

Specimen Collection/Transport Conditions:

Serum/Clotted blood

For serological investigations serum samples (>1ml) or container of clotted blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder)

Cerebrospinal fluid

If possible, collect 500µl into a sterile container for virus isolation and molecular investigation. Transport medium is not required. Specimens should be transported without delay, at 4^{o}C.

Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Toxoplasma gondii Serology

Test: Toxoplasma gondii detection using serology techniques

Sample Types:

- Serum
- Clotted Blood
- Plasma
- EDTA Whole Blood

Specimen Collection/Transport Conditions:

Serum/Clotted blood/Plasma/EDTA Whole Blood

For serological investigations serum samples/plasma (>1ml) or container of clotted blood/EDTA Whole Blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder)

Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Varicella Zoster virus (VZV) Direct Immunofluoresence

Test: Varicella Zoster virus detection using direct immunofluoresence techniques

Sample Types:

- Vesicle Fluid

Specimen Collection/Transport Conditions:

Vesicle Fluid

Vesicular fluids and cellular material from the base of lesions should be collected during the first 3 days after vesicle eruption. Vesicle fluid may be aspirated using a needle and syringe and released into a sterile bottle. Alternatively a sample can be collected using a swab which is then placed into VTM. The base of the lesion can be opened and then scraped with a sterile scalpel and the cellular material washed into VTM.

Testing Frequency: Daily
Turnaround Time: 3 working days
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Varicella Zoster virus (VZV) Spin amplified Immunofluorescence

Test: Varicella Zoster virus detection using spin amplified immunofluorescence techniques

Sample Types:

- Please contact the laboratory

Specimen Collection/Transport Conditions:

Please contact the laboratory

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Varicella Zoster virus (VZV) Molecular Qualitative

Test: Varicella Zoster virus detection using molecular qualitative techniques

Sample Types:

- Cerebrospinal fluid
- Skin swab
- Vesicle Fluid

Specimen Collection/Transport Conditions:

Cerebrospinal Fluid (CSF)

If possible, collect 1ml into a sterile container for virus isolation and molecular investigation. Transport medium is not required. Specimens should be transported without delay, at 4^{o}C.

Skin Swab/Vesicle Fluid

Vesicular fluids and cellular material from the base of lesions should be collected during the first 3 days after vesicle eruption. Vesicle fluid may be aspirated using a needle and syringe and released into a sterile bottle. Alternatively a sample can be collected using a swab which is then placed into VTM. The base of the lesion can be opened and then scraped with a sterile scalpel and the cellular material washed into VTM.

Testing Frequency: Daily (CSF)/Weekly (Skin swab/Vesicle Fluid)
Turnaround Time: 3 working days (CSF)/5 working days (Skin swab/Vesicle Fluid)
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Varicella Zoster virus (VZV) Serology

Test: Varicella Zoster virus detection using serology techniques

Sample Types applicable:

- Serum
- Clotted Blood
- Plasma
- EDTA Whole Blood

Specimen Collection/Transport Conditions:

Serum/Clotted blood/Plasma/EDTA Whole Blood

For serological investigations serum/plasma samples (>1ml) or container of clotted blood/EDTA Whole Blood (5-10 ml) be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder)

Testing Frequency: Daily

Turnaround Time: 3 working days (VZV only request)/ 7 working days (Occupational Health screen)

Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone numbers for urgent results

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Viral Haemorrhagic Fevers

Test: Viral Haemorrhagic detection using molecular qualitative techniques

Sample Types applicable:

- EDTA
- EDTA Whole Blood

Specimen Collection/Transport Conditions:

Plasma/EDTA Whole blood

Samples for molecular investigation should be separated from EDTA whole blood/Clotted blood within 24 hours of venepuncture and frozen immediately at –20^{o}C to maintain the integrity of the viral DNA. These samples should be despatched to the NVRL in a frozen state. Alternatively, whole blood (EDTA) can be sent to the NVRL but must arrive within 4-6 hours of venepuncture. **Specimens anti-coagulated with heparin are not suitable for PCR**. Please ensure that whole blood samples for PCR arrive at the NVRL by 3.30 p.m.

Testing Frequency: By arrangement
Turnaround Time: By arrangement
Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone number for urgent results
6. **N.B**. Clinical details and travel information

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.

Note: Viral Haemorrhagic fever (vhf) testing is only done by prior arrangement with clinical team and as per guidelines at:
www.hpsc.ie/hpsc/A-Z/Vectorborne/ViralHaemorrhagicFever/Guidance/
The NVRL must be notified before dispatch from hospital of any suspect VHF specimens. Please contact the laboratory on 01-7161321/7164440.

West Nile Virus

Test: West Nile Virus detection using serology

Sample Types applicable:

- Serum
- Clotted Blood

Specimen Collection/Transport Conditions:

Serum / Clotted Blood

For serological investigations serum samples (>1ml) or container of clotted blood (5-10 ml) should be sent to the NVRL. Blood collected by venepuncture should be allowed to clot. Care should be taken to ensure that the blood samples are fully clotted prior to storage or transport at 2 to 8 ^{o}C. Samples not required for testing within 72 hours should be removed from the clot and stored frozen (-15^{o}C or colder).

Testing Frequency: By arrangement

Turnaround Time: By arrangement

Additional Information: The following essential information should be documented in a legible manner on the specimen container.

1. Patient's Name
2. Date of birth
3. Hospital No.
4. Date and time of collection
5. Contact name and telephone number for urgent results
6. **N.B**. Clinical details.

All of the above details are mandatory when completing request forms and requesting tests on twins or patients with the same surname. Addressograph labels are permitted. The address where results are to be sent should also be clearly highlighted.