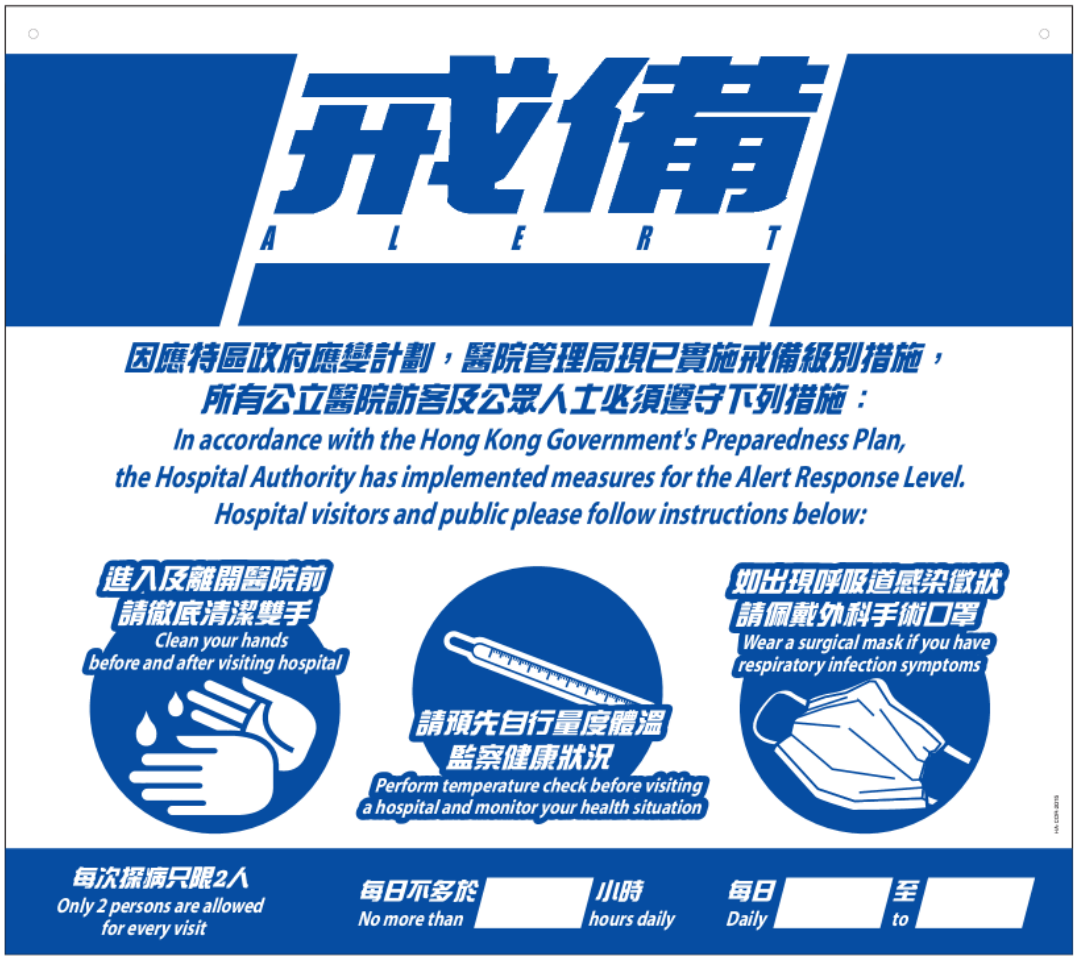
Key Messages on Infection Control & Management of Avian Influenza (AI) Cases

Ad Hoc Clinical Infection & Public Health Forum: Avian Influenza A (H7N9) Infection: An Update on 11 January 2017

Prepared by Chief Infection Control Officer (CICO) Office

Risk Assessment on Influenza A (H7N9)

Parameter	Current situation	Risk
1. Sources	• Poultry exposure in Mainland – sporadic cases • Contaminated environment in Mainland (indirect exposure) • local live poultry markets. • Poultry imported from China / wild birds.	Increase
2. Latest situation	• Human H7N9 cases continue to be reported in Mainland • Missing history on poultry exposure • Lack of poultry exposure in some imported cases	**Residual risk**
3. human to human transmission	• Does not transmit easily from human to human. • Limited antigenic diversity among H7N9 viruses by HAI assays	Limited
4. Special settings in Hospitals	• Droplets/Aerosol generating procedures (AGP) e.g. NIV, CPR • Overcrowded medical ward settings	**Increase**
5. Control measures	a. **Bundle approach (Isolate, PCR test and Notify)** for suspected cases **b. Enhanced surveillance on CAP with travel history** c. Any patient with cough to put on a surgical mask d. Control on high risk procedures (e.g. AGP)	**Reduce**



Overall risk of local transmission of Avian Influenza is considered not elevated, thus the **Alert Response level is maintained**.

Conclusion from Ad hoc CCIDER on Avian Influenza Meeting on 6 Jan 2017.

Key Messages 1 – Early Case Detection

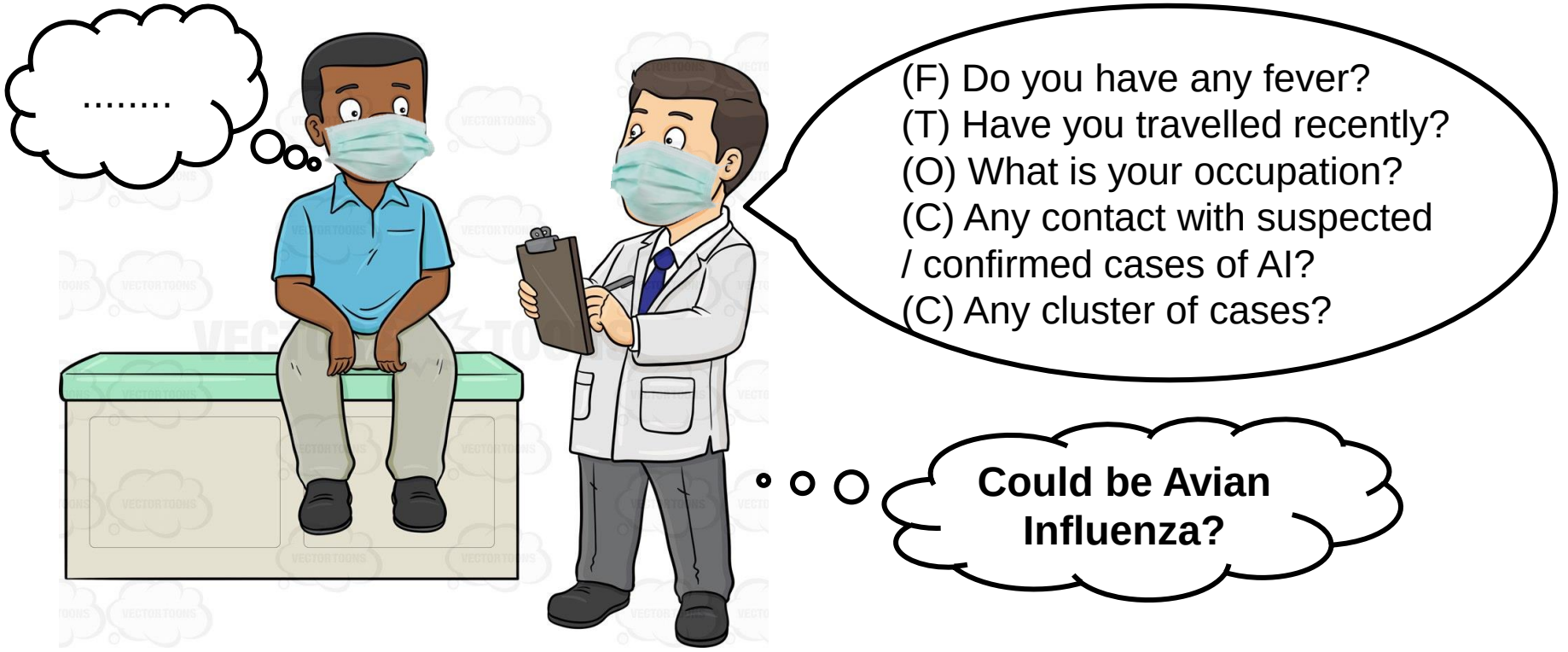
Reporting Criteria

Last updated on 20 April 2016

Clinical criteria		Epidemiological criteria
Patient with: • Acute respiratory illness, characterized by fever (temperature >38°C) and cough and/or sore throat, **OR** • Pneumonia **OR** • Died of unexplained acute respiratory illness	**A N D**	One or more of the following exposures in the **10 days** prior to symptom onset: • Contact with a human case of influenza A (H7N9); **OR** • Contact with poultry or wild birds or their remains, or visit to environments contaminated by their faeces (e.g. markets with live poultry) in countries/areas with documented avian influenza A (H7N9) infection in birds and/or humans in the recent 6 months; **OR** • Consumption of raw or undercooked poultry products in countries/areas with documented avian influenza A(H7N9) infection in poultry and/or humans in the recent 6 months; **OR** • Close contact with a confirmed influenza A (H7N9) infected animal other than poultry or wild birds; OR • Worked in a laboratory that is processing samples from persons or animals that are suspected from avian influenza infection; OR • Worked in the live poultry industry.

Latest list of affected areas is regularly updated and is available on the website of CHP:
http://www.chp.gov.hk/files/pdf/global_statistics_avian_influenza_e.pdf

Key Messages 1 – Early Case Detection



Please be reminded that:

Exposure to poultry history may be absent / difficult to obtain (?)
Patients presented with CAP and travel history to affected areas should be tested for **Avian Influenza PCR** under Enhanced Surveillance.

Conclusion from Ad hoc CCIDER on Avian Influenza Meeting on 6 Jan 2017.

Situation of Avian Influenza A(H7N9) in Hong Kong

Case #	Hosp.	Confirmed date	Age/Sex	Travel History	Contact History	NPS result	Positive specimens	Condition / Outcome
17	NDH	19 Dec 2016	75/M	Chang ping, Dong guan	Wet market in Dongguan, bought a dressed chicken *(repeatedly denied poultry contact and visiting wet market)*	Negative for influenza (but positive for Enterovirus/ Rhinovirus)	NPA	Died (25 Dec 2016)
18	UCH	29 Dec 2016	70/M	Shen zhen, Zhong shan	Came across mobile stalls selling live poultry in China, bought a chilled chicken in Kwun Tong (HK) *(denied poultry contact history upon admission)*	Negative for influenza	Sputum (under Enhanced Surveillance)	Serious, IDC
19	YCH	5 Jan 2017	62/M	Guangzhou, Dong guan	Denied recent exposure to poultry /visit wet market	Negative for influenza	ETA & NPA (under Enhanced Surveillance)	Died (6 Jan 2017)
20	PMH	11 Jan 2017	10/M	Foshan, Guangdong	visited a relative's home with live chickens but denied direct contact, visited a market there but denied entry into its poultry section. (denied poultry contact upon admission)	---	NPA (under Enhanced Surveillance)	Stable, IDC

Suspected case

Enhanced Laboratory Service for Avian Influenza

	On-going surveillance
Inclusion criteria	Any Community acquired pneumonia (CAP) cases, ● of unknown causes (no response to treatment in 3 days); or ● requiring ICU care (e.g. intubation, high flow oxygen); or ● occurring in clusters; or ● in health care workers irrespective of travel history OR Any paediatric in-patient (≤18 years old) who presents with influenza-like illness (ILI) and has travel history to the affected areas* in the past 10 days before symptoms onset. OR Any CAP who has travel history to the affected areas* in the past 10 days before symptoms onset.
Actions required	1. Arrange specimens to hospital laboratory for Influenza A molecular testing (M gene, H1, H3). **The turn-around-time is within 24 hours.** *Continue to send sample to PHLSB as a routine practice.*
	If M gene is positive and H subtype 1 and 3 are negative:
	1. Isolate the patient in Airborne Infection Isolation Room (AIIR) **AND** 2. Notify the case through Notifiable Diseases and Outbreak Reporting System (NDORS)# **AND** 3. *Cluster Infection Control Officer (ICO) should call MCO of CHP at 7116 3300 call 9179 & HAHO Duty Officer at 7116 3328 A/C 999* ***AND*** 4. *Alert PHLSB for PCR H7 and subtyping*

Call MCO of CHP & HAHO Duty Officer if patient is under ICU care/ died/ close contact of a confirmed H7 case

* Affected areas: http://www.chp.gov.hk/files/pdf/global_statistics_avian_influenza_e.pdf

Key Messages 2 – IC Measures for AGPs

HCWs are recommended:

to perform aerosol-generating procedure (AGP) in an **airborne infection isolation room**, including the cases under the Enhanced Surveillance of Avian Influenza.

Cases under the Enhanced Surveillance of AI

Airborne Infection Isolation Room

Conclusion from Ad hoc CCIDER on Avian Influenza Meeting on 6 Jan 2017.

Aerosol-generating procedures (AGP)

Such as:

1. Endotracheal intubation#
2. CPR
3. Bronchoscopy
4. Open suctioning of respiratory tract (including tracheostomy care)
5. Autopsy
6. Non-invasive positive pressure ventilation (BiPAP & CPAP)
7. High-frequency oscillatory ventilation
8. Nebulizer therapy
9. Sputum induction

- NPA and high flow oxygen (≥6L/min) are theoretically at risk of dispersal of infectious respiratory droplets, therefore they should be performed in conditions as required for AGP in high-risk patient areas.

Taking into consideration of patient's factors under OT setting, where the patient has undergone pre-operative screening and under sedation, staff is advised to follow Standard Precautions or transmission based precautions (if indicated) when performing intubation for elective surgery.

Other procedures should be assessed on discretion of hospital Infection Control Officers (ICO)

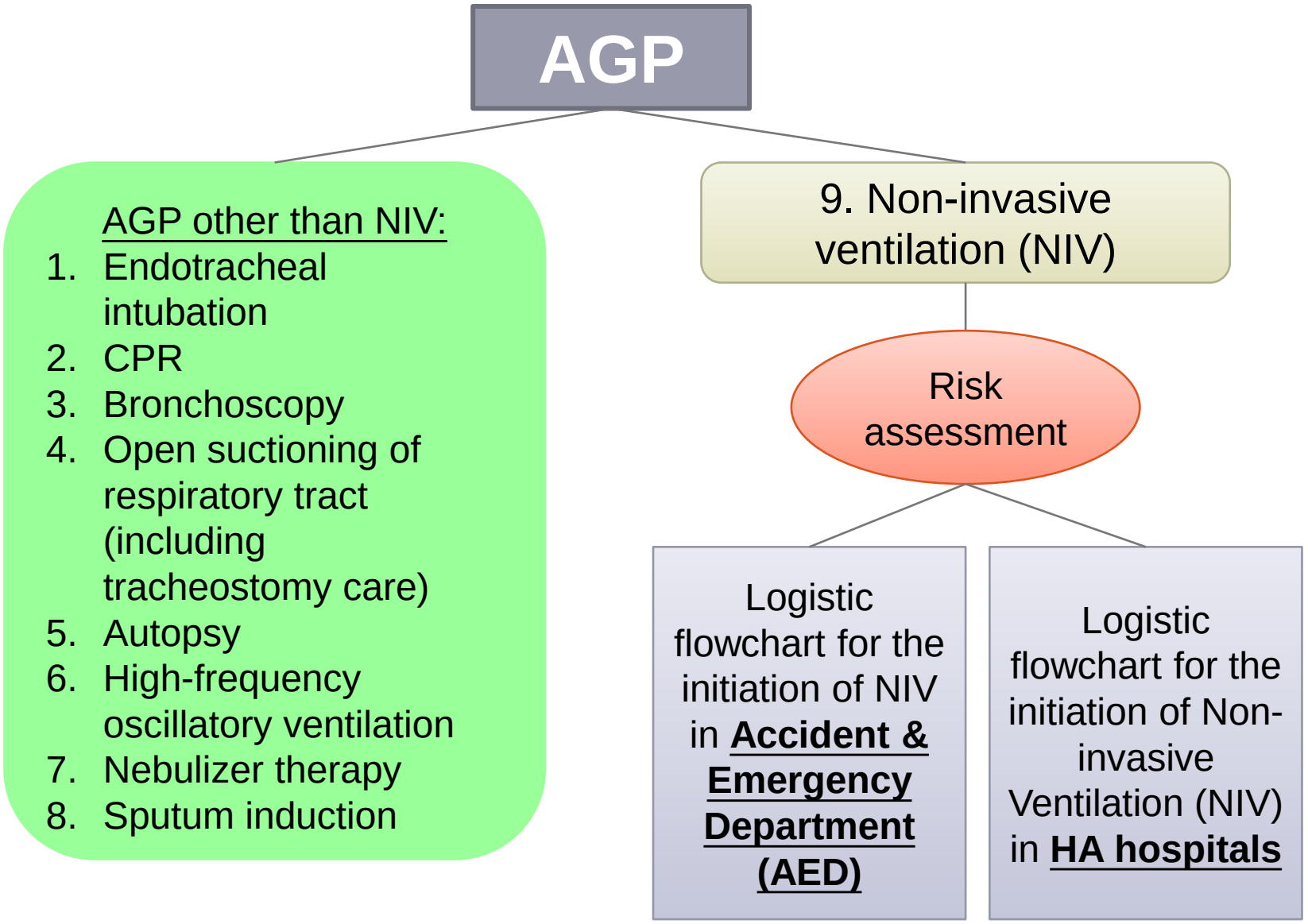
Recommended Personal Protective Equipment (PPE)

Under Alert Response Level

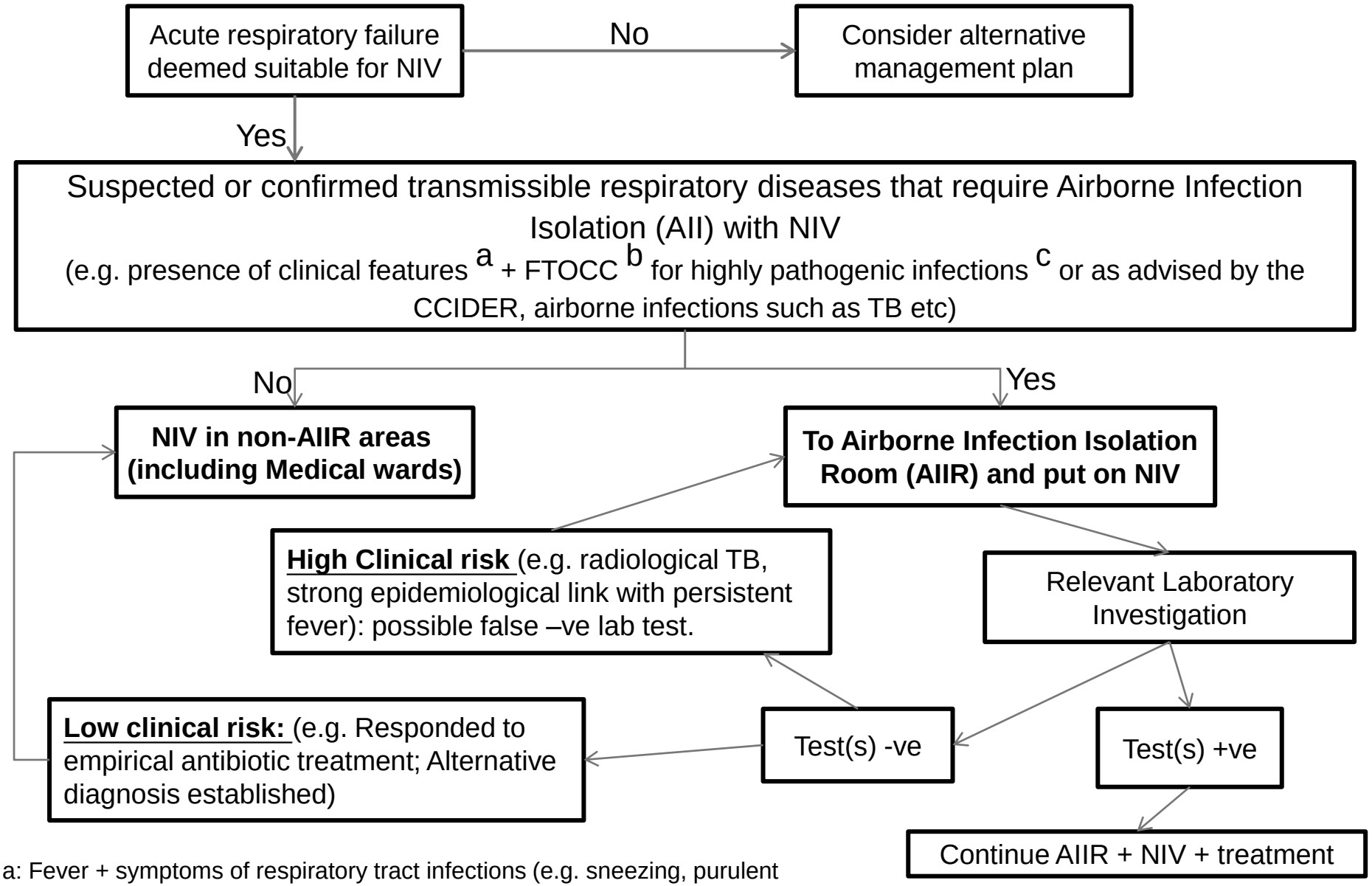
Apply standard precautions (SP) +/- transmission-based precautions for all patients

Areas / Activities	Alert Response Level
• Patient suspect /confirmed AI • Performing AGP[a] in patient with other airborne infections	• N95 respirator • eye protection[d] • gown • gloves • cap (optional)
• Patient triage at OPD and AED	• N95 respirator / surgical mask [f] • eye protection[d] • gown • gloves • cap (optional)
• Performing AGP[a] in patient without airborne infection [b,e]	• N95 respirator / surgical mask [c] • eye protection[d] • gown • gloves
• Non-Invasive Ventilation (NIV)	• Please refer to logistic flowchart for the initiation of NIV in HA hospitals
• Advice on masking	• Isolation wards: universal masking • No patient contact and general patient areas: Surgical mask for signs and symptoms of respiratory infection

Non-invasive ventilation (NIV)



Logistic flowchart for the initiation of NIV in HA hospitals



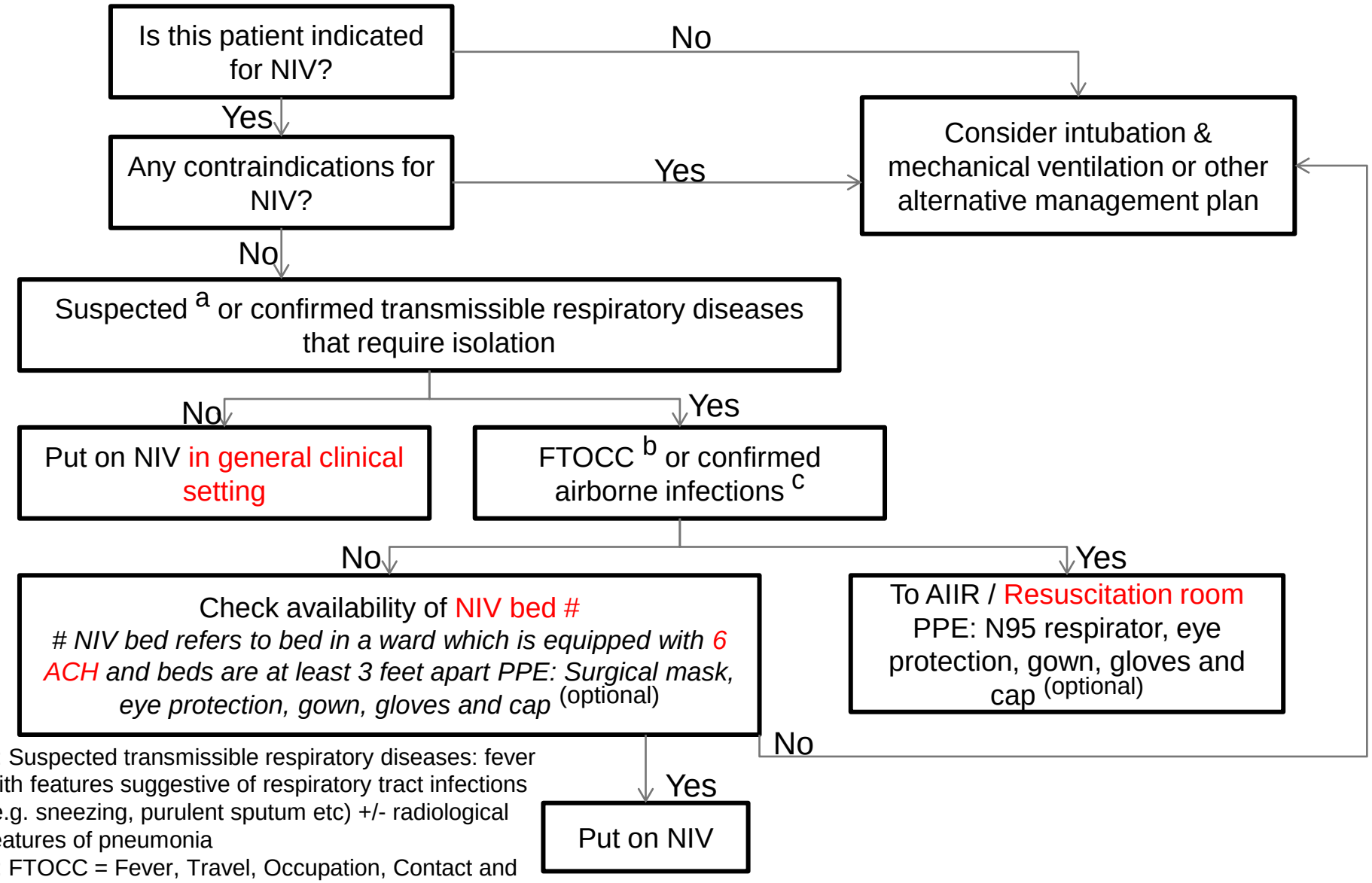
a: Fever + symptoms of respiratory tract infections (e.g. sneezing, purulent sputum etc) +/- radiological features of pneumonia
b: FTOCC = Fever, Travel, Occupation, Cluster and Contact
c: Including Avian flu, SARS, MERS-CoV

Endorsed by CCIDER in Ad hoc meeting on H5N6, H7N9 and MERS on 9 May 2014

Supplementary Notes for NIV

- All patients who have fulfilled the reporting criteria for novel influenza, MERS-CoV and SARS should have been isolated promptly in AIIR already;
- **The "FTOCC" screening criteria applied in the flowchart above refers to cases with:**
  - **Fever and one or more of:**
    - **T: travel to an affected areas during the incubation period**
    - **O: occupational related**
    - **C: contact of a suspected/confirmed case**
    - **C: cluster of cases detected**
- "Relevant" laboratory investigations refer to tests ordered after clinical and epidemiological assessments
- The possibility of having insufficient AIIR if there is a large number of such patients (e.g. during epidemics and major outbreaks of novel infections) exists.
- Manpower issue: increased nursing workload in the isolation areas with NIV cases
- Similar concerns for NIV exist in other aerosol generating procedures
- The flowchart should be read in parallel with the latest Respiratory Consensus Statement on NIV, which can be found in the Hong Kong Respiratory Medicine webpage (www.hkresp.org)

Logistic flowchart for the initiation of NIV in AED



a: Suspected transmissible respiratory diseases: fever with features suggestive of respiratory tract infections (e.g. sneezing, purulent sputum etc) +/- radiological features of pneumonia

b: FTOCC = Fever, Travel, Occupation, Contact and Cluster

c: Disease requiring airborne precautions: such as avian flu, SARS or MERS-CoV, PTB, emerging respiratory viruses

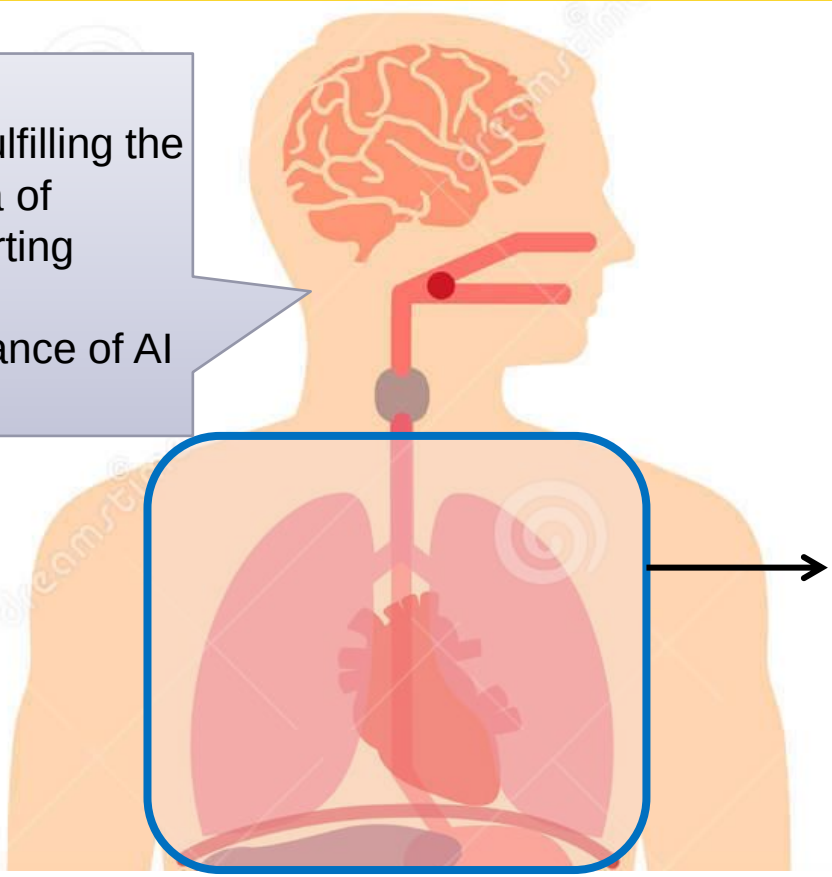
Endorsed by CCIDER in 8th Ad hoc CCIDER on AI meeting on 10 Feb 2014

Key Messages 3 – Specimens for testing

Clinicians are urged to:

Take **lower respiratory specimens** as far as possible, otherwise, NPA is recommended and NPS should be avoided.

For suspected cases fulfilling the inclusion criteria of
(1) NDORS reporting
or
(2) Enhanced Surveillance of AI



- Sputum
- Tracheal Aspirate (TA) (if intubated)
- Bronchoalveolar Lavage (BAL) (if bronchoscopy)

Conclusion from Ad hoc CCIDER on Avian Influenza Meeting on 6 Jan 2017.

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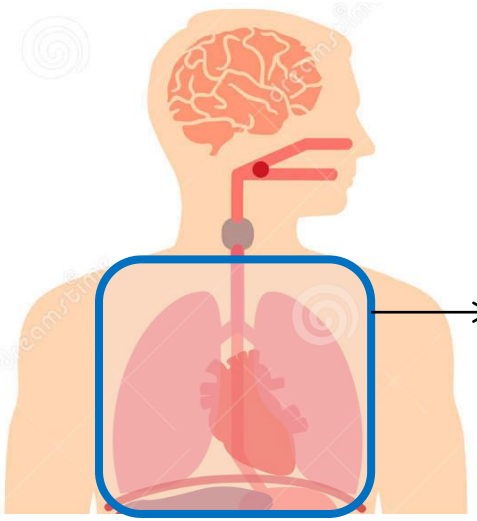
Suspected case

Laboratory Workflow for Avian Influenza diagnosis

(for patient fulfilling reporting criteria & under Enhanced Surveillance)



Upper respiratory sample

- ~~Nasopharyngeal Flocked Swabs (NPFS), or~~
- Nasopharyngeal Aspirate (NPA) [in Viral Transport Medium (TM)]

Lower respiratory sample (preferred)

- Sputum
- Tracheal Aspirate (TA) (if intubated)
- Bronchoalveolar Lavage (BAL) (if bronchoscopy)

Sample sent for routine testing

Public Health Laboratory Services Branch (PHLSB)

Routine tests for respiratory agents

Avian Influenza A:
PCR for M gene and other H subtypes

HA Laboratory

- Influenza A PCR for M gene, H1, H3
- Turnaround time in less than 24 hours

Call MCO and HODO

Suspicious of avain Influenza A (i.e. M positive, H1 and H3 negative)

Negative M gene

Manage accordingly

Note:

1. Continue send duplicate sample to PHLSB as a routine practice.
2. For PCR M gene negative cases, Influenza A infection is unlikely, thus Airborne isolation (as required for Avian Influenza) is not required.
3. For human influenza (H1/H3) cases, droplets precautions is required.

UPDATE
DATE: 6 Jan 2017

Summary

Early Case Detection

- Exposure to poultry history may be absent / difficult to obtain (?).
- Alert to patients presented with “CAP with recent travel to affected areas” : tested for Avian Influenza under Enhanced Surveillance

IC Measures for AGP

- Use of AIIR to perform AGP is recommended for patients presented with CAP and travel history to affected area
- For patients on NIV, check FTOCC and Influenza testing result

Specimens for Testing

- Lower respiratory specimens is preferable to upper respiratory specimens
- NPA is recommended and NPS should be avoided (which has relatively poor sensitivity) for suspected cases which fulfill the inclusion criteria of NDORS reporting or Enhanced Surveillance of Avian Influenza.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Infection Control Guideline for Prosthetics and Orthotics Service
9 Jan 2017 Prosthetics & Orthotics
Clinical Guideline of Videofluoroscopic Swallowing Study (VFSS) in Speech Therapy
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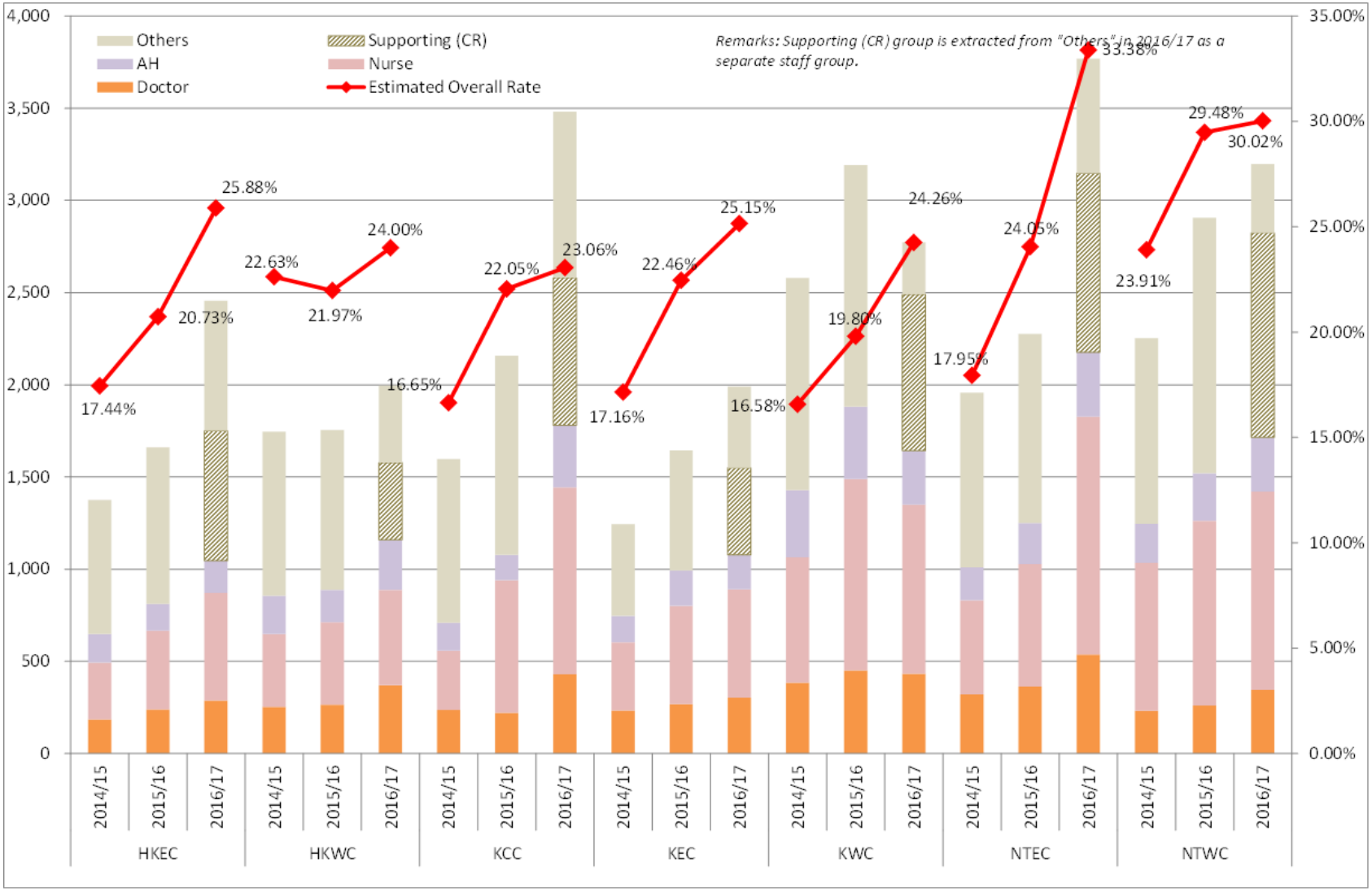
Fire Safety Officers


人類感染甲型禽流感H7N9病毒
Human cases of avian influenza A (H7N9) virus
戒備
ALERT
Situation update
最新情況
Affected area
受感染地區
Reporting criteria
呈報準則
甲型禽流感H7N9病毒
Avian Influenza A (H7N9) Virus

Preparedness for Winter Season

Seasonal Influenza Vaccination



As of 9 Jan 2017, a total of 19,359 HA staff (with an uptake rate of 25.56%) have received the seasonal influenza vaccination.

While entering into winter season and emerging threat of Avian Influenza, as a precautionary measure, **all healthcare workers and visitors are recommended to <u>wear surgical marks when entering patient care areas.</u>**

因應在冬季會出現禽流感感染的威脅，醫院管理局現加強呼吸道防護措施。

所有訪客及醫護人員 進入病人護理區，敬請佩戴外科口罩。

In view of emerging threat of avian influenza infection during winter season, the Hospital Authority has strengthened the respiratory precautions.

All visitors and healthcare workers

are recommended to wear surgical masks when entering patient care areas.

醫院管理局
HOSPITAL AUTHORITY

總感染控制主任辦事處
Chief Infection Control Officer (CICO) Office

2016年12月30日
30 Dec 2016

Conclusion from Ad hoc CCIDER on Avian Influenza Meeting on 30 Dec 2016.

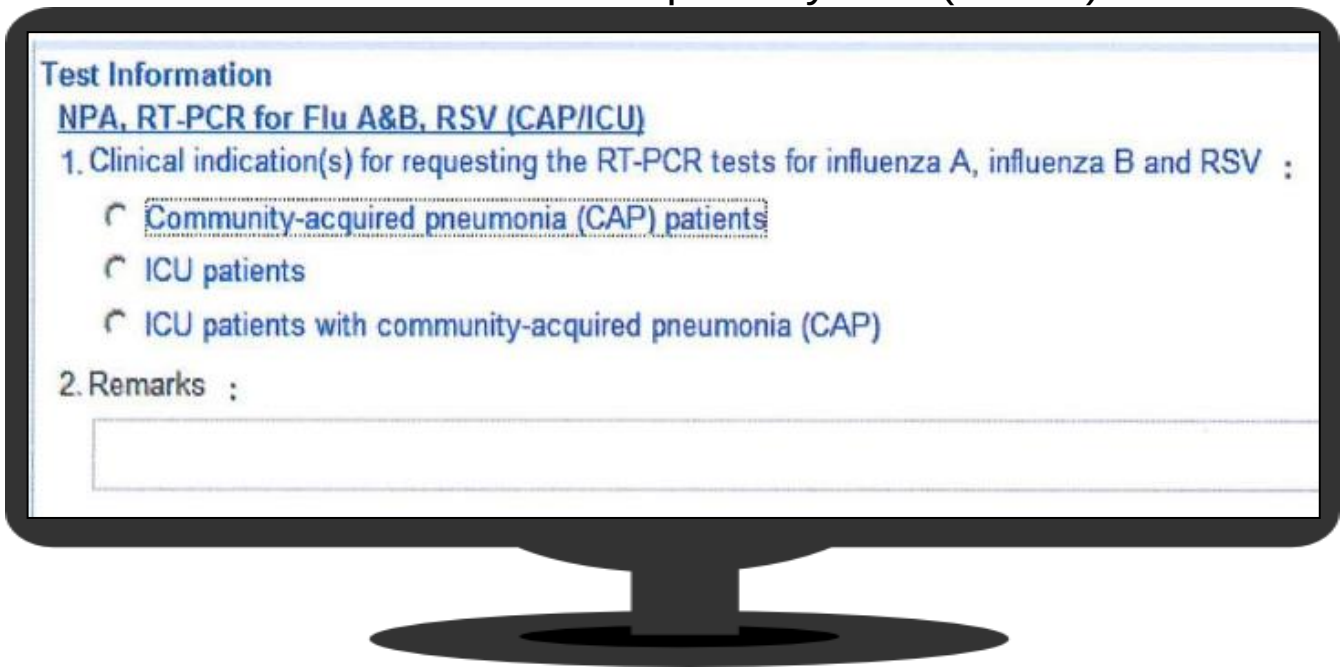
Enhanced Laboratory Services for Influenza Testing during Winter Surge

Clinicians can:

Request PCR test for influenza virus for patient presented with CAP or receiving ICU care through GCRS as part of enhanced laboratory services for influenza testing during winter surge.

Laboratories will proactively offer the PCR testing in the presence of clinical indications.

Generic Clinical Request System (GCRS)



THANK YOU