

Case Definitions for Infection with Novel Influenza A (H1N1) Virus

A **confirmed case** of novel influenza A (H1N1) virus infection is defined as a person with an influenza-like illness with laboratory confirmed novel influenza A (H1N1) virus infection by one or more of the following tests:

1. real-time RT-PCR
2. viral culture

Medical care for patients with novel influenza A (H1N1) virus

Not all patients with suspected novel influenza (H1N1) infection need to be seen by a health care provider. For most people, the illness appears to be mild and self-limiting. Cases have been confirmed in all age groups, but children and younger people seem to be much more likely to be affected, whereas fewer cases have been confirmed to date in older adults.

For a minority of people, influenza A(H1N1) has caused severe illness with complications. In many, but not all, of these cases **underlying risk factors (co-morbidities #)** have been identified that are likely to have contributed to the severity of the condition.

Complications of Influenza:

The following are the recognized complications of influenza. At times these complications, such as an exacerbation of chronic airways disease, may be the presenting symptom. Respiratory complications are the most common ones (especially secondary infections). Cardiac events following influenza are not uncommon.

Complications of influenza	Major clinical category
Respiratory	Pneumonia: primary viral, secondary bacterial, combined Upper respiratory: otitis media, sinusitis, conjunctivitis Acute laryngotracheo-bronchitis (croup) Bronchiolitis Complication of pre-existing disease
Cardiovascular	Myocarditis Pericarditis
Muscular	Rhabdomyositis Rhabdomyolysis with myoglobinuria and renal failure
Neurological	Encephalitis

	Reye's syndrome Guillain-Barré syndrome Transverse myelitis
Systemic	Toxic shock syndrome Sudden death

Co-morbidities / Risk factors:

Patients who are considered vulnerable to severe outcomes and should be a focus of early identification, assessment and treatment, include the following:

- Chronic respiratory conditions, including asthma, COPD, Obstructive sleep apnoea
- Pregnant women, esp. in second or third trimester
- Morbid obesity
- Other possible predisposing conditions, such as chronic cardiac disease (not simple hypertension), and chronic illnesses including diabetes mellitus, renal failure, haemoglobinopathies, immunosuppression (including cancer, HIV/AIDS, chemotherapy, long term steroids).
- Adults \geq 65 years of age esp. those with other chronic diseases
- Children under the age of 5 years, esp. those below the age of 2 years

As more epidemiologic and clinical data become available, these risk groups might be revised.

Patient Home Assessment Tool

The following **patient home assessment tool** designed to detect moderate or severe influenza can be used to guide the patient on the need to seek professional medical attention.

Patients with ILI are advised to seek medical care should they develop any of the symptoms and signs listed as below :

1	Respiratory Difficulties: Shortness of breath, rapid breathing or Purple or blue discoloration of lips
2	Coughing out blood or blood streaked sputum
3	Persistent chest pains
4	Persistent diarrhea and / or vomiting
5	Fever persisting beyond 3 days or recurring after 3 days

6	Abnormal behaviour , confusion, less responsive , convulsion
7	Dizziness when standing and/or reduced urine production

RECOMMENDATION:

Patients with ILI:

1. who have **moderate or severe illness (based on the Home Assessment Tool)**

OR

2. who have **significant co-morbidities** and hence are at high risk for complications from influenza

should seek EARLY professional medical assessment (preferably within first 2 days of illness) from the nearest hospital or health clinic (depending on the severity of symptoms)

Patients to be tested for novel influenza A / H1N1 virus

* **Influenza-like-illness (ILI)** is defined as fever (esp. temperature > 38°C) and a cough and/or a sore throat in the absence of a KNOWN cause other than influenza.

Patients with mild clinical disease should not be tested as a routine

RECOMMENDATION: Laboratory testing for Influenza A H1N1 to assist with clinical management is indicated for those who meet the **case definition for ILI *** (see above) and are:

1. symptomatic **patients with moderate to severe disease (see clinical assessment tool below **)**

To test for novel H1N1 influenza virus, upper respiratory specimens, such as a nasopharyngeal swab, throat swab, or tracheal aspirate should be collected.

**** Clinical assessment tool for moderate to severe influenza:**

Patients with ILI and any of the following parameters should be considered for admission to the of nearest designated hospital
Respiratory impairment: any of the following <ul style="list-style-type: none">▪ Tachypnoea, respiratory rate > 24/min▪ Inability to complete sentence in one breath▪ Use of accessory muscles of respiration, supraclavicular recession▪ Oxygen saturation ≤ 92% on pulse oximetry▪ Decreased effort tolerance since onset of ILI▪ Respiratory exhaustion▪ Chest pains
Evidence of clinical dehydration or clinical shock <ul style="list-style-type: none">▪ Systolic BP < 90mmHg and/or diastolic BP < 60mmHg▪ Capillary refill time > 2 seconds, reduced skin turgor
Altered Conscious level (esp. in extremes of age) <ul style="list-style-type: none">▪ New confusion, striking agitation or seizures
Other clinical concerns: <ul style="list-style-type: none">▪ Rapidly progressive (esp. high fever > 3 days) or serious atypical illness▪ Severe & persistent vomiting and diarrhoea

Patients to be hospitalized for novel influenza A / H1N1 virus

Patients with suspected influenza manifesting with mild disease will not require admission to hospital.

Patients should be clinically assessed and the admission decision will be based mainly on the severity of the illness.

RECOMMENDATION:

The following patients will be admitted to the flu ward / cubicle of the hospital:

- All **patients fulfilling criteria of ILI** with **any of the parameters listed in the clinical assessment tool **** for moderate to severe influenza (with or without co-morbidities)

Antiviral Treatment for Novel Influenza A / H1N1

Clinical judgment is an important factor in treatment decisions.

Persons with suspected novel H1N1 influenza who present with an uncomplicated febrile illness (mild disease) typically do not require treatment.

RECOMMENDATION:

Antiviral Treatment is recommended for:

1. **All hospitalized patients (ie. those with moderate to severe disease) with confirmed or suspected novel influenza A H1N1.** Empirical therapy for suspected patients with severe disease should be considered if the turnaround time for H1N1 confirmation is prolonged. The antiviral treatment maybe stopped if the results are negative.

If a patient is not in a high-risk group or is not hospitalized, they generally do not require antiviral therapy. Nonetheless, healthcare providers should use clinical judgment to guide treatment decisions esp. in cases where there has been rapid deterioration in clinical status.

Many patients who have had novel influenza (H1N1) virus infection, but who are not in a high-risk group have had a self-limited respiratory illness similar to typical seasonal influenza. For most of these patients, the benefits of using antivirals may be modest at best. Therefore, testing and treatment efforts should be directed primarily at persons who are hospitalized or at higher risk for influenza complications.

Once the decision to administer antiviral treatment is made, treatment with **oseltamivir** or **zanamivir** should be initiated as soon as possible after the onset of

symptoms. Evidence for benefits from antiviral treatment in studies of seasonal influenza is strongest when treatment is started within 48 hours of illness onset. However, some studies of oseltamivir treatment of hospitalized patients with seasonal influenza have indicated benefit, including reductions in mortality or duration of hospitalization even for patients whose treatment was started > 48 hours after illness onset. Recommended duration of treatment is 5 days. Antiviral doses recommended for treatment of novel H1N1 influenza virus infection in adults or children 1 year of age or older are the same as those recommended for seasonal influenza.

Oseltamivir

Adults and adolescents: The recommended oral dose of oseltamivir capsules in adults and adolescents 12 years of age and older is **75 mg bd for 5 days**. Adults and adolescents 12 years of age and older who are unable to swallow capsules may receive the appropriate dose of oseltamivir suspension.

Paediatric patients: The recommended oral dose of oseltamivir for paediatric patients 1 year and older who cannot swallow a 75 mg capsule is shown below.

Recommended oral dose of Tamiflu for paediatric patients 1 year and older who cannot swallow a 75 mg capsule	
Body weight in kg	Recommended dose for 5 days
< 15kg	30 mg twice daily
15 - 23 kg	45 mg twice daily
23 - 40 kg	60 mg twice daily
> 40 kg	75 mg twice daily

Zanamivir

The recommended dose of zanamivir is **2 puffs (2 x 5 mg) bd for 5 days** providing a total daily inhaled dose of 20 mg.

Antiviral Chemoprophylaxis for Novel Influenza A / H1N1

For antiviral chemoprophylaxis of novel (H1N1) influenza virus infection, either oseltamivir or zanamivir are recommended. Duration of antiviral chemoprophylaxis *post-exposure* is 10 days after the last known exposure to novel (H1N1) influenza. The indication for post-exposure chemoprophylaxis is based upon **close contact with a person who is a confirmed case of novel influenza A (H1N1) virus infection during the infectious period of the case**. The *infectious period* is defined as one day before until 7 days after the case's onset of illness. If the contact occurred with a case whose illness started more than 7 days before contact with the person under consideration for antivirals, then chemoprophylaxis is not necessary.

RECOMMENDATION:

Post exposure antiviral chemoprophylaxis with either oseltamivir or zanamivir can be considered for the following:

- 1. Close contacts (see definition below) of confirmed cases, who are pregnant (esp. in 2nd. & 3rd. trimester)**

Chemoprophylaxis is best given **within 48 hours of exposure**.

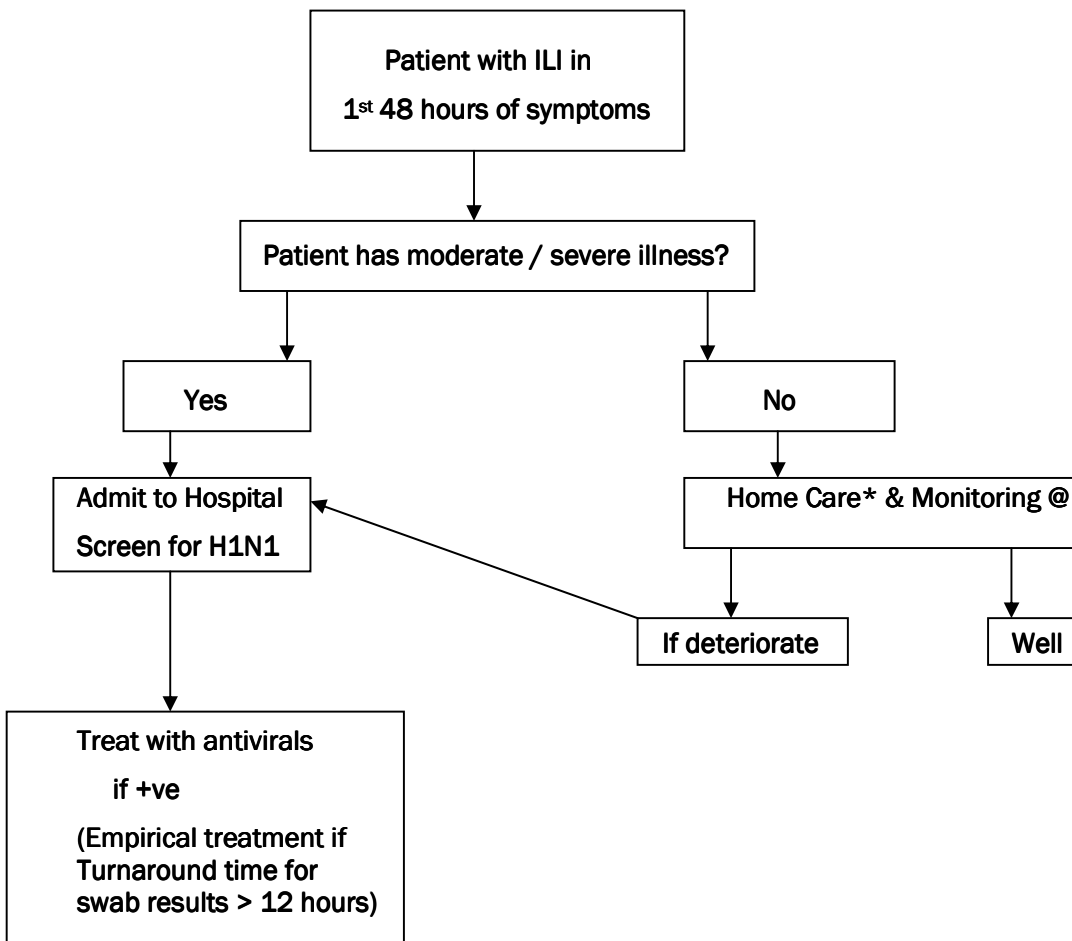
Close Contacts are defined either:

- as those who live in the same house / premises (household contacts)
- those who have sustained close contact (< 3feet) for at least 4 hours

Dosage of antiviral prophylaxis is as follows:

Oseltamivir 75 mg daily for 10 days

Zanamivir 10 mg (2 puffs) daily for 10 days



Algorithm for H1N1 management

- *** Home Care:** supportive care including adequate fluids, paracetamol, cough mixtures, lozenges, etc.
- **@** See Patient Home Assessment Tool
- Antiviral therapy is best given within first 48 hours of illness. Beyond 48 hours, antiviral medication may still be indicated on clinical grounds (eg. progressive symptoms)
- If empirical treatment with antivirals has been given, treatment should cease if the swab result is negative for H1N1.

