Sample Type	Sample Quantity	Sample Container
Endometrium / EDTA Blood /Semen	3ml of Endometrium / EDTA Blood /Semen	Sterile Leak proof container / Blood -EDTA Vacutainer
Body Fluid	3 ml of Body Fluid	Sterile Leak proof container
CSF	2 ml of CSF	Sterile Leak proof tube or Container
Pus / Abscess / Aspirate	2 ml of Pus / Abscess / Aspirate	Sterile leak proof Container
Tissue	Tissue in Normal Saline / Biopsy / Lymph nodes	Sterile Leak proof container
Urine	15 ml of Spot Urine	Sterile Leakproof Container
BAL	2 ml of BAL	Sterile leak proof Container
Sputum	2 ml of Sputum	Sterile leak proof Container
Urine	15 ml of Spot Urine	Sterile Leak proof container
EDTA Whole Blood	3 ml of EDTA Whole Blood	EDTA Vacutainer
LBC	10ml of LBC Material	Thin prep or Surepath LBC Container
EDTA Plasma	3 ml of EDTA Plasma	Sterile Plain Vacutainer
Vaginal Swab	1 Swab with Sufficient Material	Sterile Vacutainer
Amniotic Fluid	10 ml of Amniotic Fluid	Sterile Leak proof container
Stool	5gm of stool	Sterile Leak proof container
Nasopharyngeal Swab	1 Swab Nasopharyngeal with Sufficient Material	Viral Transport Medium Tube
Serum	2 ml of Serum	Gel Top Vacutainer or Plain Sterile Vacutainer
Nasal , Groin, Axilla	1 Swab (Site - Nasal , Groin, Axilla) with Sufficient Material	Sterile Vacutainer
Endocervical	1 Urethral / Endocervical Swab with Sufficient Material	Sterile Vacutainer
Vaginal Discharge	3ml of Discharge	Urethral Discharge Sample In Sterile Container
CVS	2ml of CVS	Sterile Leak proof container
Chorionic Villus	3ml of Chorionic Villus	Chorionic Villus In Sterile Saline
Cord Blood	3 ml of Cord Blood In EDTA	EDTA Vacutainer

Sampling Guidelines test wise

SAMPLE TYPE	SHIPMENT	STORAGE BEFORE TEST	PCR TEST NAME	RNA/DNA
EDTA BLOOD	RT (Within 24hrs)	2-8 C	FACTOR V , JAK 2, EBV, BK, PARVO, VZV, PANFUNGAL PCR	DNA
EDTA PLASMA	2-8 C	Frozen	CHIKUNGUNYA PCR	RNA
SERUM	Frozen	Frozen	HBV VIRAL LOAD, HSV PCR ,HBV DRUG RESISTANCE & GENOTYPING,	DNA
SERUM	Frozen	Frozen	HCV VIRAL LOAD , HCV GENOTYPING, JEV PCR, HCV QUALITATIVE	RNA
PLASMA	2-8 C	Frozen	HIV VIRAL LOAD, HCV VIRAL LOAD ,HCV GENOTYPING, DENGUE PCR, JEV PCR, HCV QUALITATIVE, HIV QUALITATIVE	RNA
PLASMA	2-8 C	Frozen	HIV, HCV VIRAL LOAD, HCV GENOTYPING ,DENGUE PCR,JEV PCR,HCV QUALITATIVE,HIV QUALITATIVE ,HIV2 VIRAL LOAD	DNA
CSF	Frozen	Frozen	CMV,HSV,EBV,VZV,PANFUNGAL PCR,TB PCR	DNA
CSF	Frozen	Frozen	JEV, DENGUE, HIV-1 VIRAL LOAD	RNA
BODY FLUID	2-8 C	2-8 C	TB PCR, GENEXPERT	DNA
TISSUE	2-8 C	2-8 C	TB PCR, GENEXPERT	DNA
SPUTUM,BAL	2-8 C	2-8 C	TB PCR, GENEXPERT	DNA
NASAL SWAB	2-8 C IN VIRAL TRANSPORT MEDIUM	2-8 C IN VIRAL TRANSPORT MEDIUM	H1N1	RNA
URINE	2-8 C	2-8 C	TB PCR, GENEXPERT , CHLAMYDIA PCR	DNA

Sample collection guidelines for Microbioloy tests					
Sample Type	Method of collection and transportation	Sample Quantity			
		Bacterial Culture	AFB culture	Fungal Culture	PCR
Conjunctival/ Eye specimens	Eye specimens should be collected by a medical specialist, an experienced technologist or nurse. • Collect discharge or swab each eye with separate swabs by rolling over conjunctiva. • Corneal scrapings – Collected by ophthalmologist. Send in sterile container or preferably inoculate directly onto media. • Vitreous fluid – Prepare eye for needle aspiration of fluid. Transfer fluid to sterile tube. • Swabs can be transported in Amies transport medium. Transport at the earliest.	Min 1 ml	Min 1ml	Min 1 ml	Min 1 ml
Ear specimens	Ear specimens should be collected by a medical specialist, an experienced technologist or nurse. • Aspirate discharge and collect in a sterile container or collect with a sterile swab. Transport at the earliest. Amies transport medium can be used for transportation.	2-3 ml	2-3 ml	2-3 ml	2-3 ml
Vaginal Swab/ Discharge	1. Collect vaginal discharge on a sterile cotton swab and place in into Amies transport medium with aseptic precautions. 2. Make vaginal discharge smears on clean glass slide for Gram staining.	2-3 ml	2-3 ml	2-3 ml	2-3 ml
Body Fluids	It must be collected by an experienced medical officer. The collection is performed under strict aseptic conditions in sterile container and transported to the laboratory immediately at ambient temperature. Submit 10 mL of the specimen for analysis.	2-3 ml	5-10 ml	5-10 ml	5-10 ml
CSF	It must be collected by an experienced medical officer. The collection is performed under strict aseptic conditions in sterile container. Collect an adequate volume of fluid as recommended below. Transport the specimen at ambient temperature. If a delay in transport occurs, incubate at 37°C or leave the fluid at ambient temperature for transport.	>1ml	5-10 ml	5-10 ml	5-10 ml
Pus/ Wounds	Examination of pus from Wound abscesses, burns and sinuses Closed wound: • Cleanse the skin as for blood cultures. • Aspirate the fluid/purulent material using a sterile needle and syringe. • If no material is obtained, unroof vesicle or bullous lesion and use a swab to collect cells from the base of the lesion. Place in Amies transport media and send to laboratory. • Two swabs are generally collected. One is used for direct microscopic examination and the other is used for the culture. Open wound: Specimens are collected from wounds (ulceration) of different part of the body by touching the infected area with a sterile swab. The swab should be placed immediately in Amies transport medium and send to laboratory. • Clean the sides of the wound surface mechanically, without using a germicidal agent, to remove as much of the superficial flora as possible. • Collect the pus of fluid if possible in a syringe, or collect the discharge in a sterile cotton swab. • Place in appropriate bacterial transport media, if delay is expected. • Two swabs are generally collected. One is used for direct microscopic examination and the other is used for the culture. Note: If the infection is suspected to be due to an anaerobe, aspirate the draining pus into a sterile syringe and immediately put it into a thioglycollate broth.	2-3 ml	2-3 ml	2-3 ml	2-3 ml
Urine	Prevention of contamination by normal vaginal, perineal and anterior urethral flora is very vital. Mid-stream urine is the preferred specimen for urine culture. Whenever possible; urine specimen should be preferably first morning urine sample and before starting antibiotics. The collection method is described as follows: Males • instruct the patient to wash hands and the gender area. • Ask the patient to pull back the foreskin and pass a small amount of urine. Holding back the fold of skin, instruct the patient to pass the middle stream of urine in a sterile container - this is mid-stream urine (MSU). Rest of the urine is passed into the toilet. • Place the lid, secure tightly and rapidly transport to the laboratory. Females • Instruct the woman to wash hands with soap and water before collection of specimen. • Patient should undress in a suitable room, spread the labia and cleanse the vulva and labia thoroughly using soap and water. Rinse with water and dry. • With the help of index and middle finger of left hand separate the vaginal folds apart and then ask the patient to pass urine, discarding the first part of the stream and collecting MSU in a sterile container. • Transport the specimen to the laboratory at the earliest after properly securing the lid. In infant and young children • Ask the child to drink water or any other liquid. • Clean the external genitalia and let the child be seated in the lap of the mother/nurse/attendant. • Encourage the child to urinate and collect the same in sterile container. • Cover the container tightly and rapidly transport to the laboratory for processing. Collection of urine from catheters or bag should be avoided as this does not reflect the accurate picture. Urine Specimen Collection (Catheterized) Catheterized specimen is to be collected by a trained nurse or medical personnel. • Place patient in a comfortable supine position. If female, have legs drawn up with heels together and knees spread wide apart.	10 ml	20-30 ml	20-30 ml	20-30 ml
urine C&S Preservative Tube	1. Ask patient to collect clean catch midstream urine sample in a sterile container. 2. Place sterile urine container upright on clean, flat surface. 3. Place tip of transfer straw into urine specimen. (Container may be tipped at an angle if specimen volume is limited). 4. Place the evacuated tube into the cavity on the cap with the stopper down. Advance the tube over the puncture point to pierce the stopper. 5. Hold tube in position until filled. The tube vacuum will fill the tube with the desired volume. 6. Remove tube from device. 7. Mix all urine tubes 8 to 10 times by inversion. (To ensure complete dissolution of the preservative.) 8. Lift transfer straw from cup and allow specimen to drain. Discard transfer straw in a biohazard container for sharps. 9. Label evacuated tubes for transport to the laboratory.				
Sputum	• Early morning sputum is the preferred sputum specimen. • Sterile, wide mouth container should be used for specimen collection. • The patient is instructed to rinse his/her mouth with plain water before bringing up the sputum. • Instruct the patient to inhale deeply 2-3 times, cough up deeply from the chest and spit in the sputum container by bringing it closer to mouth. • Make sure the sputum specimen is of good quality and not saliva. A good sputum specimen is thick, purulent and sufficient in amount (2-3 ml). • Transport immediately at ambient temperature. Refrigerate(2-8°C)if a delay of more than one hour is anticipated • Assure patient cooperation to get an adequate specimen. Metropolis will determine the number of squamous epithelial cells present for specimen adequacy.	2-3 ml	2-3 ml	2-3 ml	2-3 ml
Semen	• Sexual abstinence is required for atleast 3days and not more than 7 days. • Instruct the patient to pass urine before specimen collection. • The patient is advised to wash hands and penis with soap and water .Dry thoroughly before collecting the specimen. • In a sterile container semen is to be collected by masturbation. • Lubricants, condoms should not be used for specimen collection. • If transported, to be transported at the earliest at ambient temperature. Do not expose to extremes of temperature. • Semen should be accepted only for walk-in patients within half -hour of collection.	2-3 ml	Not Appropriate Specimen	2-3 ml	2-3 ml
Bronchial Brush/Washing/Lavage/Aspirate	This technique should be performed by an experienced medical officer, Nurse. Collect in sterile leak proof container. Transport in a sterile container at 2-8°C for cultures.	2-3 ml	2-3 ml	2-3 ml	2-3 ml
Urethral Discharge	1. Do not allow patient to urinate for at least one hour prior to collection. 2. Take a sterile swab moistened with sterile normal saline. 3. Collect a specimen of pus/purulent discharge on a sterile cotton swab. Insert the swab in Amies transport medium by maintaining aseptic conditions as far as possible. The specimen is transported immediately at ambient temperature. 4. For Gram staining make a smear of the discharge on a slide.	2-3 ml	2-3 ml	2-3 ml	2-3 ml
Genital specimens	Males • Collect the specimen in the morning before the patient has voided urine. • If necessary, clean the meatus with a swab moistened in normal saline or plain lukewarm water. • Exert a slight pressure on penis so that a drop of pus appears at meatus. • Remove the pus with a sterile inoculating loop or apply directly to a clean glass slide. • If no pus appears, obtain by prostatic massage. • Prepare smears on two different slides by spreading the smear as thinly as possible. • Anorectal specimens are collected by inserting a swab 4-5 cm into the anal canal. Females • Discharge/swab is collected by a medical officer/gynaecologist. • In case of chronic gonorrhoea, the specimen should be taken just before or after the menstrual period. • Insert the sterile swab 2-3 cm into the cervical canal and rotate it for 5-10 seconds to permit absorption of the exudate. • Before inoculating the culture or transport medium, it is desirable to prepare a smear for microscopy. Prepare the slides in duplicate by rubbing the pus swabs over a clean slide in a thin film. To obtain a thin homogenous film, roll swab onto a clean slide and allow the smear to air-dry. Transport specimens at the earliest. Stuart's/Amies medium is used as transport medium.	2-3 ml	2-3 ml	2-3 ml	2-3 ml

Throat Swab	Swab should be collected by a medical officer or by a experienced technician. • Use a cotton or Dacron swab. • Use a tongue blade and an adequate light source to ensure proper visualization. • Examine the inside of mouth. Look for inflammation, exudates, pus or presence of any membrane. • Depress the tongue. • Swab the inflamed area of the throat, pharynx or tonsils with a sterile swab taking care to collect the pus or piece of membrane. • Take care not to touch the buccal mucosa or tongue (prevent contamination with saliva). • Transport in sterile transport tube at ambient temperature.	2 Swabs	Not Appropriate Specimen	2 swabs	1 swabs
Nasal Swab	This is an inappropriate specimen for anything other than assessment of staphylococcal colonization (MRSA screening). Insert the sterile cotton swab gently into one or both anterior nares rotate to collect mucus membrane cells and withdraw. Send the collected swab immediately to the laboratory or put in Amies transport medium if delay expected.	2 Swabs	Not Appropriate Specimen	2 swabs	1 swabs
Stool	Faecal specimens for the etiological diagnosis of acute infectious diarrhea should be collected in the early stage of illness and prior to treatment with antimicrobials. A stool specimen rather than a rectal swab is preferred. • Antacids, anti-diarrhea medication or oily laxatives should not be used prior to collection of the specimen. • Do not collect more than 2 specimens/patient without prior consultation with clinician. • Test stool for Clostridium difficile toxin for all patients with clinically significant diarrhea and a history of antibiotic exposure. • Specimens should not be sent for inpatients after 3rd day of hospitalization without prior consultation. • The faeces specimen should not be contaminated with urine. • Do not collect the specimen from bed pan. • Collect the specimen during the early phase of the disease and as far as possible before the administration of antimicrobial agents. • Place specimen in a clean leak proof container and transport to lab within 2 hours. If more than 2-hour delay is expected then place in Cary- Blair transport medium. If Cary Blair not available transport under refrigeration (2-8°C). • If a stool specimen is not available, the following are suitable alternatives for culture: ➢ A swab of rectal mucus, or ➢ A rectal swab inserted one inch into the anal canal.	1 to 2 gm	Not Appropriate Specimen	1 to 2 gm	1 to 2 gm
Rectal Swab	Insert sterile swab well into the rectum and rub. Repeat until visible fecal material adheres to the swab. Put the swab in Cary-Blair transport medium, and send to the laboratory.	2 Swabs	Not Appropriate Specimen	2 swabs	1 swabs
Tissue/bipsy	Sterile instruments should be used for each tissue. Place each tissue into separate sterile container with sterile saline and transport the specimen at ambient temperature.	1-2cm	1-2cm	1-2cm	1-2cm
Hair	• Scrape the scalp with a blunt scalpel. • Place specimen in a dry sterile container. • Transport at ambient temperature. • The following specimens are also acceptable: ➢ Hair stubs ➢ Contents of plugged follicles ➢ Skin scales ➢ Hair plucked from the scalp with forceps Note: Cut hair is NOT an acceptable specimen.	Not Appropriate Specimen	Not Appropriate Specimen	5-10 hairs	NA
Nails	• Cleanse the nail with 70-95% ALC. • Remove the outermost layer by scraping with a scalpel. • Place specimen in a dry, sterile container. • Transport at ambient temperature. • The following specimens are also acceptable: ➢ Clippings from any discolored or brittle parts of nail. ➢ Deeper scrapings and debris under the edges of the nail.	Not Appropriate Specimen	Not Appropriate Specimen	5-10 Nail clippings	NA
Skin	• Cleanse the skin with 70-95% alcohol. • Collect epidermal scales with a scalpel, at the active border of the lesion. • Place specimen in a dry, sterile container. • Transport at ambient temperature.	Not Appropriate Specimen	Not Appropriate Specimen	Skin Scrappings	NA
Plasma		NA	NA	NA	3ml of EDTA Plasma
Serum		NA	NA	NA	3ml of Serum in Gel Vacutainer
EDTA Whole Blood		NA	NA	NA	3ml of EDTA Whole Blood
Stool for GI Panel (Biofire)	1. Antacids, antidiarrheal medications or oily laxatives should not be used prior to specimen collection. 2. Do not collect the specimen from bed pan. 3. For biofire filmarray test Stool sample is preferred in Cary Blair transport media. 4. Faeces sample should not be contaminated with urine sample.	5ml freshly passed stool sample preferably in Cary blair transport medium	Not Appropriate Specimen	Not Appropriate Specimen	NA
Respiratory panel (Biofire test)	1. Patients should not have taken any antibiotics, antl cough medications, cough syrups, lozenges before submitting the samples. 2. Avoid hot beverages such as hot tea , hot coffee etc immediately before swab sample collection. 3. Provide any clinical / medical history including treatment details as well as other investigations performed	Nasopharyngeal swab in Viral transport medium (VTM)	Not Appropriate Specimen	Not Appropriate Specimen	NA
Pneumonia panel (Biofire Test)	1. Patients should not have taken any antibiotics, antl cough medications, cough syrups, lozenges before submitting the samples. 2. Avoid hot beverages such as hot tea , hot coffee etc immediately before swab sample collection. 3. Provide any clinical / medical history including treatment details as well as other investigations performed	Sptum, BAL in sterile container	Not Appropriate Specimen	Not Appropriate Specimen	
Meningitis/ Encephalitis panel (Biofire Test)	1.Sample collection to be done in sterile leak proof container. 2. Sample to be submitted preferably before taking any medications/ antimicrobials/ antiviral medicines. 3. Provide any clinical / medical history including treatment details as well as other investigations performed.	Min 500 ul CSF in sterile container	Not Appropriate Specimen	Not Appropriate Specimen	

NH1N1 PCR TESTING

MATERIAL REQUIREMENTS FOR SAMPLE COLLECTION:

S. No	Materials	Pack Size	Manufacturer
1	HiViral Transport kit (MS1760)	50 No.	HiMedia
2	HiViral Nylon Flocked swabs (PW 1172)	50 No.	HiMedia
1 & 2 come together as single kit in one pack. Hence buy an additional pack of 50 nos. of PW1172 separately to collect 2 swabs for each patient			
3	N 95 mask	10 Nos.	Kevin Scientific Products
4	Disposable gowns	1 No.	Kevin Scientific Products
5	Goggles	1 No.	Kevin Scientific Products

SAMPLE COLLECTION INSTRUCTIONS:

General instructions:

1. **Use PPE like N95 mask, disposable gowns, goggles and gloves before collecting the samples.**
2. **Identify and isolate a separate area / room for sample collection.**
3. **Disinfect the collection area with atleast Lysol mop / fogging (preferably) to prevent infection.**

Swabs

Ideally, swab specimens should be collected using swabs with a synthetic tip (e.g. polyester or Dacron®) and an aluminum or plastic shaft.
Swabs with cotton tips and wooden shafts are not recommended & Specimens collected with swabs made of calcium alginate are not acceptable.
The swab specimen collection vials should contain 1-3ml of viral transport medium (e.g. containing, protein stabilizer, antibiotics to discourage bacterial and fungal growth, and buffer solution).

NOTE: TWO swabs (Nasopharyngeal and throat swab) to be collected for each patient by the following methods.

1. Method of collecting a Throat swab :

Hold the tongue down with the depressor. Use a strong light source to locate areas of inflammation in the posterior pharynx and the tonsillar region of the throat behind the uvula.
Rub the area back and forth with the swab. Withdraw the swab without touching cheeks, teeth or gums and insert into a screw-cap vial containing viral transport medium.
Break off the top part of the stick without touching the tube and tighten the screw cap firmly.
Label the specimen containers with patient's name type of specimen and date of collection.
Complete the laboratory request form.

2. Method of collecting Nasopharyngeal Swabs (per-nasal and post nasal swab)

- **Seat the patient comfortable, tilt the head back.**
- **Insert a flexible swab beneath the inferior turbinate of either nostril or leave in place for a few seconds and move the swab upwards into the nasopharyngeal space.**
- **Rotate the swab on the nasopharyngeal membrane a few times; slowly withdraw with a rotating motion against the mucosal surface of the nostril.**
- **Remove the swab carefully and insert it into a screw-cap tube containing transport medium.**
- **Repeat the procedure in the other nostril using a new sterile swab the tip of each swab is put into a vial containing 2-3 ml of viral transport media (VTM), and the applicator stick is broken off.**
- **Label vial with patient's name, specimen type & date of collection; complete lab request form.**

3. Collect BOTH swabs - Nasopharyngeal and throat swab -one each for each patient and put both the swabs into same collection (Transport Medium) tube.

4. Sample storage: Refrigerate (4 - 8 °C) for storage up to 48 hours. Deep freeze (-70º C) for longer storage. Back-up sample for future testing should be kept at -70º C.

5. Sample transport: Pack the specimen in ice pack to maintain the cold chain. Use Absorbent cotton, tissue paper or waste newspaper for wrapping primary container.
Secondary container to hold the primary container like bigger tube or sealed plastic bag. Insulated ice box with ice pack, sample proforma fastened on to the secondary container.

6. Sample handling and testing guidelines: Keep the sample at room temperature for 30 min to bring the specimen to RT, and cut the specimen side of the swab in the VTM containing tube, vortex the tube vigorously and remove the swabs from tube using forceps. Take 200µl of VTM in the tube and use it for RNA isolation.