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FAQ in the Management of Severe Community Acquired Pneumonia

February 21, 2003

1. **What is the case definition of severe Community Acquired Pneumonia (CAP)?**

   - According to the ad hoc Working Group on the subject, severe CAP refers to cases of CAP requiring assisted ventilation (limited to intubated cases only) or CAP cases under ICU/HDU care.

2. **What is the background incidence of atypical Community Acquired Pneumonia (CAP) admitted to ICU?**

   - In last winter, from December 2001 to February 2002, there were on an average 74 CAP cases admitted to ICU, mainly atypical pneumonia.

3. **What to do when I have a patient suffering from severe Community Acquired Pneumonia (CAP)?**

   - Such cases should be reported to the Secretariat of TFIC, HAHO Fax No: 2881-5848 (HA intranet mail: "Secretariat of Infection Control Task Force") using the report form ***(Appendix I)***.

   - The Secretariat of TFIC would update the hospital's ICTs and Duty Microbiologist of such cases.

   - The hospital ICTs should complete the Clinical Report Form ***(Appendix II)*** and send promptly to Dr. Dominic Tsang, subject officer, by fax at 2958 6790 for compilation.

   - Send additional tests as outlined below.

4. **What is the arrangement for laboratory testing?**

   - Specimens should be collected (NPA, serum samples) and sent to GVU, DH by existing arrangement. GVU would test for all potential agents of atypical pneumonia.

   - Additional specimens (NPA, clotted blood and EDTA blood samples) should be collected and sent to QMH Microbiology laboratory (attn: Dr. Malik Peiris) through the hospital's Pathology department. Special test and detailed analysis on H5 avian influenza would be performed.

   - Such arrangement of special tests would be reviewed by 28 February 2003 to assess the need for continuation.

   - Hospital ICT would follow up on the cases reported and make sure the tests are sent promptly.

5. **Can I send for special testing on other CAP cases?**

   - Others cases of CAP, not fulfilling the case definition of severe CAP, should be investigated according to normal routine practice i.e. specimens should be sent to GVU-DH for testing on agents of atypical pneumonia.

- Also, for cases of CAP not fulfilling the case definition of severe CAP, if the patient is having lymphopenia, specimens (NPA, clotted blood and EDTA blood samples) could be sent to QMH for special testing on H5 avian influenza.

6. What follow up actions would be done?

- HAHO would inform the reported cases to DH for epidemiological analysis.
- The Working Group would compile a database on all such cases, and for analysis on possible epidemiological linkage.
- Test results would be monitored and inform hospital once available and advise on further measures.

7. What are the Infection Control Measures?

The recommended method of isolation for influenza is droplet precautions in additional to Universal Precautions. This is because the disease is not airborne, but by large particle droplet (larger than 5 μm) which will not be transmitted beyond 3 feet from the source.

Droplet Precautions includes:

- Place patient in a room with other patient(s) having influenza (**cohorting**). Special air handling and ventilation are not necessary. When cohorting is not possible, maintain separation of at least 3 feet from other patients.
- Staff should have barrier apparels (gloves and gowns) when coming into contact with the patient's blood, body fluids, secretions, excretions, mucous membranes and contaminated items.
- Wear a mask when working within 3 feet of the patient.
- Wash hands after removal of gloves and before nursing another patient even when contact is only with non-contaminated items.
- Proper disinfection of the environment and equipment contaminated with blood, body fluids, secretions and excretions is required.

8. What is the Use of Antivirals?

Amantadine can reduce the severity and duration of signs and symptoms of only influenza A illness when given in the early stage of infection. Amantadine is associated with neurological and gastrointestinal side effects. Cautions must be exercised for people with renal insufficiency. Resistance emerges within 2-5 days in around 30% of cases and such resistant viruses are readily transmissible.

The two new anti-influenza drugs, Zanamivir (Relenza) and Oseltamivir (Tamiflu), are neuraminidase inhibitors and are active against both influenza A and B.

- Zanamivir is approved for use in patient aged 7 years or older. Oseltamivir is approved for treatment of patient aged 1 year or older.
- Oseltamivir is also approved for influenza chemoprophylaxis among person aged 13 year or older.
- When treatment is commenced within 36 to 48 hours of the onset of influenza, both drugs can reduce clinical symptoms of influenza by approximately 1 day.

- Zanamivir may rarely cause bronchospasm in patients with asthma and bronchodilators must be readily available when it is used on such patients. In patients on inhaled bronchodilators, use it before the dose of zanamivir. Oseltamivir has gastrointestinal side effects including nausea (10% in adults, 14.3% in children) and vomiting (9% in adults) which might be less severe when the drug is taken with food.
- Development of viral resistance to zanamivir and oseltamivir during treatment has been reported.
- The use of these new agents as chemoprophylxis among contacts should base on clinical symptoms, the degree of contact with index cases, and subject to evaluation by the attending physician.

9. Where can I get further information and advice?

- Secretariat, TFIC
- Hospital Infection Control Team
- Seminars on the subject are being organised and would be announced soon.
- Guideline on "Use of Amantadine in the Management of H5N1 Infections" issued by Department of Health, 20 February 2003 ***(Appendix III)***

21 February 2003

Hospital Authority

Report Form for severe community acquired pneumonia

From : _____Hospital

To: Secretariat of TFIC, HAHO
(Fax No: 2881-5848)
(HA intranet mail: "Secretariat of Infection Control Task Force")

Date : _____

Name	Sex/ Age	HK_ID	Hospital No./ A&E No.	Ward/Bed	Onset Date	Admission Date	CXR	Diagnosis/ Organism	General Condition Good/ Satisfy/ Fair/Poor

090007

The hospital ICTs/ ICOs are requested to fax the completed form asap

To: Secretariat TFIC (Fax: 2881 5848)
Dr. Dominic Tsang, QEH (Fax: 2958 6790)

Please also update the progress of the cases on a regular basis. If needed, the hospital ICT/ICO will be contacted for further updated information.

Enquiry on the CRF should be directed to Dr Dominic Tsang, at 2958 6849.

Clinical Record Form
For Severe Atypical Community Acquired Pneumonia

This form is for capturing the clinical features, investigation results and treatment outcome of all patients suffering from severe atypical community acquired pneumonia admitted to HA hospitals.

The case definition for this study is community-acquired pneumonia **(CAP) who require assisted ventilation or ICU/HDU care.**

Patient particulars: (or Use Patient admission label)

Name _____ HK_ID _____

Hospital Number _____ Sex/Age _____ Date of admission _____

- Old age home or other institution residence ☐
- Hospitalization 2 weeks before admission ☐ Reasons/diagnosis, pls specify _____
- Antibiotics treatment before admission ☐ No ☐ Yes (please specify) _____
- Contact with animals, or birds ☐ No ☐ Yes (please specify) _____
- **Travel in past 2 weeks** ☐ No ☐ Yes (please specify) _____
- Past health: (please specify) _____

Clinical Features on Presentation

Duration of symptoms _____ days prior to admission

☐ Fever	☐ Cough	☐ Sputum
☐ Dyspnea	☐ Haemoptysis	☐ Pleuritic chest pain
☐ Diarrhoea	☐.Headache	☐ Myalgia

Other symptoms, please specify: _____

_____

090009

Clinical Record Form
For Severe Atypical Community Acquired Pneumonia

Physical Examination Findings on admission

BP _____ mmHg Pulse _____ /min SaO2 _____ % (Room air/O_2, please specify %)

Respiratory Rate _____ / min Temperature _____ °C

☐ Cyanosis ☐ Confusion/ delirium
☐ Wheezing ☐ Crepitations

Others, please specify: _____

Investigation result upon Admission

CXR ☐ Consolidation (Lobar or patchy) ☐ Interstitial shadow ☐ Effusion
☐ Unilateral ☐ Bilateral
☐ Progression after admission

WBC count _____ 10^9 /L Lymphocyte count _____ 10^9 /L

Serum creatinine ☐ <120 μmol/L ☐ >120 μmol/L

ABG: pH_____ PCO_2 _____kPa PO_2 _____kPa

SaO_2_____ % on nasal/NRM O_2 _____ LPM

Liver function: ☐ normal ☐ impaired, please specify: _____

ASOT: _____

Others findings, please specify: _____

Name	Dose/Route/Frequency	From (DDMMYY)	To (DDMMYY)
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

Clinical Record Form

090010

☐ Mechanical ventilation From: (DDMMYY) _____ to (DDMMYY) _____
☐ ICU admission From: (DDMMYY) _____ to (DDMMYY) _____

Complications:

☐ Septic shock
☐ Multi-organ failure
- ☐ Delirium / septic encephalopathy
- ☐ Acute renal failure
- ☐ Others _____

☐ complications of ventilatory support
- ☐ Barotrauma
- ☐ ventilaor associated pneumonia
- ☐ Others _____

☐ Empyema thoracis or abscess

Outcome:

☐ Discharged ☐ Still hospitalised ☐ Died

Please also attach laboratory results that are significant for the analysis. Thank you for the assistance.

Date: _____ Reported by: _____

The TFIC Secretariat will inform DH on details of the case for their necessary actions.

Use of Amantadine in the Management of H5N1 Infections

From the drug sensitivity study at Centres for Disease Control and Prevention (CDC) on the isolates from two H5N1 cases in 1997, it has been shown that the H5N1 virus is sensitive to amantadine. This drug is an effective agent for the treatment and prophylaxis of influenza A (but not B). However, it is prudent to note that the influenza viruses can rapidly develop resistance to this drug. Hence, doctors are advised to use the drug appropriately for treatment or prophylaxis of influenza A. The following guidelines which have incorporated the advice from the CDC experts are recommended for doctors' reference.

Confirmed case of H5N1 infection

Amantadine 100mg twice a day for 5 days can be used to treat cases of H5N1 infection. If started within 48 hours of the start of illness, amantadine can reduce the severity and shorten the duration of illness. Doses should be reduced for children and elderly, and those with underlying renal diseases. For children aged 1 to 9, the dosage is 5mg/kg/day in 2 divided doses up to 150 mg. For children aged greater than 9, adult dosage can be used but if the body weight of the child is less than 40kg, use the regime of 5mg/kg/day in 2 divided doses up to 150 mg.

Symptomatic Contacts of H5N1 cases

Close contacts, i.e. home contacts and medical staff providing direct care to patients with H5N1 infection, should be put on medical surveillance. If they develop symptoms compatible with influenza (fever of 38°C or higher, together with cough or sore throat), they should have a throat swab or nasopharyngeal aspirate taken for viral cultures. Treatment with amantadine (100mg twice for 5 days) can be started pending viral culture results.

Side effects

Amantadine can cause neurological and gastrointestinal side effects. In one study of healthy adults, approximately 13% of those treated with amantadine developed side effects. Neurological side effects include nervousness, anxiety, difficulty in concentrating and dizziness. More serious neurological side effects like marked behavioural changes, delirium, hallucinations, agitation and seizures have been observed. Gastrointestinal side effects include nausea, vomiting abdominal pain and constipation. These side effects will stop after the drug has been withdrawn. Cautions must be exercised for people with renal insufficiency and in the elderly age group. The drugs are contraindicated for persons with seizure disorders.

Department of Health, HKSAR
20 February 2003

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FAQ in the Management of Severe Community Acquired Pneumonia

Revised on February 28, 2003

1. **What is the case definition of severe Community Acquired Pneumonia (CAP)?**

   - According to the ad hoc Working Group on the subject, severe CAP refers to cases of CAP requiring assisted ventilation (limited to intubated cases only) or CAP cases under ICU/HDU care.

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2. **What is the background incidence of atypical Community Acquired Pneumonia (CAP) admitted to ICU?**

   - In last winter, from December 2001 to February 2002, there were on an average 74 CAP cases admitted to ICU, mainly atypical pneumonia.

3. **What to do when I have a patient suffering from severe Community Acquired Pneumonia (CAP)? (NEW)**

   - Such cases should be reported to the Secretariat of TFIC, HAHO Fax No: 2881-5848 (HA intranet mail: "Secretariat of Infection Control Task Force") using the revised report form ***(Appendix I)***.

   - The Secretariat of TFIC would update the hospital's ICTs and Duty Microbiologist of such cases.

   - The hospital ICTs are no longer required to complete the CRF.

   - Dr. Dominic Tsang, subject officer, would seek the assistance of the hospital's ICT or case Medical Officer in updating of case information when required.

   - Send additional tests as outlined below.

4. **What is the arrangement for laboratory testing? (NEW)**

   - Specimens should be collected (NPA, serum samples) and sent to GVU, DH by existing arrangement. GVU would test for all potential agents of atypical pneumonia.

   - Additional specimens (NPA, clotted blood and EDTA blood samples) should be collected and sent to QMH Microbiology laboratory (attn: Dr. Malik Peiris) through the hospital's Pathology department. Special test and detailed analysis on H5 avian influenza would be performed.

   - Similarly, specimens of NPA and clotted blood from patients in NTE cluster hospitals, YCH and CMC should be sent to Virology laboratory, Prince of Wales Hospital for special testing. The request for 'atypical pneumonia surveillance' should be clearly stated on the request form.

   - Such arrangement of special tests would be reviewed in two weeks to assess the need for continuation.

- Hospital ICT would follow up on the cases reported and make sure the tests are sent promptly.

5. Can I send for special testing on other CAP cases?

- Others cases of CAP, not fulfilling the case definition of severe CAP, should be investigated according to normal routine practice i.e. specimens should be sent to GVU-DH, Virology Laboratory in Prince of Wales Hospital, Microbiology Laboratory in Queen Mary Hospital as appropriate, for testing on agents of atypical pneumonia.

- Also, for cases of CAP not fulfilling the case definition of severe CAP, if the patient is having lymphopenia, returning from China or recent poultry contact, such specimens should also be sent to the appropriate laboratory for special testing.

6. What follow up actions would be done?

- HAHO would inform the reported cases to Department of Health for epidemiological analysis.
- The Working Group would compile a database on all such cases, and analysis would be conducted on possible epidemiological linkage.
- Test results would be monitored and hospital will be notified once available.

7. What are the Infection Control Measures?

The recommended method of isolation for influenza is droplet precautions in additional to Universal Precautions. This is because the disease is not airborne, but by large particle droplet (larger than 5 μm) which will not be transmitted beyond 3 feet from the source.

Droplet Precautions includes:

- Place patient in a room with other patient(s) having influenza (**cohorting**). Special air handling and ventilation are not necessary. When cohorting is not possible, maintain separation of at least 3 feet from other patients.
- Staff should have barrier apparels (gloves and gowns) when coming into contact with the patient's blood, body fluids, secretions, excretions, mucous membranes and contaminated items.
- Wear a mask when working within 3 feet of the patient.
- Wash hands after removal of gloves and before nursing another patient even when contact is only with non-contaminated items.
- Proper disinfection of the environment and equipment contaminated with blood, body fluids, secretions and excretions is required.

8. What is the Use of Antivirals?

Amantadine can reduce the severity and duration of signs and symptoms of only influenza A illness when given in the early stage of infection. Amantadine is associated with neurological and gastrointestinal side effects. Cautions must be exercised for people with renal insufficiency. Resistance emerges within 2-5 days in around 30% of cases and such resistant viruses are readily transmissible.

The two new anti-influenza drugs, Zanamivir (Relenza) and Oseltamivir (Tamiflu), are neuraminidase inhibitors and are active against both influenza A and B.

- Zanamivir is approved for use in patient aged 7 years or older. Oseltamivir is approved for treatment of patient aged 1 year or older.
- Oseltamivir is also approved for influenza chemoprophylaxis among person aged 13 year or older.
- When treatment is commenced within 36 to 48 hours of the onset of influenza, both drugs can reduce clinical symptoms of influenza by approximately 1 day.
- Zanamivir may rarely cause bronchospasm in patients with asthma and bronchodilators must be readily available when it is used on such patients. In patients on inhaled bronchodilators, use it before the dose of zanamivir. Oseltamivir has gastrointestinal side effects including nausea (10% in adults, 14.3% in children) and vomiting (9% in adults) which might be less severe when the drug is taken with food.
- Development of viral resistance to zanamivir and oseltamivir during treatment has been reported.
- The use of these new agents as chemoprophylxis among contacts should base on clinical symptoms, the degree of contact with index cases, and subject to evaluation by the attending physician.

9. Where can I get further information and advice?

- Secretariat, TFIC
- Hospital Infection Control Team
- Seminars on the subject are being organised and would be announced soon.
- Guideline on "Use of Amantadine in the Management of H5N1 Infections" issued by Department of Health, 20 February 2003 ***(Appendix II)***.

28 February 2003

Hospital Authority

096015

Appendix I

Report Form for severe community acquired pneumonia

From : _____ Hospital

To: Secretariat of TFIC, HAHO
(Fax No: 2881-5848)
(HA intranet mail: "Secretariat of Infection Control Task Force")

Date :

Name [Patient label preferred]	HK-ID	Sex/Age	Ward/Bed	Date of Admission	Onset Date	Travel (place and duration)	Contact with poultry or birds	Respiratory symotoms among family members	CXR on admission	Lymphocyte count & total WBC	remarks	Name of Case M.O. and phone number	General Condition

Use of Amantadine in the Management of H5N1 Infections

From the drug sensitivity study at Centres for Disease Control and Prevention (CDC) on the isolates from two H5N1 cases in 1997, it has been shown that the H5N1 virus is sensitive to amantadine. This drug is an effective agent for the treatment and prophylaxis of influenza A (but not B). However, it is prudent to note that the influenza viruses can rapidly develop resistance to this drug. Hence, doctors are advised to use the drug appropriately for treatment or prophylaxis of influenza A. The following guidelines which have incorporated the advice from the CDC experts are recommended for doctors' reference.

Confirmed case of H5N1 infection

Amantadine 100mg twice a day for 5 days can be used to treat cases of H5N1 infection. If started within 48 hours of the start of illness, amantadine can reduce the severity and shorten the duration of illness. Doses should be reduced for children and elderly, and those with underlying renal diseases. For children aged 1 to 9, the dosage is 5mg/kg/day in 2 divided doses up to 150 mg. For children aged greater than 9, adult dosage can be used but if the body weight of the child is less than 40kg, use the regime of 5mg/kg/day in 2 divided doses up to 150 mg.

Symptomatic Contacts of H5N1 cases

Close contacts, i.e. home contacts and medical staff providing direct care to patients with H5N1 infection, should be put on medical surveillance. If they develop symptoms compatible with influenza (fever of 38°C or higher, together with cough or sore throat), they should have a throat swab or nasopharyngeal aspirate taken for viral cultures. Treatment with amantadine (100mg twice daily for 5 days) can be started pending viral culture results.

Side effects

Amantadine can cause neurological and gastrointestinal side effects. In one study of healthy adults, approximately 13% of those treated with amantadine developed side effects. Neurological side effects include nervousness, anxiety, difficulty in concentrating and dizziness. More serious neurological side effects like marked behavioural changes, delirium, hallucinations, agitation and seizures have been observed. Gastrointestinal side effects include nausea, vomiting abdominal pain and constipation. These side effects will stop after the drug has been withdrawn. Cautions must be exercised for people with renal insufficiency and in the elderly age group. The drugs are contraindicated for persons with seizure disorders.

Department of Health, HKSAR
20 February 2003

Print Date : 15-7-03

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FAQ in the Management of Severe Community Acquired Pneumonia

Revised on March 7, 2003

1. **What is the case definition of severe Community Acquired Pneumonia (CAP)?**

   - According to the ad hoc Working Group on the subject, severe CAP refers to cases of CAP requiring assisted ventilation (limited to intubated cases only) or CAP cases under ICU/HDU care.

2. **What is the background incidence of atypical Community Acquired Pneumonia (CAP) admitted to ICU?**

   - In last winter, from December 2001 to February 2002, there were on an average 74 CAP cases admitted to ICU, mainly atypical pneumonia.

3. **What to do when I have a patient suffering from severe Community Acquired Pneumonia (CAP)?**

   - Such cases should be reported to the Secretariat of TFIC, HAHO Fax No: 2881-5848 (HA intranet mail: "Secretariat of Infection Control Task Force") using the revised report form ***(Appendix I)***.
   - The Secretariat of TFIC would update the hospital's ICTs and Duty Microbiologist of such cases.
   - The hospital ICTs are no longer required to complete the CRF.
   - Dr. Dominic Tsang, subject officer, would seek the assistance of the hospital's ICT or case Medical Officer in updating of case information when required.
   - Send additional tests as outlined below.

4. **What is the arrangement for laboratory testing?**

   - Specimens should be collected (NPA, serum samples) and sent to GVU, DH by existing arrangement. GVU would test for all potential agents of atypical pneumonia.
   - Additional specimens (NPA, clotted blood and EDTA blood samples) should be collected and sent to QMH Microbiology laboratory (attn: Dr. Malik Peiris) through the hospital's Pathology department. Special test and detailed analysis on H5 avian influenza would be performed.
   - Similarly, specimens of NPA and clotted blood from patients in NTE cluster hospitals, YCH and CMC should be sent to Virology laboratory, Prince of Wales Hospital for special testing. The request for 'atypical pneumonia surveillance' should be clearly stated on the request form.
   - Such arrangement of special tests would be reviewed in two weeks to assess the need for continuation.
   - Hospital ICT would follow up on the cases reported and make sure the tests are sent promptly.

5. **Can I send for special testing on other CAP cases?**

   - Others cases of CAP, not fulfilling the case definition of severe CAP, should be investigated according to normal routine practice i.e. specimens should be sent to GVU-DH, Virology Laboratory in Prince of Wales Hospital, Microbiology Laboratory in Queen Mary Hospital as appropriate, for testing on agents of atypical pneumonia.

- Also, for cases of CAP not fulfilling the case definition of severe CAP, if the patient is having lymphopenia, returning from China or recent poultry contact, such specimens should also be sent to the appropriate laboratory for special testing.

6. What follow up actions would be done?

- HAHO would inform the reported cases to Department of Health for epidemiological analysis.
- The Working Group would compile a database on all such cases, and analysis would be conducted on possible epidemiological linkage.
- Test results would be monitored and hospital will be notified once available.

7. What are the Infection Control Measures?

The recommended method of isolation for influenza and most other respiratory infections (except pulmonary tuberculosis) is droplet precautions in additional to Universal Precautions. This is because the disease is not airborne, but by large particle droplet (larger than 5 μm) which will not be transmitted beyond 3 feet from the source.

Droplet Precautions includes:

- Place patient in a room with other patient(s) having influenza (**cohorting**). Special air handling and ventilation are not necessary. When cohorting is not possible, maintain separation of at least 3 feet from other patients.
- Staff should have barrier apparels (gloves and gowns) when coming into contact with the patient's blood, body fluids, secretions, excretions, mucous membranes and contaminated items.
- Wear a mask when working within 3 feet of the patient.
- Wash hands after removal of gloves and before nursing another patient even when contact is only with non-contaminated items.
- Proper disinfection of the environment and equipment contaminated with blood, body fluids, secretions and excretions is required.

8. How infectious are these severe cases of CAP to healthcare workers and what have been done by HA? (NEW)

- While some of these severe CAP cases were diagnosed to be Psittacosis (2), Pneumococcal (1), Influenza A H5N1 (1), Influenza A (2), Influenza B (3), Parainfluenza-2 (1), Parainfluenza-3 (1), and Klebsiella pneumoniae (1), the aetiology of most cases of severe CAP remains unknown.
- It is therefore imperative for frontline staff to adopt the recommended infection control precautions in attending to patients with respiratory symptoms such as fever, headache, myalgia, running nose, pleuritic chest pain and cough.
- To assess the potential of person-to-person spread of these severe CAP infections in the healthcare setting, information is being collected on healthcare staff in contact with these severe CAP cases with regard to any subsequent illness. Symptomatic contacts would be managed clinically and investigated accordingly. Staff contacts of any further severe CAP cases would also be monitored closely for respiratory symptoms.
- Such information is expected to be available early next week and would be released once consolidated. However, the early information gathered from hospitals is not alarming.

9. What are the precautions when attending to patients in the AED? (NEW)

- Universal Precautions should always be adopted in attending to any patient in AED. This is aimed to prevent the acquisition of infections transmitted by blood and body fluids.
- When attending to patients with respiratory symptoms (such as fever, sore throat, headache, running nose, cough, myalgia, skin rash, pleuritic chest pain), put on a mask and wash hands after patient contact.

10. What is the Use of Antivirals?

Amantadine can reduce the severity and duration of signs and symptoms of only influenza A illness when given in the early stage of infection. Amantadine is associated with neurological and gastrointestinal side effects. Cautions must be exercised for people with renal insufficiency. Resistance emerges within 2-5 days in around 30% of cases and such resistant viruses are readily transmissible.

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11. Where can I get further information and advice?

- Secretariat, TFIC
- Hospital Infection Control Team
- Guideline on "Use of Amantadine in the Management of H5N1 Infections" issued by Department of Health, 20 February 2003 ***(Appendix II)***.

7 March 2003
Hospital Authority

090020

Appendix I

Report Form for severe community acquired pneumonia

From : _____ **Hospital**

To: **Secretariat of TFIC, HAHO**
(Fax No: 2881-5848)
(HA intranet mail: "Secretariat of Central Committee on Infection Control")

Date : _____

Name [Patient label preferred]	HK-ID		Ward/Bed	Date of Admission	Onset Date	Travel (place and duration)	Contact with poultry or birds	Respiratory symotoms among family members	CXR on admission	Lymphocyte count & total WBC	remarks	Name of Case M.O. and phone number	General Condition

Use of Amantadine in the Management of H5N1 Infections

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Confirmed case of H5N1 infection

Amantadine 100mg twice a day for 5 days can be used to treat cases of H5N1 infection. If started within 48 hours of the start of illness, amantadine can reduce the severity and shorten the duration of illness. Doses should be reduced for children and elderly, and those with underlying renal diseases. For children aged 1 to 9, the dosage is 5mg/kg/day in 2 divided doses up to 150 mg. For children aged greater than 9, adult dosage can be used but if the body weight of the child is less than 40kg, use the regime of 5mg/kg/day in 2 divided doses up to 150 mg.

Symptomatic Contacts of H5N1 cases

Close contacts, i.e. home contacts and medical staff providing direct care to patients with H5N1 infection, should be put on medical surveillance. If they develop symptoms compatible with influenza (fever of 38°C or higher, together with cough or sore throat), they should have a throat swab or nasopharyngeal aspirate taken for viral cultures. Treatment with amantadine (100mg twice daily for 5 days) can be started pending viral culture results.

Side effects

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Department of Health, HKSAR

20 February 2003

090022

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FAQ in the Management of Severe Community Acquired Pneumonia and Influenza-like illness

Revised on March 12, 2003

1. **What is the case definition of severe Community Acquired Pneumonia (CAP)?**

   - According to the ad hoc Working Group on the subject, severe CAP refers to cases of CAP requiring assisted ventilation (limited to intubated cases only) or CAP cases under ICU/HDU care.

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   - In last winter, from December 2001 to February 2002, there were on an average 74 CAP cases per month admitted to ICU, mainly atypical pneumonia.

3. **What to do when I have a patient suffering from severe Community Acquired Pneumonia (CAP)?**

   - Such cases should be reported to the Secretariat of Central Committee in Infection Control (CCIC), HAHO Fax No: 2881-5848 (HA intranet mail: "Secretariat of Central Committee in Infection Control") using the revised report form ***(Appendix I)***.
   - The Secretariat of CCIC would update the hospital's ICTs and Duty Microbiologist of such cases.
   - The hospital ICTs are no longer required to complete the CRF.
   - Dr. Dominic Tsang, subject officer, would seek the assistance of the hospital's ICT or case Medical Officer in updating of case information when required.
   - Send additional tests as outlined below.

4. **What is the arrangement for laboratory testing?**

   - Specimens should be collected (NPA, serum samples) and sent to GVU, DH by existing arrangement. GVU would test for all potential agents of atypical pneumonia.
   - Additional specimens (NPA, clotted blood and EDTA blood samples) should be collected and sent to QMH Microbiology laboratory (attn: Dr. Malik Peiris) through the hospital's Pathology department. Special test and detailed analysis on H5 avian influenza would be performed.
   - Similarly, specimens of NPA and clotted blood from patients in NTE cluster hospitals, YCH and CMC should be sent to Virology laboratory, Prince of Wales Hospital for special testing. The request for 'atypical pneumonia surveillance' should be clearly stated on the request form.
   - Such arrangement of special tests would be reviewed in two weeks to assess the need for continuation.
   - Hospital ICT would follow up on the cases reported and make sure the tests are sent promptly.

5. **Can I send for special testing on other CAP cases?**

   - Others cases of CAP, not fulfilling the case definition of severe CAP, should be investigated according to normal routine practice i.e. specimens should be sent to GVU-DH, Virology Laboratory in Prince of Wales Hospital, Microbiology Laboratory in Queen Mary Hospital as appropriate, for testing on agents of atypical pneumonia.

- Also, for cases of CAP not fulfilling the case definition of severe CAP, if the patient is having lymphopenia, returning from China or recent poultry contact, such specimens should also be sent to the appropriate laboratory for special testing.

6. What follow up actions would be done?

- HAHO would inform the reported cases to Department of Health for epidemiological analysis.
- The Working Group would compile a database on all such cases, and analysis would be conducted on possible epidemiological linkage.
- Test results would be monitored and hospital will be notified once available.

7. What are the Infection Control Measures?

The recommended method of isolation for influenza and most other respiratory infections (except pulmonary tuberculosis) is droplet precautions in additional to Universal Precautions. This is because the disease is not airborne, but by large particle droplet (larger than 5 μm) which will not be transmitted beyond 3 feet from the source.

Droplet Precautions includes:

- Place patient in a room with other patient(s) having influenza (**cohorting**). Special air handling and ventilation are not necessary. When cohorting is not possible, maintain separation of at least 3 feet from other patients.
- Staff should have barrier apparels (gloves and gowns) when coming into contact with the patient's blood, body fluids, secretions, excretions, mucous membranes and contaminated items.
- Wear a mask when working within 3 feet of the patient.
- Wash hands after removal of gloves and before nursing another patient even when contact is only with non-contaminated items.
- Proper disinfection of the environment and equipment contaminated with blood, body fluids, secretions and excretions is required.

8. How infectious are these severe cases of CAP to healthcare workers and what have been done by HA?

- While some of these severe CAP cases were diagnosed to be Psittacosis (2), Pneumococcal (1), Influenza A H5N1 (1), Influenza A (2), Influenza B (3), Parainfluenza-2 (1), Parainfluenza-3 (1), and Klebsiella pneumoniae (1), the aetiology of most cases of severe CAP remains unknown.
- It is therefore imperative for frontline staff to adopt the recommended infection control precautions in attending to patients with respiratory symptoms such as fever, headache, myalgia, running nose, pleuritic chest pain and cough.
- To assess the potential of person-to-person spread of these severe CAP infections in the healthcare setting, information is being collected on healthcare staff in contact with these severe CAP cases with regard to any subsequent illness. Symptomatic contacts would be managed clinically and investigated accordingly. Staff contacts of any further severe CAP cases would also be monitored closely for respiratory symptoms.

9. What are the precautions when attending to patients in the AED?

- Universal Precautions should always be adopted in attending to any patient in AED. This is aimed to prevent the acquisition of infections transmitted by blood and body fluids.
- When attending to patients with respiratory symptoms (such as fever, sore throat, headache, running nose, cough, myalgia, skin rash, pleuritic chest pain), put on a mask and wash hands after patient contact.

10. What if we ourselves develop influenza-like illness?

- Healthcare workers feeling unwell should seek medical advice, e.g. attending the staff clinic.

- Based on severity of symptoms, sick leave would be granted on an individual basis.
- Staff with mild respiratory symptoms e.g. cough, but otherwise fit for work, they should put on a surgical mask when attending to patients.

(Please also refer to Question 7 for the detailed recommendation on Infection Control Measures)

11. What is the Use of Antivirals?

Amantadine can reduce the severity and duration of signs and symptoms of only influenza A illness when given in the early stage of infection. Amantadine is associated with neurological and gastrointestinal side effects. Cautions must be exercised for people with renal insufficiency. Resistance emerges within 2-5 days in around 30% of cases and such resistant viruses are readily transmissible.

- The two new anti-influenza drugs, Zanamivir (Relenza) and Oseltamivir (Tamiflu), are neuraminidase inhibitors and are active against both influenza A and B.
- Zanamivir is approved for use in patient aged 7 years or older. Oseltamivir is approved for treatment of patient aged 1 year or older.
- Oseltamivir is also approved for influenza chemoprophylaxis among person aged 13 year or older.
- When treatment is commenced within 36 to 48 hours of the onset of influenza, both drugs can reduce clinical symptoms of influenza by approximately 1 day.
- Zanamivir may rarely cause bronchospasm in patients with asthma and bronchodilators must be readily available when it is used on such patients. In patients on inhaled bronchodilators, use it before the dose of zanamivir. Oseltamivir has gastrointestinal side effects including nausea (10% in adults, 14.3% in children) and vomiting (9% in adults) which might be less severe when the drug is taken with food.
- Development of viral resistance to zanamivir and oseltamivir during treatment has been reported.
- The use of these new agents as chemoprophylxis among contacts should base on clinical symptoms, the degree of contact with index cases, and subject to evaluation by the attending physician.

12. Where can I get further information and advice?

- Secretariat, Central Committee in Infection Control
- Hospital Infection Control Team
- Guideline on "Use of Amantadine in the Management of H5N1 Infections" issued by Department of Health, 20 February 2003 ***(Appendix II)***.

Report Form for severe community acquired pneumonia

090025

From : _____ **Hospital**

To: **Secretariat of Central Committee on Infection Control, HAHO**
(Fax No: 2881-5848)
(HA intranet mail: "Secretariat of Central Committee on Infection Control")

Date : _____

Name [Patient label preferred]	HK-ID		Ward/Bed	Date of Admission	Onset Date	Travel (place and duration)	Contact with poultry or birds	Respiratory symotoms among family members	CXR on admission	Lymphocyte count & total WBC	remarks	Name of Case M.O. and phone number	General Condition

Use of Amantadine in the Management of H5N1 Infections

From the drug sensitivity study at Centres for Disease Control and Prevention (CDC) on the isolates from two H5N1 cases in 1997, it has been shown that the H5N1 virus is sensitive to amantadine. This drug is an effective agent for the treatment and prophylaxis of influenza A (but not B). However, it is prudent to note that the influenza viruses can rapidly develop resistance to this drug. Hence, doctors are advised to use the drug appropriately for treatment or prophylaxis of influenza A. The following guidelines which have incorporated the advice from the CDC experts are recommended for doctors' reference.

Confirmed case of H5N1 infection

Amantadine 100mg twice a day for 5 days can be used to treat cases of H5N1 infection. If started within 48 hours of the start of illness, amantadine can reduce the severity and shorten the duration of illness. Doses should be reduced for children and elderly, and those with underlying renal diseases. For children aged 1 to 9, the dosage is 5mg/kg/day in 2 divided doses up to 150 mg. For children aged greater than 9, adult dosage can be used but if the body weight of the child is less than 40kg, use the regime of 5mg/kg/day in 2 divided doses up to 150 mg.

Symptomatic Contacts of H5N1 cases

Close contacts, i.e. home contacts and medical staff providing direct care to patients with H5N1 infection, should be put on medical surveillance. If they develop symptoms compatible with influenza (fever of 38°C or higher, together with cough or sore throat), they should have a throat swab or nasopharyngeal aspirate taken for viral cultures. Treatment with amantadine (100mg twice daily for 5 days) can be started pending viral culture results.

Side effects

Amantadine can cause neurological and gastrointestinal side effects. In one study of healthy adults, approximately 13% of those treated with amantadine developed side effects. Neurological side effects include nervousness, anxiety, difficulty in concentrating and dizziness. More serious neurological side effects like marked behavioural changes, delirium, hallucinations, agitation and seizures have been observed. Gastrointestinal side effects include nausea, vomiting abdominal pain and constipation. These side effects will stop after the drug has been withdrawn. Cautions must be exercised for people with renal insufficiency and in the elderly age group. The drugs are contraindicated for persons with seizure disorders.