

# SWINE ORIGIN INFLUENZA VIRUS

## TRANSMISSION

Abbreviations:  
Sx=Symptoms  
Exp=Exposure

### Source:

Humans mostly  
Respiratory tract secretions

### Transmission:

--Large droplets  
--Airborne: limited to a few feet  
--Direct contact: with nasal or throat secretion  
--Fomites: Article freshly soiled with nasal or throat secretion.

### Attack rate

HH= 25%, moderate

**Incubation Period**  
2-5 (1-7) days

**Respiratory Tract Infection 1 week**  
fever, cough, sore throat, body aches, headache, chills and fatigue.

### Communicability:

-1 day to End of Symptoms +1 day

### Complication:

- Viral or bacterial pneumonia  
- Aggravation of chronic pulmonary, cardiac, renal, hepatic, hematologic or metabolic disorder

### Exclusions:

--Longest of onset to end of S x + 1 day or 7 days,  
--Exposed : Watch for Sx , then exclude as above  
--If contact with high risk (Exp + 1 to +7)

Close contact =  
30 min within 6 feet of a symptomatic

### High risk of severe illness and complications:

- aged 6 months - 4 years
- chronic pulmonary (including asthma), cardiovascular (except hypertension), renal, hepatic, hematological or metabolic disorders (including diabetes)
- immunosuppressed (immunosuppression caused by meds or by HIV)
- any condition (e.g., cognitive dysfunction, spinal cord injuries, seizure disorders, or other neuromuscular disorders) that compromise respiratory function or handling of respiratory secretions or that increase aspiration risk
- long-term aspirin therapy
- residents of chronic-care facilities

## DIAGNOSIS

### Clinical criteria:

influenza-like illness =

-fever  $\geq 37.8^{\circ}\text{C}$  [ $100^{\circ}\text{F}$ ] & (cough or sore throat)

Or

acute respiratory illness = recent onset of at least 2 of :

- rhinorrhea or nasal congestion
- sore throat
- cough
- fever or feverishness

Or

Hospitalization for acute lower respiratory tract infection and no other cause for this infection

### Epidemiologic criteria:

Contact with a person with onset

-within 7 days of close contact with a confirmed case

-within 7 days of travel to an area with confirmed cases

-resides in a community with confirmed cases

Note: Since SOIV is wide-spread worldwide, the epi criteria are only used for classifying probable cases

### Laboratory Criteria for Diagnosis

--positive S-OIV identification by real-time RT-PCR

### Sample Source

- Throat washing
- Throat swab
- Nasopharyngeal swab preferred**
- Nasal washing
- Nasal swab
- Sputum: not enough cells

**Laboratory Testing not useful for clinical , therapeutic or preventive decisions  
ONLY FOR EPIDEMIOLOGIC PURPOSES  
Test results come too late to be of use for case or contact management**

### Collection, transportation

- Dacron swab
- Metal swab
- Inadequate: PCR inhibitor or virus inactivator: Ca-alginate and wooden shaft swab
- Transport on ice

**Nasopharyngeal swab:** Carefully insert a dry sterile Dacron swab through external nares to obtain access to posterior nasopharyngeal area. Vigorously rub the area and gently retrieve the swab. Break off the swab tip into a sterile vial containing 2.0 ml of M4RT viral transport medium. Screw the cap on tightly to avoid contamination and leakage.

**Serology:** Not useful for dx

**Suspect:** Any respiratory tract infection

**Confirmed:** Meets laboratory criteria OR Meets clinical case definition AND epidemiologically linked to a confirmed case.

**Probable:** Meets clinical case definition AND epidemiologically linked to a confirmed case BUT does not meet Laboratory criteria

## TREATMENT, PROPHYLAXIS

### Osetamivir Roche Pharmaceuticals (Tamiflu®—tablet )

- Tx dosing recommendations of osetamivir for children weighing ≤15 kg is 30 mg twice a day; for children weighing >15-23 kg, the dose is 45 mg twice a day; for children weighing >23-40 kg, the dose is 60 mg twice a day; for children >40 kg, the dose is 75 mg twice a day.
- Reduction in the dose of osetamivir is recommended for persons with creatinine clearance <30 mL/min.
- Chemoprophylaxis dosing recommendations of osetamivir for children weighing ≤15 kg is 30 mg once a day; for children weighing >15-23 kg, the dose is 45 mg once a day; for children weighing >23-40 kg, the dose is 60 mg once a day; and for children >40 kg, the dose is 75 mg once a day.

### Zanamivir GlaxoSmithKline (Relenza®—inhaled powder).

Through oral inhalation by using a plastic device included in the medication package. Patients will benefit from instruction and demonstration of correct use of the device.

Not recommended for those persons with underlying airway disease.

**Table 6. Recommended daily dosage of influenza antiviral medications for treatment and chemoprophylaxis—United States**

Antiviral agent		Age group (yrs)				
		1-6	7-9	10-12	13-64	≥65
Zanamivir <sup>a</sup>	Treatment, influenza A and B	N/A†	10 mg (two inhalations) twice daily	10 mg (two inhalations) twice daily	10 mg (two inhalations) twice daily	10 mg (two inhalations) twice daily
	Chemoprophylaxis, influenza A and B	<b>Ages 1-4</b> N/A†	<b>Ages 5-9</b> 10 mg (two inhalations) once daily	10 mg (two inhalations) once daily	10 mg (two inhalations) once daily	10 mg (two inhalations) once daily
Osetamivir	Treatment, influenza A and B	Dose varies by child's weight¶	Dose varies by child's weight¶	Dose varies by child's weight¶	75 mg twice daily	75 mg twice daily
	Chemoprophylaxis, influenza A and B	Dose varies by child's weight**	Dose varies by child's weight**	Dose varies by child's weight**	75 mg once daily	75 mg once daily

**NOTE:** Zanamivir is manufactured by GlaxoSmithKline (Relenza®—inhaled powder). Osetamivir is manufactured by Roche Pharmaceuticals (Tamiflu®—tablet). This information is based on data published by the [Food and Drug Administration \(FDA\)](#).

### Pregnancy

- No clinical studies regarding safety or efficacy of zanamivir or osetamivir for pregnant women.
- Because of the unknown effects, use only if potential benefit justifies potential risk to embryo or fetus.
- Osetamivir and zanamivir are both "Pregnancy Category C" medications

## PREVENTION OF TRANSMISSION: INFECTION CONTROL

### IC Strategy

- Routine infection control practices: use of appropriate barrier precautions during patient care, as recommended for Standard and Droplet Precautions
- Early detection of influenza cases in a facility
- Isolation of infectious patients in private rooms or cohort units
- Vaccination of patients and healthcare personnel
- Use of antivirals to treat severely ill persons and, if recommended, as prophylaxis
- Restricting visitors,
- Education of patients and staff
- Cohorting healthcare workers assigned to an outbreak unit.

### Restrict Hospitalization

**Hospital is NOT**  
-for quarantine  
-for diagnostics  
**Hospitals provide care for acutely ill**

### Standard precautions: Anyone may be infectious

- 1-Wash /Touch /Wash
- 2-If red, wet or dirty: Wash /Glove /Touch /Unglove /Wash
- 3-Up your face: Face shield or goggle, mask
- 4-Know what is clean, what is contaminated, keep them apart

### Transmission based precautions

**Droplet precautions:** wear mask when closer than 3 feet  
**Contact precautions:** wear gloves at all times; gowns prn  
**Airborne precautions:** 1-Negative pressure room; 2-At least 6 Air Exchanges /hour; 3-Wear N95 masks

**Modified Droplet = Personal respirator /N95 instead of surgical mask**

### Usually Modified Droplet\* & Contact Precautions

#### High risk of airborne transmission:

- Aerosol producing procedures:
- bronchoscopy **USE AIRBORNE PRECAUTIONS**
  - intubation **Personal Resp N95**
  - nebulization **Neg pressure room**
  - suction **≥ 12 air exchange**

### Prevent emission

#### Respiratory hygiene Cough etiquette

- Cover cough, sneeze
  - Use tissues, dispose safely
  - Wear mask
  - Spatial separation 3 ft
- Early triage to institute  
Respiratory hygiene

### No No's

- Touching eyes, nose or mouth with contaminated hands (gloved or ungloved).
- Making adjustments to the PPE during patient care or removal. Careful placement of PPE before patient contact will help avoid the need to and risk self-contamination during use.
- Touching contaminating environmental surfaces that are not directly related to patient care (e.g., door knobs, light switches)
- Touching pen, glasses and other personal items during patient care

### Patient Placement /Movement

Private room preferred  
Cohorting: at first only confirmed cases, later all URTI /LRTI  
HCW do not float  
Restrict movements; RHyg/CE during transport