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	Version: 1.3 CURRENT	
Section: Bacteriology Procedures	Subject Title: Pandemic Influenza Outbreak Plan for Microbiology	
Prepared by QA Committee		
Issued by: Laboratory Manager	Revision Date: 1/16/2024	
Approved by Laboratory Director: Microbiologist-in-Chief	Next Review Date: 1/16/2026	

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Introduction

When a pandemic outbreak occurs, there will almost certainly be an increase in the demand for Microbiology services. As well, staffing levels will be decreased due to infection among staff and the need for some staff to look after ill family members. In preparation for this, the laboratory has developed the following plan which addresses the extent of services that will be offered during an outbreak.

The plan is based on the following assumptions:

- 1) The outbreak is estimated to last 8 to 12 weeks;
- 2) Projected from the current workload statistics, there will be an estimated 2-3 times more samples requiring screening during this period;
- 3) Staffing levels are projected to decrease anywhere from 10% to 50% or more;
- 4) Reagents may be in short supply and therefore stockpiling of reagents may be required.

Procedure

- 1) Microbiologist-in-Chief to declare and initiate Pandemic outbreak plan.
- 2) Review safety protocols for current outbreak and implement PPE. [See Safety](#)
- 3) Adjust inventory as required. [See Reagents/Materials/Media](#)
- 4) Prepare for sample receipt. [See Specimen Collection, Transport and Storage](#)
- 5) Prepare for stage-wise reduction of lab services with staff need changes and absenteeism increase. [See Stage-wise Provision of Services](#)
- 6) Follow updated processing and reporting procedures. [See Specimen Processing](#)

Safety

Depending on the nature of the pandemic outbreak, the principle of biosafety protection is to establish multiple layers of protection. The following safety precautions should be adhered to at minimum:



- Personal protection: Laboratory staff should wear personal protective equipment (PPE, see Appendix 1 for details).
- Aerosol and droplet precaution: A Biological Safety Cabinet should be used for all technical procedures that may generate aerosols or droplets (eg, vortexing, opening and pipetting specimen tubes).

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Increased precautions for handling of primary specimens will likely be needed. The use of addition PPE and precautions (gowns, N95 respirators etc.) will be evaluated with each outbreak according to MOH, WHO and CDC guidelines as applicable.

Reagents / Materials / Media

Outbreak supplies sock

Stock levels for supplies related to the outbreak should be ordered based on volumes from the most recent clinical testing samples volumes during peak times of the year if applicable. Volumes of these supplies at peak season should be tripled and ordered at this volume to cover 3 months worth.



The stock levels of the following supplies shall be maintained at all times before an outbreak is identified and ordered as above during an outbreak.

Senior Technologists in the respective areas are responsible for adjusting the supplies in their areas.

Pre Analytical Supplies	
Hospital stock	Laboratory stock
Pandemic outbreak related transport medium or collection containers	Consumables <ul style="list-style-type: none"> • Pipettes (transfer & tips) • Cryovials • Garbage bags Printer labels and film rolls
Specimen collection transport bags (biohazard)	Hospital cleaning solutions (Accel hydrogen peroxide wipes)
	Gloves & related PPE

Analytical Laboratory stock
Pandemic outbreak related testing platform reagents + consumables for current testing method
Pandemic outbreak related testing platform reagents + consumables for alternative testing method

Other microbiology testing supplies to be continuously adjusted during pandemic outbreak based on modified testing frequencies, new sample volume levels and inventory shelf life.

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Specimen Collection, Transport and Storage

Collect, transport and store specimens as per specimen collection instructions of the current laboratory testing protocols.

Depends on the nature of the pandemic outbreak, additional specimen types other than the routine ones maybe accepted upon the approval by microbiologists

Specimens should be submitted to laboratory as soon after collection as possible. Transport specimens as per routine procedure. The primary courier for specimens outside the hospital will continue to be the current contracted companies working with our facilities.

Lifelabs and KJV couriers have been previously contacted and has confirmed that they will continue to provide service during an outbreak. Transportation of specimens from other sites not covered by the current service contracts will be determined by the sending site.

Stage-Wise Provision of Service During Pandemic Outbreak

Staff required to operate for routine testing during a pandemic outbreak will require to be adjusted based on increase on pandemic testing needs and may decrease from volume of routine work submitted. Staffing and testing requirements will be reviewed and adjusted daily following the procedure below. Senior and Charge technologists will be assigned bench work when needed.

A charge technologist will review the staffing levels at the beginning of each day completing following check list [APPENDIX I – DAILY PANDEMIC OUTBREAK CHECKLIST](#)

Duties will be amalgamated when possible. When a level of staff or samples prohibits amalgamation of duties, following testing will be reduced or suspended as below as approved by Microbiologist in chief or designated alternate. Benches related to the applicable pandemic shall be excluded from the list below for reduction/suspension or added to essential services lists.

Note: Phases may have overlap and occur simultaneously

Phase 1: Amalgamation of benches

1. MISC benches
2. WASPLab benches

Phase 2: Reduction of testing frequency for:



- 1) Chlamydia/GC & HPV NAT PCR

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- 2) VZ IgG
- 3) Galactomannan
- 4) PJP PCRs
- 5) Luminex Respiratory Pathogen Panel
- 6) Other Viral PCR Qualitative and Quantitative

Phase 3: Suspend testing in the following order:

- 1) PFGE
- 2) Routine Infection control PCR for primary samples
- 3) Chlamydia/GC & HPV NAT PCR
- 4) Urine cultures
- 5) VZ IgG
- 6) Vaginal screen (Gram and wet prep)
- 7) Stool C&S
- 8) Non-critical gram smears
- 9) O&P sendout

Phase 4: Minimal essential services to be maintained

(Estimated 7 MLA & 15 MLTs required for 24/7 service essential services)

1. Specimen processing
2. Outbreak testing
3. Blood culture testing
4. Sterile body fluid & STAT requests

Specimen Processing



1. Accession specimens that are to be processed as per routine procedures
2. For tests not performed during the pandemic, accession the specimen as per routine and report as indicated in the reporting section below.
 - Specimens that are not tested should be stored as per routine conditions but discarded after 24 hours. Donor related samples should be kept for 10 years.
 - Samples requested for testing once testing resumes which may be preserved by freezing can be stored for future processing if required.
3. For specimens that have been processed, save the specimen as follows after processing:

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Specimen/Test	Storage area / Temperature	Specimen Retention Times
Culture and Susceptibility samples	Not applicable	Discard after processing
Infection Control Swabs	MIRM1 / 4°C	As per routine procedure
Respiratory Specimen other than Throat Swabs C&S	MIFF / -70°C	Indefinitely; re-evaluate post pandemic
Stool C&S	Not applicable	Discard after processing
Serology Specimens	MIRT1 / 4°C	As per routine procedure
Virology samples	MIRT12 / 4°C	As per routine procedure
Respiratory Specimen for Virology	MIRTC / -70°C	Indefinitely; re-evaluate post pandemic



Reporting:

- 1) For all tests performed, report as per routine manual.
- 2) For tests that will not be performed during the pandemic, report as follows:
 “Testing temporarily suspended until further notice” (LIS TEST comment canned message) Status Bacteriology Test as “Final”. For Serology tests, leave status as pending until testing resumes unless suspended.
- 3) For tests sent to a reference or other lab, report as follows:
 “Specimen sent to *reference lab*. Results will be reported when available.”

References



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World Health Organization. WHO recommendations of the use of rapid testing for influenza diagnosis. July 2005:1-10.

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APPENDIX I – DAILY PANDEMIC OUTBREAK CHECKLIST



Date: _____

Items	Status	Checked by (signature):
No. of staff absent		
No. of staff report for duty		
% reduction of staff		
Availability of specialty staff: - Outbreak testing and related procedures		
Staff debriefing		
Assign operating benches as per plan Bench Assignment		
Notify clients of available services		
Check supplies		
Notify vendors of supplies if required to adjust stock levels		

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Record of Edited Revisions

Manual Section Name: Pandemic Influenza Outbreak Plan for Microbiology

Page Number / Item	Date of Revision	Signature of Approval
Annual Review	March 15, 2007	Dr. T. Mazzulli
Annual Review	March 15, 2008	Dr. T. Mazzulli
Annual Reviewed and Live Date	March 15, 2009	Dr. T. Mazzulli
Annual Reviewed	March 15, 2010	Dr. T. Mazzulli
Annual Reviewed	March 15, 2011	Dr. T. Mazzulli
Revised, remove viral culture and DFA	August 02, 2011	Dr. T. Mazzulli
Annual Reviewed	August 02, 2012	Dr. T. Mazzulli
Annual Review	August 22, 2013	Dr. T. Mazzulli
Annual Review Update MSH/UHN Logo Update Header Fix broken links	August 6, 2014	Dr. T. Mazzulli
Added link to Viral Hemorrhagic Fever Lab Biosafety Guidance QFSMI03001 HBV/HCV kits Removed	August 6, 2014	Dr. T. Mazzulli
MDS changed to Life Labs p.2	April 14, 2015	Dr. T. Mazzulli
Virology Manual p.2 changed to Molecular Diagnostics Manual with specimen collection link added to Simplexa manual.	April 14, 2015	Dr. T. Mazzulli
Updated present staffing, current benches	April 14, 2015	Dr. T. Mazzulli
Annual Review	April 14, 2015	Dr. T. Mazzulli
Annual Review Updated MSH logo in header Changed refer to Molecular Manual to Influenza AB & RSV PCR by Focus Diagnostics Simplexa manual. Specimen collection and transport section: removed sputa as acceptable specimen type for influenza testing.	April 2, 2016	Dr. T. Mazzulli
Annual Review	April 15, 2017	Dr. T. Mazzulli
Annual Review	April 20, 2018	Dr. T. Mazzulli
Minor format change	September 14, 2018	Dr. T. Mazzulli
Annual Review	April 23, 2019	Dr. T. Mazzulli
Annual Review Updated procedure for general guidance	April 04, 2020	Dr. T. Mazzulli

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