Section 4 Clinical Case Management

Introduction
This section is intended to provide community-wide standardized procedures by which healthcare providers may (1) efficiently diagnose cases of novel and pandemic influenza infection, (2) evaluate and manage patients with novel and pandemic influenza infection, (3) triage cases to appropriate levels of care, (4) determine when antiviral treatment can and should be initiated, and (5) determine when and how to administer prophylaxis in the form of antiviral agents and vaccinations. In addition, the section describes actions that may be performed by Contra Costa Health Services to support healthcare providers in these activities.

Actions recommended to contain the spread of infection, once a case has been identified, are described in the Infection Control and Prevention Section.

The management of influenza is based primarily on sound clinical assessment and management of individual patients as well as an assessment of locally available resources such as rapid diagnostics, antiviral drugs and vaccines, and medical care. Early identification of cases through heightened clinical awareness and disease surveillance and swift action for isolation and initiation of treatment can benefit the individual patient and may slow the spread of influenza within the community.

This section draws in part on studies conducted and/or reviewed by the World Health Organization (WHO). WHO convened a panel of experts who rated mortality, duration of hospitalization, incidence of lower respiratory tract complications, resistance and serious adverse effects as critical outcomes for the assessment of the treatment interventions for the currently circulating H5N1 infected patients. It is unknowable if the current H5N1 virus will ever mutate to become easily transmittable from person-to-person-to-person. Thus, this section describes the general case management guidelines for a novel strain of pandemic influenza, irrespective of its type.

This section includes clinical guidelines and recommendations for the management of influenza and related issues. These guidelines may change as new information becomes available. The clinical guidelines presented in this section are based on existing guidance from the Centers for Disease Control and Prevention (CDC) and the US Department of Health and Human Services (HHS). Directives or Orders issued by the Health Officer require compliance with a specified action to protect the health and welfare of the community. See Health Officer Authority Section for legal authorities.

Additional Planning Assumptions
- Neither the clinical characteristics of a novel or pandemic influenza virus strain nor the groups at highest risk can be defined beforehand. Thus, risk
groups for severe and fatal infections can differ significantly from those of inter-pandemic influenza strains.

- The incubation period for seasonal human influenza averages one to four days. CCHS assumes this would approximate the incubation period for a novel virus strain that is transmitted between people by respiratory secretions.
- People may be asymptomatic while infectious.
- Viral shedding will occur one-half to one day prior to the onset of illness.
- Shedding will be the heaviest in the first two days after symptoms develop. Children are typically heavy shedders in the first few days of illness (one day prior to onset of illness and two days after).

**Interpandemic/Pandemic Alert Period (WHO Phases 1-5)**

The objectives for clinical management during the Interpandemic/Pandemic Alert period are:

1. Regular education and updates to healthcare providers on recommended practices and protocols pertaining to novel and pandemic influenza;
2. A standardized process for vaccine and antiviral procurement and distribution as possible;
3. Early identification and proper management of cases to help control the spread of disease in the pandemic alert phases; and
4. Appropriate triage of cases once the pandemic is underway.

**Provider Education and Updates**

Throughout the pandemic phases it is imperative for health care providers to keep fully informed on the progression of the disease as well as clinical treatment and reporting guidelines and directives. All providers are advised to be alert for physician notices and other information distributed by CCHS. Useful websites include the CCHS website - [www.cchealth.org](http://www.cchealth.org), the CDPH site - [www.pandemicflu.gov](http://www.pandemicflu.gov), the World Health Organization site - [www.who.int](http://www.who.int) and the CDC site - [www.cdc.gov/flu/avian](http://www.cdc.gov/flu/avian). (For more information on the communication methods CCHS uses, see Sect. 9 Risk Communication and Public Education)

CCHS will ensure that clinicians and laboratory scientists know how to access the most current recommendations for novel influenza case identification, management, and laboratory testing by distributing protocols in settings where cases (and their contacts) might be diagnosed. In conjunction with the CDPH and CDC, CCHS will develop and distribute guidance on managing patients who test negative for novel influenza virus, addressing the potential for false negative findings and the clinical and epidemiologic criteria that would warrant continued suspicion. Additionally, CCHS will:

- Revise and distribute virus transmission prevention and control guidelines to reflect the changing recommendations for clinical standards;
• Distribute reminders to clinicians and laboratory scientists on how to access the most up-to-date recommendations for novel influenza case identification, management, and laboratory testing;
• Distribute revised guidance on vaccination, prophylaxis, and treatment recommendations based on most current national and state recommendations, including a prioritized list of treatment and prophylaxis priority recipients and will work to ensure the revised guidance is made available to healthcare practitioners;
• Revise and distribute protocols and guidelines of the pandemic alert phase to reflect any substantial increased risk, as needed;
• Distribute Health Officer directives where indicated;
• Provide interim and emergency updates on disease surveillance as the pandemic progresses;
• Develop and distribute standardized patient education materials, in collaboration with the CDPH and CDC (see Sect. 9 Risk Communication and Public Education)
• Develop processes to coordinate access to vaccines, antiviral drugs, and other medications needed to mitigate and manage secondary infections.

**Vaccine Procurement and Distribution**
The plan for distribution of vaccines assumes that strain-specific vaccine will become available at some point after the first wave of the pandemic, limiting the amount of effective vaccine available in Contra Costa. The CDPH will determine the guidelines for the allocation and distribution of vaccines and the County Health Officer will issue directives on the prioritization and use of vaccines based on state and federal guidelines.

(For more information about the CDPH Vaccine Prioritization Plan and supplemental documents available online, see appendix.)

For more detailed information about the process by which Contra Costa requests vaccine from CDHS and the distribution of vaccine, see the Contra Costa County/Operational Area SNS Management Plan, Draft v.2.0 (2/26/07) - Section V: Management of SNS Operations (pgs. 14 - 18).

During the pandemic alert phase, CCHS will
• Review current supply usage and estimate the amount of vaccine needed for priority populations;
• Develop and disseminate a plan for vaccine coverage for priority populations;
• Develop and disseminate a plan for distribution of vaccines based on the amount of available vaccine, priority populations, availability of site and staffing resources, and other variables.
• Work to enhance vaccine coverage for seasonal flu and pneumonia in high risk populations and health care staff;
• Refine and disseminate data collection and reporting tools;
• Activate vaccine coverage plans at the direction of the Health Officer.

Antiviral Procurement and Distribution

Pandemic Alert

During the alert period, the CDPH will stockpile for Contra Costa County, antiviral medications necessary for medical management of approximately 25% of the County’s population.

However, the CDPH is responsible for the storage of antivirals and no product will be distributed from the state storage site(s) until a pandemic is declared or the State Public Health Officer orders its release to local health departments. This would likely be prior to cases within California, assuming a WHO phase 6 pandemic has been declared anywhere in the world. (according to Contra Costa County/Operational Area SNS Management Plan, Draft v.2.0 (2/26/07)

After estimating the general amounts needed to treat and provide prophylaxis to priority populations, CCHS will encourage local health care facilities to also stockpile antivirals.

Pandemic Period

During the pandemic period, antiviral medications will be requested from the Strategic National Stockpile (See CCHS Emergency Response Plan and the Contra Costa County/Operational Area SNS Management Plan, Draft v.2.0 (2/26/07). Limited availability of medications from national sources is likely to impact the size of the cache and the supply is expected to be quickly exhausted.

The primary antiviral procurement objectives during this phase of the epidemic are to
1. Ensure prophylaxis of health care infrastructure and critical emergency response providers, and
2. Treat those at greatest risk for severe illness and death

During this phase of the epidemic, the Health Officer will issue directives for the use of limited antivirals, for instance limiting the use of medications for prophylaxis of close contacts in an effort to contain the pandemic.

Guidelines for Healthcare Providers

Early Identification
See 3 Laboratory Capacity

Diagnosis of patients with novel or pandemic influenza virus infections

Alert Period
During the alert period, astute clinicians will provide the key to early detection of novel influenza virus infections in Contra Costa County. The current novel influenza A virus of concern is avian influenza A, subtype H5N1, which has been transmitted from birds to humans in parts of Asia and the Pacific, Europe and Eurasia, and the Near East. Exposure risk for avian influenza (H5N1) is highest for persons who have had direct contact with infected poultry, or surfaces and objects contaminated by their droppings (e.g. persons exposed during slaughter, de-feathering, butchering, and preparation of poultry for cooking). Therefore, individuals who have traveled to a country with avian influenza A (H5N1) who report direct exposure to sick or dying poultry and who exhibit respiratory symptoms should be considered at highest risk. During the alert period, the likelihood that a patient presenting with respiratory illness in Contra Costa County will be diagnosed with novel influenza A (H5N1) is low and depends upon an epidemiological link to this type of exposure. Therefore, only patients meeting both clinical and epidemiologic criteria for suspected influenza A (H5N1) should be evaluated for possible novel influenza infection.

Although the epidemiologic criteria here described for novel influenza are based on recent human cases of avian influenza A (H5N1), the process for identifying and managing cases of novel influenza A infection will be similar, regardless of the specific novel influenza strain. In the future, other novel influenza A viruses might become significantly associated with human disease and develop pandemic potential. If this occurs, this guidance will be updated.

During this time (August 2007), exposure for avian influenza is highest for persons with direct contact with infected poultry or surfaces / equipment contaminated with droppings. Individuals who have traveled to a country reporting H5N1 and who exhibit respiratory symptoms are at highest risk for avian influenza.

**Key features of the currently circulating potential pandemic influenza strain** (H5N1) are an initial symptom of high fever and influenza like illness with lower respiratory tract symptoms. Diarrhea, vomiting, abdominal pain and pleuritic pain and bleeding from the nose and gums have been reported early in the course of illness in some patients. Watery diarrhea without blood or inflammatory changes is more common and may precede respiratory manifestations by up to one (1) week.

Lower respiratory tract symptoms develop early in the course of illness. Respiratory distress, tachypnea and inspiratory crackles are common. Sputum production is variable and sometimes bloody. Almost 100% of patients have clinically apparent pneumonia.
Usually Chest X-ray findings were present 7 days after the onset of fever. These findings include:

- Diffuse, multifocal or patchy infiltrates
- Interstitial Infiltrates
- Segmental or lobar consolidation with air Bronchograms
- Pleural effusions are uncommon.
- Diffuse bilateral ground-glass infiltrates are seen when the illness has progressed to respiratory failure (along with manifestations of acute respiratory distress syndrome (ARDS))

Multi-organ failure with signs of renal dysfunction and sometimes cardiac dilatation and supraventricular tachyarrhythmias has been common.

During the pandemic alert period any patient seen in Contra Costa County meeting both the clinical and epidemiological criteria below should be evaluated for possible novel infection.

1. A patient who has an illness that requires hospitalization or is fatal; AND has or had a documented temperature of ≥ 38°C (>100.4°F); AND has radiographically confirmed pneumonia, acute respiratory distress syndrome (ARDS), or other severe respiratory illness for which an alternative diagnosis has not yet been established; AND has at least one of the potential exposure criteria
   - a history of recent travel to a country with a pandemic influenza strain documented in poultry, wild birds, humans, and/or history and potential contact with ill or dead wild or domestic birds within 10 days of symptom onset, AND at least one of the following potential exposures:
     - Direct contact with (e.g., touching) sick or dead domestic poultry;
     - Direct contact with surfaces contaminated with poultry feces;
     - Consumption of raw or incompletely cooked poultry or poultry products;
     - Direct contact with sick or dead wild birds suspected or confirmed to have a pandemic influenza infection.
     - Close contact (within 3 feet) of a person who has been hospitalized or died due to a severe unexplained respiratory illness
     - Was in close contact (within 3 feet) of an ill person who has confirmed or suspected pandemic influenza infection
     - Worked with a live pandemic influenza virus in a laboratory.

Any patient who meets the criteria listed above should be considered a suspect case and laboratory testing is recommended.

Patient Treatment and Management issues

Specific guidance for management of illness include:
- **Fever management** – Fever management can significantly improve the comfort of patients with influenza and may be particularly important for children with a history of febrile convulsions and for those attempting to maintain their hydration status at home. Antipyretics including acetaminophen and ibuprofen are appropriate for use in the management of fever caused by influenza. In order to avoid an overdose, patients taking an antipyretic should be advised to avoid concurrently using over-the-counter preparations containing the same medication. Aspirin and other salicylates should be avoided in children under the age of 18 years, because of the association between aspirin treatment and the development of Reye syndrome - a potentially fatal acute disease of the liver accompanied by hyperammonemic encephalopathy - in children with influenza.

- **Maintenance of hydration** – Insensible fluid losses caused by fever and tachypnea, coupled with malaise and poor appetite, place patients with influenza at significant risk for dehydration. In addition, some patients suffer fluid loss from vomiting. Patients should be advised to rest in bed and drink plenty of fluids. Patients unable to maintain their hydration through oral intake will require IV fluids.

- **Bronchospasm** – Patients with influenza may experience significant bronchospasm, particularly those with underlying inflammatory diseases of the airways including asthma. Treatment with bronchodilators and anti-inflammatory agents (e.g., inhaled or systemic corticosteroids) should be considered and should be tailored to the severity of the clinical signs and symptoms. Because the use of nebulized medications is thought to increase the risk of transmission of influenza, medications administered orally or by MDI are preferred.

- **Antivirals** – Early antiviral therapy shortens the duration of illness due to seasonal influenza and may have similar effects on illness due to novel or pandemic influenza viruses. Therefore, the use of antiviral agents for treatment should be considered, particularly for those at highest risk of severe complications of influenza infection. Prophylaxis should be considered for close contacts of patients with influenza, particularly if they are unvaccinated and at high risk for complications if infected.

- **Monitoring for complications** – Diffuse primary influenza virus pneumonia may appear after 3-5 days of illness and is often life-threatening. Influenza viral pneumonia is characterized by severe dyspnea, cyanosis, and the production of small amounts of bloody sputum. Signs of secondary bacterial pneumonia may include a reappearance of fever after an afebrile period, tachypnea, increasing cough and shortness of breath, signs of respiratory distress (e.g.,
grunting, nasal flaring, and retractions of the chest wall), pleuritic chest pain, and hypoxia.

- **Bacterial tracheitis**, which presents with signs of airway obstruction suggestive of croup, may also complicate influenza and may be life-threatening.

- **Otitis media** is a common complication of influenza, especially in young children. Oral antibiotic therapy and medication to relieve pain may be useful in this situation.

- **Myocarditis** may be seen with influenza infection but fortunately is relatively uncommon.

- **Encephalitis and meningitis**, though rare, may complicate influenza infection.

Additional complications that may be seen in children include apnea (especially young infants), febrile seizures, and vomiting with dehydration. Asthma exacerbations, although common in children with influenza, may be seen in influenza patients of any age and should be appropriately managed and monitored. Viral myositis, typically involving the calves, may also be seen in children with influenza A, although this complication is more commonly seen with influenza B.

**Antiviral Treatment**

The WHO recommends that patients with suspected clinical pandemic Influenza A should be started immediately on a neuraminidase inhibitor. Early treatment will provide the greatest benefit. At this time, (August 2007) there is no data that supports regimes other than the standard dosing of Oseltamivir (Tamiflu) or Zanamivir (Relenza). Most studies of these drugs were based on treatment/prophylaxis of seasonal flu.

**Oseltamivir (Tamiflu)**

Oseltamivir treatment may be of net clinical benefit to these H5N1 patients. The clinical recommendation is that in patients with confirmed or strongly suspected H5N1 infection, clinicians should administer Oseltamivir treatment as soon as possible. This is classified as a strong recommendation, very low quality evidence. At this time no variation from the dosing described below or length of treatment from that described for seasonal influenza. Oseltamivir is administered by mouth and is available as a capsule (75mg) or as a powder for oral suspension. These recommendations apply to adults, pregnant women and children.

The recommended dosing is as followed:

<table>
<thead>
<tr>
<th>Antiviral</th>
<th>Age 1-6</th>
<th>Age 7-9</th>
<th>Age 10-12</th>
<th>Age 13-64</th>
<th>Age &gt; 65</th>
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<tr>
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<tr>
<td>Agent</td>
<td>years</td>
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<tr>
<td>Oseltamivir</td>
<td>Varies by weight</td>
<td>Varies by weight</td>
<td>Varies by weight</td>
<td>75 mg twice a day</td>
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<td>75 mg twice a day</td>
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*dose reduction is recommended for patients with renal impairment (creatinine clearance between 10-30ml/min)*

Weight adjustment criteria for children older than 1 year:

<table>
<thead>
<tr>
<th>Weight Range</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;= 15 kg</td>
<td>30 mg twice daily</td>
</tr>
<tr>
<td>&gt;15 to 23 kg</td>
<td>45 mg twice daily</td>
</tr>
<tr>
<td>&gt;23 to 40 kg</td>
<td>60 mg twice daily</td>
</tr>
<tr>
<td>&gt;40 kg</td>
<td>75 mg twice daily</td>
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</table>

The most commonly reported adverse effect is nausea and vomiting. Rare cases of anaphylaxis and serious skin reactions have been reported.

**Zanamivir (Relenza)**
No clinical trials have evaluated Zanamivir in the treatment of H5N1 patients. There are very few studies describing animal and in vitro data about the effects of zanamivir on the H5N1 virus. This drug is not approved for children < 7 years of age. The recommendation in patients with confirmed or strongly suspected infection with avian influenza A (H5N1) is that clinicians might administer zanamivir. This recommendation is classified as a weak recommendation with very low quality evidence. At this time the standard dosing and length of treatment regimes are recommended.

**Zanamivir is available for oral inhalation only using a diskhaler device.**

<table>
<thead>
<tr>
<th>Antiviral Agent</th>
<th>Age 1-6 years</th>
<th>Age 7-9 years</th>
<th>Age 10-12 years</th>
<th>Age 13-64 years</th>
<th>Age &gt; 65 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zanamivir</td>
<td>N/A</td>
<td>10 mg twice a day</td>
<td>10 mg twice a day</td>
<td>10 mg twice a day</td>
<td>10 mg twice a day</td>
</tr>
</tbody>
</table>

No dosing adjust is needed for patients with hepatic or renal impairment.

Other treatment measures will likely be supportive in nature.

**Antivirals as prophylaxis**
Antivirals are not recommended as a form of prophylaxis at this time.

**Infection Control Measures**
(See Sect. 6 Infection Prevention and Control for infection control and prevention measures to reduce the risk of exposure and transmission, and Sect. 7 Non-Pharmaceutical Interventions.) Effective infection control processes are consistent and routine, specific to the mode of transmission and rely on prompt identification and isolation of suspect and confirmed cases to reduce transmission.
**Reporting**
As soon as a patient is identified as suspected of possible avian influenza or novel pandemic flu virus, providers are to notify the Contra Costa Health Services Communicable Diseases Program (925-313-6740). After hours, notify the Health Officer by calling the Sheriff’s Office dispatch (925-646-2441) and asking for the Health Officer. If the patient is hospitalized, providers must also immediately notify the hospital infection control practitioner. The Confidential Morbidity Report form is available for download on the CCHS website [www.cchealth.org](http://www.cchealth.org).

**Triage to Alternate Care Sites**
During the Alert phase of the pandemic existing standards of care will be followed. As the pandemic progresses, existing services and resources will be stretched. (See Sect. 5 Health Care Facility Planning for a description of Surge Capacity and Alternate Care Sites.)

During the pandemic phase and if the pandemic is a category four or five, the Health Officer may activate alternate care sites. An alternate care site as defined in Contra Costa County is a specialized County-operated emergency shelter where, under certain defined emergency conditions, sick or injured persons may be provided temporary shelter and limited medical care for one to several days until discharged from care or until more appropriate care becomes available.

CCHS will develop standardized criteria for triaging patients and resources during this alert period of the pandemic and disseminate information via physician notices and other venues. (See Sect. 9 Risk Communication and Public Education)

CCHS will develop and communicate standardized clinical criteria for triage of patients to care in the inpatient acute-care hospital setting vs. the alternate care site vs. home care. This Plan describes some information for the management of patients with novel or pandemic influenza infection at home. (See appendix for Pandemic Flu Home Care Guidelines).

**Nursing advice and triage by telephone**
During the pandemic, healthcare providers are likely to be overwhelmed with patient care duties and may be unable to handle the volume of calls they receive for influenza-like illness (ILI). CCHS will activate the Health Emergency Information Line (HEIL) (888) 959-9911 and/or the Health Emergency Call Center to provide telephone triage and nursing advice to the general public.
**Home Care Guidelines and Supportive Care**

In the event the pandemic overwhelms resources of hospitals and alternate care sites, patients may need to be cared for at home. The following are some guidelines for homecare: (See also Sect. 6 Infection Prevention and Control guidelines at home and Appendix XXX Red Cross Home Care brochure)

**Fever control**  
Fever is defined as a temperature of 38°C (100.4°F) measured orally or rectally.

It is not strictly necessary to treat fever because fever is not inherently harmful. However, most patients are more comfortable if their fever is controlled during waking hours, and control of fever may help to prevent dehydration as fever increases insensible water losses. Fever control may be particularly important for children with a history of febrile convulsions. Fever can usually be safely controlled with acetaminophen and/or ibuprofen, in both children and adults. Aspirin should not be used in children <18 years of age because of a known association with Reye’s syndrome.

Influenza patients managed at home should be instructed in the proper use of antipyretics. In order to avoid an overdose, patients taking an antipyretic should be advised to avoid concurrently using over-the-counter preparations containing the same medication.

Fever should prompt a medical evaluation for infants under 2 months of age and for patients who are severely immunocompromised. In addition, fever reappearing after a prolonged afebrile period may herald the appearance of a secondary bacterial infection and should prompt a medical evaluation.

**Maintaining Hydration**  
Insensible fluid loss caused by fever and tachypnea, coupled with malaise and poor appetite, place patients with influenza at significant risk for dehydration. In addition, some patients – especially young children - suffer fluid loss from vomiting. Patients managed at home should be advised to rest in bed and drink plenty of fluids. Caregivers concerned that an influenza patient is at risk for dehydration because of decreased oral intake should actively encourage fluids by mouth provided the patient is able to drink.

Infants and young children (<5 years of age) with signs of dehydration should be initially managed with commercial rehydration solutions, in addition to breast milk or infant formula as appropriate. A recipe for cereal-based oral rehydration solution (CBORS) is provided as an alternative to commercial rehydration solutions for this age group, but it should ONLY be used if the commercial products are not available because of the potential for hazardous mixing errors.

A simple recipe for rehydration solution suitable for use in older children and adults consists of 4 cups of clean water, 2 tablespoons of sugar, and ½ teaspoon
of salt. The solution should not be boiled as this will concentrate the solutes. In situations where water must be boiled before use (e.g., if a “Boil Water” order has been issued), the water should first be boiled and the sugar and salt added after the water has cooled. Patients should not consume alcoholic beverages while ill with influenza, as this will increase the risk of dehydration, in addition to compromising hepatic and CNS function.

Caregivers should monitor influenza patients for signs of dehydration, which may include dry mouth, dry or sunken eyes, and decreased urine output. Severely dehydrated patients may have loose or doughy skin, a rapid heart rate, and changes in mental status. If a patient ill with influenza is unable to take fluids by mouth, or is showing signs of dehydration, a clinical assessment is warranted. This is particularly critical for the very young (infants), the elderly, and patients with underlying chronic disease, especially cardiac, renal or metabolic diseases such as diabetes.

**Airway support**

The comfort of patients with influenza may sometimes be improved with nasal decongestants (e.g., pseudoephedrine), expectorants (e.g., guaifenesin), and cough suppressants (e.g., dextromethorphan). These agents do not hasten the resolution of disease, however.

Influenza patients experiencing bronchospasm, including those with asthma, will need to maximize the use of their controller (anti-inflammatory) medications and use bronchodilators as prescribed by their healthcare providers. Because the use of nebulized medications is thought to increase the risk of transmission of influenza, medications administered orally or by MDI are preferred. Healthcare providers should consider providing extra prescriptions or supplies of quick relief and controller medications, including systemic steroids as indicated, for use by patients with asthma in advance of the pandemic. Healthcare providers should also provide explicit instructions for monitoring these patients at home, tailored to the needs of each patient, including instructions regarding when to seek medical care urgently.

**Getting Help**

During the pandemic, influenza patients and their caregivers at home will need access to medical advice by telephone. It is anticipated that this resource may reduce the risk of serious morbidity and mortality at home while relieving the burden on clinics and hospitals of triaging and managing patients that can be safely treated at home.

Patients with chronic diseases (asthma, cardiovascular disease, severe neuromuscular disease, diabetes, renal failure, immunocompromising conditions, etc.) should be encouraged to maintain close contact with the healthcare providers who manage these diseases during the course of their illness with
influenza. Patients who are pregnant should be encouraged to contact their prenatal care provider as well.

In addition, individuals with influenza and their caregivers should be encouraged to seek medical advice in the following situations:

- fever in patients under 2 months of age, or in the immunocompromised
- fever uncontrolled by antipyretics
- fever persisting for more than 3 days, or reappearing after a prolonged period without fever (suggests secondary bacterial infection)
- signs of dehydration (dry mouth, dry eyes, decreased urine output, doughy or loose skin, rapid heart rate)
- wheezing or difficulty breathing
- shortness of breath
- signs of respiratory distress (e.g., grunting, nasal flaring, retractions of the chest wall)
- bloody sputum
- chest pain
- croupy cough (may suggest bacterial tracheitis)
- severe ear pain or severe muscle pain
- changes in mental status, irritability
- protracted vomiting

Healthcare providers unable to handle the volume of influenza-related calls during the pandemic may refer patients calling with influenza-like illness to CCHS’ Health Emergency Information Line (888) 959-9911.