

Influenza A (H1N1) Preparedness and Response

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Supportive Management of Influenza A (H1N1) Patients

Management of patients

- The objectives of patient management are to provide supportive health care to decrease mortality and to minimize disease transmission
- It will be necessary to triage patients for treatment during a pandemic to maximize the impact of available treatment capacity.
- Essential medical services should be continued, while elective and non-essential medical services should be temporarily suspended.
- Patients are most likely to be managed in two distinct settings: in the health-care facility and at home.

The majority of influenza cases may be cared for at home with the simple supportive care

However, if there is deterioration or severe symptoms, then patients will need to access a health-care facility.

These symptoms may include: weakness/not able to stand, lethargy, unconsciousness, convulsions, very difficult/obstructed breathing or shortness of breath, inability to drink fluids and dehydration, high fever

In case of children, indications for hospitalization include

- Hypoxemia (oxygen saturation consistently less than 90 percent in room air)
- Dehydration, or inability to maintain hydration orally; inability to feed in an infant
- Moderate to severe respiratory distress: respiratory rate >70 breaths/min in infants <12 months or >50 breaths/min in older children, difficulty breathing, apnea, grunting
- Toxic appearance, which is more common in children with bacterial pneumonia, may suggest a more severe course of pneumonia (eg, cardiopulmonary compromise)
- Underlying conditions that may predispose to a more serious course of pneumonia (eg, cardiopulmonary disease), might be worsened by pneumonia (eg, metabolic disorder), or might adversely affect response to treatment (eg, immunocompromised host)
- Presence of complications (eg, effusion/empyema)
- Failure of outpatient therapy (worsening or no response in 24 to 72 hours)

Patient management in the health-care facility

- Admission criteria may change depending on bed availability, but should be reserved for severe cases most likely to benefit from treatment.
- For milder cases presenting to the outpatients department, a caregiver, preferably an available family member, should be identified if possible to manage care of the ill patient in the home if the patient is being discharged.
- Health facilities should anticipate a very high demand for treatment with supportive care, and should plan accordingly. Based on current estimates, agencies should anticipate that up to 10% of those who fall ill may require inpatient treatment. In a population of 10 000, this could mean 500–600 persons requiring inpatient care for influenza alone over a period of 2–3 months, or approximately 6–10 patients per day. These figures are an average to assist calculations. Note that the number of patients affected per week may not be constant over the pandemic period: it is likely that there will be increasing numbers affected per week, reaching a peak in the middle of the pandemic (weeks 4–8) with decreasing numbers thereafter.

Ensure:

- separation of patients with respiratory symptoms from those presenting with other symptoms at both the outpatient and inpatient level;
- availability of admission and discharge criteria (these may change depending on treatment capacity);
- availability of case-management protocols;
- referral protocol, if feasible (with appropriate infection control during the transfer);
- confinement in a separate respiratory ward (preferably an isolation facility) for patients admitted with suspected pandemic influenza;
- maximum separation of beds (1meter) and head-to-toe positioning of patients in inpatient wards if space is limited;
- good ventilation of outpatient and inpatient areas;
- adherence to Standard and Droplet Precautions;
- use of PPE according to risk of exposure.

Inpatient treatment should include:

- treatment of dehydration with IV or oral rehydration fluids;
- supplemental oxygen therapy (if available) by face mask rather than nasal prongs;
- antibiotics (oral or parenteral) for secondary bacterial infections;
- non-aspirin antipyretics (Paracetamol) for pain and fever;
- nutritional supplementation as needed.

Note: In immune-compromised , a distinction between opportunistic pneumonia and secondary pneumonia from pandemic influenza may be difficult.

Antiviral medicines decrease the duration of virus excretion and the severity of illness when used for treatment of ill patients, and may also prevent illness when used for prophylaxis. If only limited quantities are available, prioritization of use should be in place according to national protocol.

In general, the order of priority for antiviral use should be:

- treatment of sick health-care and other essential staff;
- treatment of sick individuals from the community;
- post-exposure prophylaxis for essential staff with unprotected, high-risk exposure;
- pre-exposure prophylaxis for critical staff with anticipated high-risk exposure.

Antimicrobial Therapy

Outpatient Treatment

In case of Influenza A H1N1 infection **an antibiotic is usually not required**, especially in patients who are treated at home. If there is an indication then the following advice can be followed.

A **β -lactam** (amoxicillin-clavulanate) OR a **macrolide** (azithromycin) OR a **fluoroquinolone** (levofloxacin, ciprofloxacin). The recommendations call for fluoroquinolones to be reserved for adults who have not responded to previous therapy, are allergic to the preferred agents, or have a documented infection with highly drug-resistant pneumococci.

Hospitalized Patients

A **parenteral β -lactam** (cefuroxime or amoxicillin-clavulanate) **plus a macrolide** (azithromycin). Alternatively, a fluoroquinolone (levofloxacin, ciprofloxacin) can be administered alone. The recommendations call for fluoroquinolones to be reserved for adults who have not responded to previous therapy, are allergic to the preferred agents, or have a documented infection with highly drug-resistant pneumococci.

If aspiration is suspected/ patient not responding to empiric antibiotic therapy/ ventilator associated pneumonia then:

A high **parenteral β -lactam (ticarcillin/clavulanate) plus a macrolide**(azithromycin) **or a fluoroquinolone** (levofloxacin, ciprofloxacin) should be used.

It is **strongly recommended to send blood/sputum/throat swab/ throat secretions/ endotracheal tube secretions for culture and sensitivity tests** and base or alter antimicrobial therapy according to results. However empiric antimicrobial therapy should be instituted where secondary bacterial pneumonia/atypical pneumonia/ventilator-associated pneumonia/aspiration pneumonia is suspected pending culture and sensitivity reports.

It is imperative to state on the requisition slip the antibiotic patient is going to receive or is currently receiving.

Patient management at home

- During a pandemic, very high numbers of patients presenting to the health-care facility will necessitate home treatment. Trusted community leaders should be identified in advance for crowd control at the health-care facility and to address concerns among health-seekers and their caregivers.
- Ill people not exhibiting severe symptoms and signs of influenza should be encouraged (through health messaging) to stay at home, institute respiratory etiquette (cover coughs and sneezes or cough/sneeze into sleeve) and hand hygiene, and restrict close contact (within approximately 1m) with others as much as possible.
- Home confinement of ill people in crowded settings may not be practicable. However, restricting contact with others should be encouraged as much as possible.
- Adequate supervision within the household of the ill person should be ensured with preferably only one caregiver to limit potential exposure.

- Patients and caregivers should be trained to wear and dispose of masks during the infectious period of the patient, if supplies are available. Where supplies are limited, it is more important in the home that the patient wears the mask than the caregiver. The mask need not be worn all day and only when close contact (within approximately 1m) with the caregiver or others is anticipated. Masks should be disposed of safely if wet with secretions. Tightly-fitting scarves or a reusable mask made of cloth covering the mouth and nose could be used if masks are unavailable. They should be changed if wet and washed with soap and water.
- If enough masks are available, caregivers should also use them to cover their mouth and nose when in close contact with ill persons.
- The caregiver should always wash hands after patient contact.
- General support and advice should be given to caregivers on the use of antipyretics (acetylsalicylic acid should be avoided in children), oral fluids, nutrition and bed rest.
- Instructions must be provided on the use of antibiotics (if necessary) for bacterial complications of influenza when prescribed.
- Instructions for further care in case of deterioration (if capacity exists) should be given (i.e. when there are symptoms of severe illness or dehydration)
- Those who have recovered are no longer infectious and can be considered immune (usually 2–3 weeks after the onset of illness).
- Proper respiratory etiquette and hand hygiene must be promoted for all household members.
- Keep windows open and allow ventilation of the room/tent.
- Household surfaces should be cleaned regularly with soap and water or disinfectant.