



Draft Influenza Pandemic Plan

Part 6

Laboratory Guidelines
Hospital and Community
Laboratories

Waikato, Lakes and Bay of
Plenty DHBs

Version of 19 December 2005
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Laboratory Guidelines for Pandemic Influenza

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Introduction

Definition:

Pandemic Influenza

PI is human to human transmission occurring in several continents.

Emergence of a new Haemagglutinin subtype within Influenza Type A is presumed to be the key requirement. Currently, an H5N1 epizootic is considered a potential source.

Severity is unknown and could theoretically range from common cold to 50% mortality as found with human cases of HPAI H5N1 in Asia in 2004-5.

Transmissibility is unknown and could range from highly infectious like current seasonal influenza to $R_0 < 1$ when basic Infection Control procedures are used, like SARS.

Pandemic Influenza Clinical Case Definition

Acute onset fever $\geq 38^{\circ}\text{C}$, cough and sore throat and cough

PLUS:

- Been in contact with (within 7 days prior to onset of symptoms) a confirmed case of PI while this case infectious

OR

- Recent (within 7 days prior to the onset of symptoms) visit to a poultry farm or contact with birds in an area know to have avian influenza

OR

- having worked in a laboratory (within 7 days prior to onset of symptoms) that is processing samples from persons or animals that are suspected of PI or avian influenza infection

Avian Influenza

AI is human cases of zoonotic HPAI H5N1, which is of concern due to its high case fatality rate (Lancet 18 Mar 2004 350(12) 1179-88). At the time of writing, this is minimally transmissible between humans, if at all. However, stringent infection control precautions and active antiviral treatment of cases are recommended. H7N7 can also cause human infection but is less severe and not covered by this protocol. (Lancet 2004 363 587-93).

Laboratory Testing for Avian Influenza

It is anticipated that no more than one or two cases of Avian Influenza will be present in NZ at once and they would have clear links to Asian exposure or commercial or migratory birds within NZ. Waikato laboratory won't perform testing but will deliver specimens urgently to Auckland Hospital laboratory for H5 and Matrix PCR. Clinicians should liaise with the Clinical Microbiologist at Waikato or the Clinical Virologist at Auckland Hospital to arrange this. Safety procedures and specimen selection for PI may be used.

Laboratory Outputs:

- i) Presence/Absence detection:
 - Regional arrival for initiation of oseltamivir deployment
 - Testing of suspect cases once Pandemic Influenza occurs elsewhere
 - Cluster recognition for “stamping out”
 - 5 – 10 specs per outbreak
- ii) Positive Predictive Value of clinical Influenza Like Illness Syndrome
 - To guide strategy for empiric oseltamivir use
 - Require random sample from standardised sentinel source eg ED
- iii) Recognition of end of activity
- iv) Diagnosis of individual cases
 - Differential diagnosis of other treatable causes
 - Stopping oseltamivir if not Influenza
 - Recognition of atypical infection in prophylaxed people
- v) Identification of immune individuals
 - For future deployment without PPE, vaccination or oseltamivir

Strategy for Pandemic Influenza Lab Testing:

Lab testing capacity is limited. Planning and prioritisation of which samples to test will enable the most benefit to be obtained from a finite number of tests. Initial anticipated capacity is 20 PCR tests x 5 days a week.

Criteria for test selection in order of priority are:

- The most sensitive (to give greatest assurance from negative results)
- Good specificity (to avoid false alarms)
- Reliability
- Safety
- Speed
- Cost

The standard test

- This will be PCR for Matrix, H5 and a housekeeping RNA target (specimen adequacy control).
- In Phase 2, the first positives in each region should be confirmed by testing in another lab.
- Duplicate specimens should be taken for this purpose.

Immunofluorescence is not yet available.

Serology is not yet available but samples should be stored for later testing in Phase 5.

Culture may occur for research purposes once the virus is established (Phase 4 below).

Activation of Lab PI Activity

Based on Alert Levels

NZ MoH declaration

or WHO declaration

or Direction of Waikato Clinical Microbiologist

Pandemic Phases and Role of Laboratory

Stage	Strategy	MoH/DHB ALERT CODE	Trigger	Goal	Laboratory Role	Test Strategy
1	Planning Plan for it	WHITE (Information/advisory)	Interpandemic period	Plan to reduce the health, social and economic impact of a pandemic on New Zealand	Develop testing strategy for PI	No PI testing. Suspected HPAI samples referred to Auckland.
		YELLOW (Standby)				
2	Border Management Keep it out	RED (Activating)	Human-to-human transmission overseas (or very high suspicion) OR Australia and/or Singapore close their borders	To keep pandemic influenza out of New Zealand	Implement enhanced surveillance activities	Test suspected cases by PCR, rapid turnaround, Clinical Microbiologist to approve each sample. Many false alarms anticipated.
3	Cluster Control Stamp it out		Human pandemic case/s found in New Zealand	To control and/or eliminate and clusters that may be found in New Zealand	Identify and type any PI cases as soon as possible	5 – 10 spec per outbreak. Approval of Clin Micro.
4	Pandemic Management Manage it		Multiple (>10) clusters at separate locations, or clusters spreading out of control	To reduce the impact of pandemic influenza on New Zealand's population	Case management and cluster investigation Surveillance	Surveillance. Not routinely test individual patients.

5	Recovery Recover from it	GREEN (Stand down)	Population protected by vaccination, or pandemic abated in New Zealand	To expedite the recovery of population health where impacted by the pandemic, pandemic management measures, or disruption to normal services	Test immune status of individuals Review testing strategy for future pandemics. Prepare for further waves.	Confirmation of remnant activity. Serological testing for immunity. Review of epidemiology and ecology.
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Diagnostic Tests

Criteria for a Laboratory Confirmed Case

The preferred assay during the early phases of a pandemic response will be PCR. The PCR assays used will generate expected sized products for influenza A matrix gene and for appropriate H and N typing. If the test is run without a positive control, products should be confirmed by sequencing and comparison with sequences in deposited databases.

A negative PCR result does not rule out the presence of influenza virus.

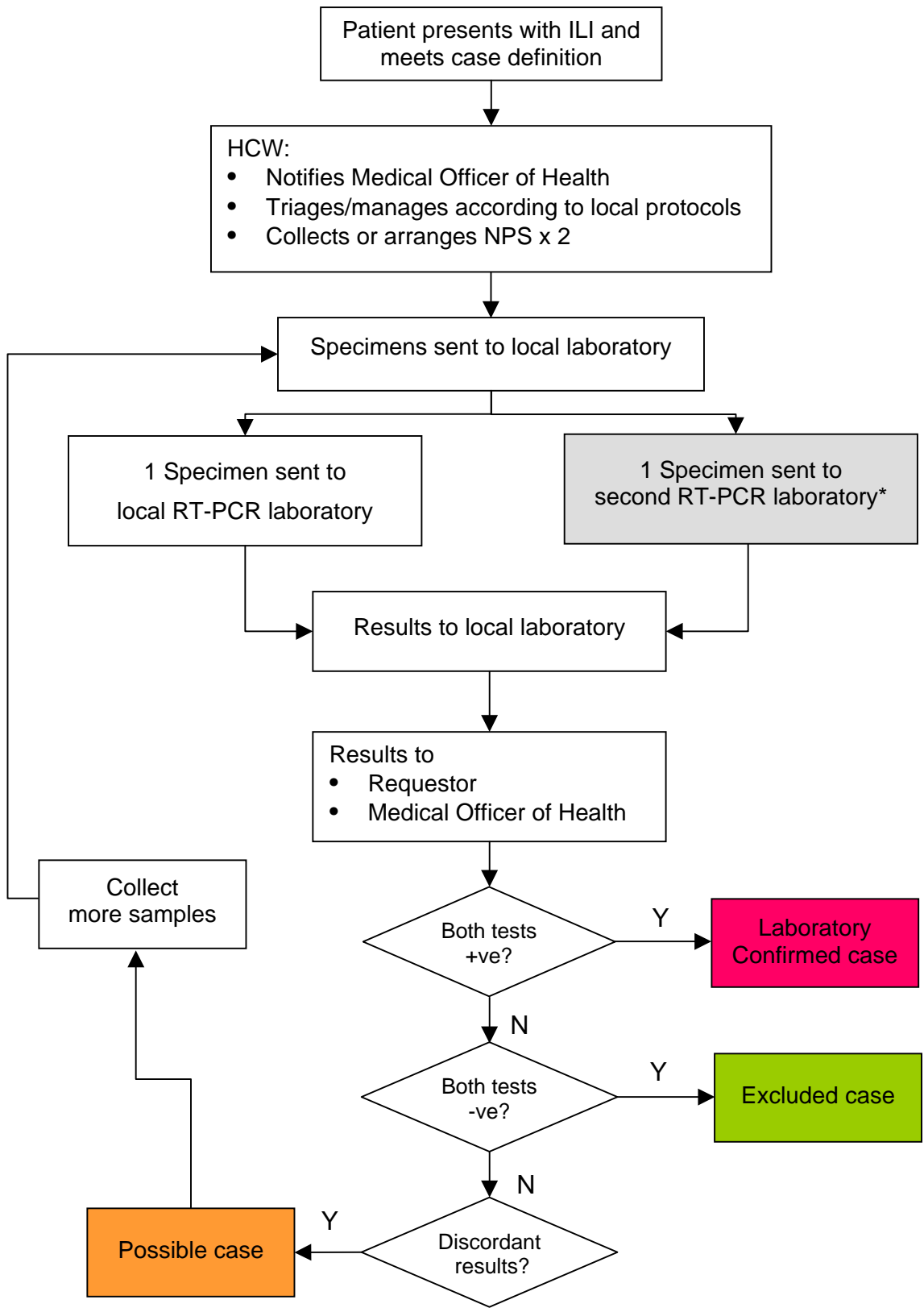
Results should be interpreted together with the available clinical and epidemiological information.

In initial stages, positive results should be confirmed by testing at another center in NZ. The variety of techniques in use will give some assurance against false positives.

The WHO recommends that all laboratory results for influenza A/H5, H7 and H9 during the interpandemic and pandemic alert periods should be confirmed by a WHO H5 Reference Laboratory. (Melbourne has the only WHO Reference Laboratory in the Southern Hemisphere for this).

Flow Diagram for Laboratory Diagnosis

Diagnostic Strategy in Patients with Suspected Avian Influenza Infections (Border Control Stage).



*This step is only for the Border Management phase. The need for collection of a second specimen for concurrent confirmatory testing will be dropped when we move on to the Clinical Management phase.

ILI = Influenza-like illness
 HCW = Health Care Worker
 NPS = Nasopharyngeal Swab

Rapid tests for influenza

Commercially available rapid diagnostic tests such as immunochromatographic cards may be applicable for Pandemic Influenza.

All rapid testing steps should be performed in a Class II Biological Safety Cabinet with the worker wearing PPE.

Recommended Pandemic Use: **These tests should not be used during the early stages** of a pandemic due to low sensitivity. They may, however, have a use for the triaging of patients in healthcare settings once a pandemic virus is spreading

Immunofluorescence assay

Immunofluorescent assays (IFA) are widely used for the rapid non-type specific laboratory diagnosis of influenza A and B virus infections. These tests can provide a result within 2-4 hours. The sensitivity of these assays in comparison with cell culture ranges from between 70-100%; specificity 80-100%. These assays use commercial reagents, which are widely available in New Zealand, and most are capable of detecting H5N1 influenza. Specific subtyping reagents are becoming available. Positive H5 control slides (containing irradiated cellular material) are available from VIDRL but in very short supply presently.

Sample preparation should be performed in a Class II Biological Safety Cabinet with the worker wearing PPE

Once alcohol fixation has been completed, the sample is no longer infectious.

IFA usually require NPS, NPA or nasal wash samples. Additional infection control precautions should be taken when collecting these samples.

Recommended Pandemic Use: **This test should not be use during the early stages** of a pandemic due to low sensitivity.

Nucleic Acid testing

The Waikato preferred platform will be Lightcycler real time PCR.

- Duplicate specimens should be collected from patients during Phase 2 (Border management – presence absence testing) for testing at a second laboratory. This is to reduce the technical uncertainties associated with deployment of unvalidated assays in a situation where the results are highly critical.
- Three targets will be used:
 - Matrix gene – detects all subtypes of Influenza A.
 - Haemagglutinin gene – H5 specific primers. H5 primers in current use will detect avian H5 strains circulating since 1997. Drift may compromise the efficiency of probes. Gel electrophoresis may be necessary to ensure specificity.
 - Housekeeping RNA – confirmation of specimen and extraction and reverse transcription adequacy. 18s or beta 2 microglobulin may be used.

Waikato will endeavour to provide these tests locally, maintaining operational independence not compromised by transport difficulties or capacity constraints in

other centers. These tests are also available at Auckland A+ Laboratories, ESR, Porirua (National Influenza Centre) and Canterbury Health Laboratories (Christchurch).

Nucleic acid extraction should be conducted in a biosafety cabinet. Once extracted and placed into a new tube, the specimen is not regarded as infectious. It can then be processed in accordance with standard methods

Recommended Pandemic Use: During the early stages of a pandemic Matrix PCR and H5 specific PCR will be required. Once the identity of the pandemic virus is known, subtype-specific assays may only be required for primary diagnosis. Once cases are widespread in the community, subtype-specific diagnosis may become superfluous, unless multiple strains are circulating.

Viral cell culture and rapid cell culture

In stage 2 and 3, viral culture activities at Waikato Hospital should be suspended to avoid the possibility of accidental escape of culture amplified virus. Viral culture procedures, with the exception of the initial inoculation of cultures with the primary specimens, should be performed in a PC3 facility using PC3 work practices.

The characterisation of viruses recovered in cell culture should be undertaken in a PC3 facility.

Viral culture using Madin Darby Canine Kidney (MDCK) cell lines will detect potential new pandemic strains. Methods available include tube culture, which may take 4-7 days and multiwell plate culture, 1-3 days. PCR should be used for the characterisation (typing and subtyping) of any cell culture isolates. Monoclonal antibodies may become available for typing and subtyping by IFA..

Standard diagnostic virology laboratories should not attempt cell culture for any virus from specimens of suspected PI cases. If viral culture from respiratory samples is to be attempted, it should be in the PC3 containment laboratory at Wallaceville (see Appendix 1 for shipping details for virology at ESR/Wallaceville)

Viral culture tubes should not be opened (e.g. for media change) until PCR results are available (and negative).

Recommended Pandemic Use: During the early stages of a pandemic, samples for virus culture known to be positive for A/H5 should be forwarded to ESR which has access to PC3 facilities. If positive PCR results are obtained and cell cultures have already been inoculated, they should not be opened and the Clinical Microbiologist should be consulted urgently.

Serology

The serological diagnosis of pandemic influenza is likely to be of limited use during the initial stages of a pandemic. However serological testing may be helpful for exclusion of infection or for epidemiological purposes. Further discussion needs to occur over the possible use for the screening of individuals undergoing post-exposure prophylaxis with antivirals. Currently microneutralization assays detect

antibodies 10-14 days after the onset of illness due to avian influenza A/H5N1 virus. Once a novel virus adapts to humans conventional HI assays may be applicable. DFA is likely to be the preferred test at Waikato Hospital as it is currently in use and seroboosting in the context of a consistent clinical features and an influenza pandemic should give assurance of acquired immunity to the PI.

Any step that may produce aerosols, especially pipetting, should be performed in a biosafety cabinet. As noted earlier, once spun, separated and placed into a new tube, automated serology may be performed in the normal way.

Recommended Pandemic Use: Acute and convalescent serum samples should be collected and stored at -20°C . Validation of interpretation for immunity will be necessary.

Risk of Laboratory Acquired Infection:

While Pandemic Influenza is not considered established in a region, it should be managed as a Level 4 pathogen.

Routine precautions for collection, transport and laboratory handling should be followed at all times. Procedures will be arranged to avoid culture amplification of virus. Patient samples will be no more infectious than the patient themselves and their waste.

Respiratory samples are expected to be the most infectious. The risk from blood has not been determined but infectious virus may well be present.

Anticipated key risk events are:

Centrifugation

Viral culture

Accidental splashes, spills and needlesticks

Accidental Exposure

Exposures to mucous membranes or percutaneously should be documented and managed promptly. Most cases will warrant prophylactic oseltamivir initiated within 6 hr.

Suspending Viral Culture

When Pandemic Influenza is declared present anywhere in the world, viral culture should cease. The diagnostic benefits of culture results for any viral infection are outweighed by the risk to the Waikato population and laboratory staff due to production of high titre cultures of PI virus. Direct Immunofluorescence and PCR will be used.

Non Viral Specimen Testing

Processing in Microbiology, Biochemistry, Haematology and Histopathology will entail some risk but it will be small. These tests will be of great benefit to patients and should continue should be offered.

Decontamination

Work surfaces and equipment should be decontaminated after specimen processing. Standard laboratory decontamination protocols using 0.5% hypochlorite are sufficient.

Specimens for Influenza Testing

Procedure for submitting specimens and turnaround time

- Contact the virology laboratory 07 8398726 x8530 or Clinical Microbiologist via Waikato Hospital switchboard 07 8398899 to discuss the case and determine whether testing is indicated and time frame.
- Waikato Hospital virology lab can arrange urgent delivery of suitable swabs to General Practices or other locations in the Waikato.
- Routine specimen referral pathways should be used where feasible but special arrangements may be made for one off delivery of specimens direct to the Waikato Hospital laboratory. Specimens are not to be sent by taxi or non medical couriers.
- Turnaround time is expected to be 24 hr (one batch daily) weekdays.
- Urgent or out of hours testing may be negotiated case by case. There is no rostered 24 hr call service.

Preferred specimen types

Upper respiratory tract samples should be collected. The specimens of choice are a Nasopharyngeal swab (NPS) and throat swab (TS). Swabs pose a lower risk during collection to staff than do nasopharyngeal aspirates (NPA) or nasal washes, both of which may generate aerosols and must be performed in a controlled environment. NPAs are only recommended when a negative pressure room is available. Invasive procedures (such as bronchoalveolar lavage or lung biopsy) may also be performed for the diagnosis of virus infection. While all these samples are suitable for testing by RT-PCR and virus isolation, we recommend that only NPS and TS samples be taken.

Other specimens

Depending on the nature of the pandemic virus, other specimens may be appropriate, such as a faecal sample or rectal swab. Low nose swabs are less sensitive, so not a preferred sample in the initial surveillance stage. They routinely taken for RSV testing among children and may be used for comparative (research) purposes and processed for PI testing at the discretion of the laboratory. The optimal sampling strategy will only be available once the illness caused by PI has been defined.

Swab Specification

- Not wood shaft, Not cotton tip.
- Swabs may be sent in virus transport medium (preferred) or replaced dry in the tube they are supplied in.
- SWABS SHOULD NOT BE SENT IN BACTERIAL TRANSPORT MEDIUM (difficult to do PCR).

- **In Phase 2 and early Phase 3, duplicate samples should be taken for confirmatory testing.**

Preferred swab types

Preferred	Cap colour	Brand Name	Cat #	Swab OK	Medium OK
Yes	Green	Virocult	MW 950	Y rigid	Yes
Yes	Blue	Pernasal	MW160	Y flexi	na
	Black	Plain	MW102	Y rigid	na
	Orange	Transwab ENT	MW172P	Y flexi	NO
	Blue	Sterile transport swab Amies w/o Ch	Copan H096N	Y rigid	NO

MW = Medical Wire & Equipment Co

Safety During Collection

It is critical that any person collecting respiratory samples should be properly trained.

The key points are:

Keep yourself safe – wear PPE and know how to put on and remove. Separate instructions will be available for this.

Keep others safe

Label specimen containers outside the room where the patient is before entering

Do not take paperwork into patient's room, including request forms

Keep sample containers separate from all other samples

Alert staff that samples are being taken, to allow time to prepare

Record contact details for patient and requestor – laboratory staff need to know who to notify for critical results

Integrate testing with patient care – don't let concern regarding of PI interfere with diagnosis and management

Labelling Specimens for Pandemic Influenza Testing

Label specimen container and request form "for PI Testing". To ensure laboratories are informed that a specimen received for testing is for suspected pandemic influenza testing, it is vital that the specimen is labelled clearly with this information.

The laboratory should be informed that such a sample is being sent so they can be prepared. In initial stages Phase 2 & 3 samples will generally not be tested unless approved by the Clinical Microbiologist.

Specimens for PI diagnostic testing will be processed separately from those for other tests so need to be unambiguously identifiable. All specimen containers must be labelled with:

Patient name and date of birth (and NHI number if available)

Date of collection

"PI testing please"

Nasopharyngeal Swab

1. Label sample tube with patient identifiers.

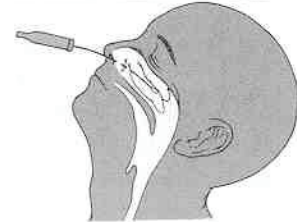
Insert swab into one nostril, parallel to the palate, rotate gently and advance until resistance is felt (one eye often waters when swab is in correct position). Cont ...

Press swab tip on the mucosal surface of the mid-inferior portion of the inferior turbinate (see diagram), leave in place for a few seconds, then slowly withdraw with a rotating motion.

Replace swab into swab collection tube containing virus transport medium (VTM).

Label with patient name, date of birth, and date of collection.

The sample in VTM should be delivered to the laboratory promptly or stored at 4°C



Throat Swab

Label sample tube with patient identifiers.

Get patient to say “ahhh” and vigorously swab both tonsillar areas and posterior nasopharynx. Use tongue depressor to depress tongue to prevent contamination of swab with saliva.

Place swab back into swab collection tube and swab shaft broken.

The sample in VTM should be delivered to the laboratory promptly or stored at 4°C

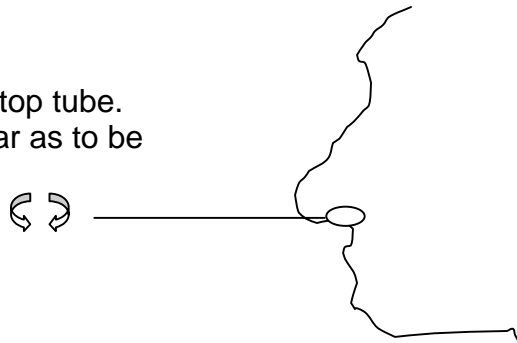
Low Nose Swab

Use rigid virus swab from pink or green top tube.

Insert swab 2 cm into nose, but not so far as to be uncomfortable.

Rotate 2-3 x each way.

Put swab into virus transport medium.



Rectal Swab

This should be taken with the standard viral swab. Although the sensitivity of this specimen type for influenza is not established, it is preferred to a stool specimen due to safety and convenience of transport and handling. A positive result will be specific.

Serology

5 mL blood into red top tube.

Put date of onset of symptoms and list symptoms on request form.

Include home contact phone number and GP address.

Give patient request form for a second sample to be taken in 10 – 14 days.

The two samples need to be tested together to see whether antibodies to influenza virus have increased.

In the later stages (Phase 5) it may be possible to validate a single high titre as indicating protection but initially, seroboosting coincident with Influenza Like Illness or H5 specific seroconversion will be necessary to give assurance of immunity.

Specimen Transport

Short distance eg ward to lab

Specimens should be double bagged. Hand delivery will be most reliable and safe.

By Vehicle.

Double bag plus rigid container. The usual specimen referral pathway is preferred as this will be most reliable. Special arrangements may be deployed for urgent cases. The goal is for the sample to be delivered to the lab without delay.

Between labs

LTSA and IATA formal requirements will be applied. Where an isolate or suspicious organism is being referred to a reference laboratory for further testing, transport the specimen as an Infectious Substance (package according to instruction 602 of the IATA Dangerous Goods Regulations). Telephone contact should be made with the receiving laboratory to facilitate safe and rapid processing of specimens.

See Appendix for information on transport of specimens to BSL3 facility at Wallaceville.

The primary receptacle must be leakproof. If several primary receptacles are placed in single secondary packaging, they should be individually wrapped or separated to prevent contact between them.

There should be absorbent material placed between the primary receptacle/s and the packaging – sufficient material to absorb entire contents of receptacle/s.

It is essential that the laboratory receiving the sample is aware it comes from a potential pandemic influenza case and that it has the facilities required to safely handle it.

Where an isolate is being referred to another laboratory for further testing, then label and transport the specimen as an Infectious substance. Specimens are “diagnostic specimen”.

Specimen processing

Arrival of sample should be notified before samples arrive for testing

The samples will be generally be delivered by hand to the laboratory by the clinician caring for the patient

A pneumatic tube system must not be used to transport specimens

Reception staff will assist with assigning laboratory numbers to the outside of biohazard bags and process request forms for data entry as usual.

DO NOT OPEN ANY BIOHAZARD BAGS IN RECEPTION

Note: Tube opening and separating should occur in a biosafety cabinet by designated personnel before being transferred to other areas for routine analyses. A sealed rotor centrifuge should be used whenever possible.

Arrival of samples with no prior warning

The on-call Microbiologist should be contacted immediately if a sample labelled 'PI' arrives without prior warning or discussion. No further handling of the sample should occur except under advice of the Clinical Microbiologist.

Respiratory Samples

All respiratory samples should be treated as highly infectious and processed using the biosafety cabinet in the respiratory laboratory

Smears should be air dried in the cabinet and fixed in alcohol for 5 minutes before processing the normal way for a Gram stain

Culture plates should be inoculated in the cabinet and placed in a bag before incubation

Fluids for cell counts should be placed into the counting chamber in the biosafety cabinet, and microscopy performed while wearing a mask and goggles.

The sample is infectious until:

- Nucleic acid extraction has been completed or
- The specimen has been fixed in alcohol or acetone for 5 minutes or
- Autoclaved

Separation of Blood

Centrifugation should be performed in a sealed bucket rotor centrifuge. Opening of tubes after centrifugation and separation of cells, plasma and serum should be performed in a biological safety cabinet.

The registration of the sample, label printing and labelling of tubes (except for the primary one) can occur in the normal manner.

Staff performing the centrifugation steps must wear PPE as described in section 7.0

The bag containing patient samples must be opened in the safety cabinet

Samples requiring centrifugation should be placed in a sealed centrifuge container
The sealed container can now be taken from the safety cabinet and placed in the centrifuge in the centrifuge cabinet

Balance the sample, then spin for 10 minutes at 3500 RPM

After centrifugation, remove the sealed centrifuge container and return it to the safety cabinet

Any separation of primary tubes will occur in the safety cabinet

The samples should be transferred to a screw top tube before being taken to the core laboratory

Note

For blood samples the initial opening of the primary tubes after centrifugation is thought to be the most dangerous step due to the possibility of aerosols being created. For this reason, this step should always be performed in a biosafety cabinet.

Current opinion suggests that the infectivity of serum or blood samples from PI patients may be less than that of samples containing Hepatitis and HIV viruses. This may change as further information is gathered.

Urine and faecal samples

Splashing is the main danger. Eye and mask protection must be used in accordance with routine laboratory protocols.

Test Methods

These will be developed and updated periodically. Refer to specific method documents.

Draft preliminary notes:

Nucleic acid extraction at the lysis step should be conducted in a Class II biosafety cabinet. Once the sample is lysed and placed into a new tube, the specimen is not regarded as infectious. It can then be processed in accordance with IANZ approved methods. Extraction is the 'bottleneck' time-limiting step.

An RNA control (commercially available) should be included. This is critical during early phases to prevent false negative results due to poor RNA extraction from swab.

Reporting results

Reports to referring clinician and copy to Medical Officer of Health (whether formal lab based notification in place or not).

Decontamination

Work surfaces and equipment should be decontaminated after specimen processing. Standard laboratory decontamination protocols using 0.5% hypochlorite are sufficient.

Retention of Samples

After the analysis of samples has been completed they should be placed in sealed plastic bags and held for the appropriate amount of time in a segregated area in a fridge or freezer as appropriate for sample type

NPS – 3 months at –70°C.

Blood – serum 1 year –20° or –70°C.

Once the samples have been held for the required duration the Clinical Microbiologist will decide whether further storage of selected specimens is required. Disposal should be in the normal manner after autoclaving.

Laboratory and staffing issues

Requirements for laboratory staff

Staff who are in one of the recognised high-risk groups for complicated influenza should be excluded from the collection and processing of samples. They will be needed in other areas.

Laboratory staff prophylaxis

Oseltamivir prophylaxis may be offered to selected staff, as recommended by the NZ Ministry of Health. Postexposure prophylaxis should be considered within 12 hr following any accidental exposure incident.

Laboratory staff should be vaccinated with the most current seasonal influenza vaccine.

As the pandemic progresses, it is anticipated that there will be laboratory staff who will have acquired infection in the community and recovered. These staff members should be preferentially used for specimen collection and processing.

Appendix 1: Referral of specimens to ESR for culture

Minimum PCR positive specimens for viral culture for pandemic influenza

Labs	Early pandemic	Middle pandemic	Late pandemic	Total
Auckland	5	5	5	15
Waikato	5	5	5	15
Wellington	5	5	5	15
ESR*	5	5	5	15
Christchurch	5	5	5	15
Dunedin	5	5	5	15
Total	30	30	30	90

* Note: ESR can serve as a depository for all PCR positive specimens. A minimum number of specimens as listed in the table above will be subjected to viral culture in the PC3 lab in Wallaceville

Appendix 2: Information Sheet – Transport of PI Samples to BSL 3+ facility

NCDI, Wallaceville, Upper Hutt

This section describes a free Courier Service to send PI samples to the BSL 3+ facility in National Centre for Disease Investigation, Wallaceville, Upper Hutt. Specimens shipped to other laboratories should be packaged and dispatched by someone familiar with the IATA shipping requirements for Infectious Substances. If unsure, the larger laboratories will be able to help.

When shipping diagnostic specimens and infectious substances via this service:

- All the documentation required to comply with land and air transport regulations is provided.
- All the packaging required to comply with land and air transport regulations is provided.
- A courier collection service is set up for you.
- Your samples will arrive at NCDI without delay.
- Your shipper will be promptly returned for re-use.

The shipping materials provided for your use consist of:

- An approved infectious substances shipping container, comprising a plastic screw cap shipping container (biobottle) with a bubble bag for protecting the specimens inside a cardboard outer box. The box has interchangeable address cards on it in separate pockets, a clear plastic adhesive backed envelope for the “Dangerous Goods” forms, and a reversible “Infectious Substances” label.
- “Shipper’s Declaration for Dangerous Goods” forms.
- A sample completed “Shipper’s Declaration for Dangerous Goods” form.
- A pre-printed NZ Couriers Charge Label (ESR will be charged for delivery).

Human or Non-Human Laboratory Services Request forms can be supplied on request.

How to send your samples:

1. Put adhesive tape round the caps of any containers of liquid samples and wrap each sample individually.
2. Place your samples in the bubblewrap bag and chill pad inside the plastic inner container. The two sachets of liquid absorbing material are there to soak up any spill.
3. Place any paperwork you are sending with the samples inside the box but outside the biobottle.
4. Swap the address cards around on the outer box so that NCDI is in the "To" pocket and your address card is in the "From" pocket.

The NCDI address is: Project code: 873
National Centre for Disease Investigation
Wallaceville Research Centre
Ward Street
Upper Hutt

(Note: The project code 873 allows the sample receptionist in NCDI to handle it following PC3+ regulations.)

5. Complete in duplicate the "Shipper's Declaration for Dangerous Goods" forms (see sample completed form) by:
 - Filling in your name and address
 - Writing in the weight or volume of the infectious substances
 - Signing the declaration
 - Folding the two forms and place them in the clear plastic envelope on the box.
6. Fill in the "Sender" box of the NZ Couriers Charge Label and attach in the marked space.
7. Phone NZ Couriers contact number 0800-800-841 to arrange pickup of your shipment.
8. Phone or email ESR virology lab (Phone ??????, Lisa.Webber@esr.cri.nz or Sue.Huang@esr.cri.nz) to inform the shipment of PI samples to NCDI. ESR virology laboratory can then prioritise the workload and send the staff to NCDI to do viral isolation and identification for PI.

Further supplies and inquiries:

If you require more shipping containers or materials, contact our Specimen Reception department (Phone: ???????). If you have any queries or suggestions please contact Pam Raynel or Sue Huang (e-mail: pamela.raynel@esr.cri.nz or sue.huang@esr.cri.nz)

Appendix 3: Role of ESR National Influenza Centre by Pandemic Phase

NZ PHASE	MoH/DHB ALERT CODE	WHO NATIONAL REFERENCE	NATIONAL SURVEILLANCE	PUBLIC UNIT, PRACTICE	MAF ANIMAL REFERENCE
<p>Plan for it (Planning) (WHO phases 1-3)</p>	<p>WHITE (Information/Advisory)</p>	<p>*Active communication with NZVLN, MoH, CSL, WHO</p> <p>*Tests: RT-PCR for influenza A matrix & H5N1, H5 IFA, H5 viral culture, HAI typing, Microneutralisation, sequencing</p> <p>*SOPs for biosafety and all H5 tests in PC2/3 *QA panel (H5N1 PCR) for hospital labs</p>	<p>*Develop communication protocols with MoH, WHO</p> <p>*Capacity for weekly, monthly and annual reports</p> <p>*Develop capacity for enhanced surveillance (Database, IT etc)</p> <p>*Develop enhanced surveillance protocol</p> <p>*Frequent training of staff</p> <p>*Develop surge capacity plan</p>	<p>*Develop communication protocols with MOsH</p> <p>*Training, where appropriate, on specimen handling (biosafety, collection, transportation)</p> <p>*information gathering (include media watch)</p>	<p>*MOU for access PC3+</p> <p>*SOP for fast information sharing</p> <p>*Research on influenza at human-animal interface</p>
<p>Keep it out (Border Management) (WHO phase 4)</p>	<p>YELLOW (Standby)</p>	<p>*Integrate lab-component into national plan</p> <p>*Frequent training of staff</p> <p>*Protocols for urgent referral to CSL</p> <p>*Develop surge capacity plan</p>	<p>*Rapid reporting to MoH, MOsH, WHO</p> <p>* Assist study on seroprevalence in risk-groups</p> <p>*Enhance surveillance</p>	<p>*Assist case finding and investigation</p>	<p>*Assist field investigation of farmers and animal workers</p>
<p>Stamp it out (Cluster Control) (WHO phase 5)</p>	<p>RED (Activating)</p>	<p>*Offer diagnostic tests for some DHBs</p> <p>*Offer confirmatory diagnostic service for other hospital labs</p> <p>*Offer viral culture and HAI typing nationally</p> <p>*Urgent referral of isolates/specimens to CSL</p>	<p>*Activate surge capacity</p> <p>*Monitor disease spread & antigenic drift</p> <p>*Assist study on virus pathogenicity and transmissibility in human</p>	<p>*Enhance surveillance</p>	
<p>Manage it (Pandemic management) (WHO phase 6)</p>		<p>*Monitor disease spread & antigenic drift</p>	<p>*Adjust surveillance</p>		
<p>Recover from it (Recovery)</p>	<p>GREEN (Stand down)</p>	<p>*Resume normal interpandemic function</p>	<p>*Seroprevalence in general population</p>		