

UCSF MEDICAL CENTER ADULT FLU CARD

Infectious Diseases Management Program
2016-2017 Influenza Season

INFLUENZA DIAGNOSTICS

APEX Name	Assay Type	Viruses	Sensitivity	Specificity	Sample	Turn around time
POCT Influenza Virus	Antigen test	Influenza	50-70%	90-95%	Nasal swab	Rapid (restricted to ED, urgent care, some clinics)
Rapid influenza A/B/RSV PCR	PCR	Influenza, RSV	>95%	>95%	NP swab only	2-4 h
Respiratory Viral Panel PCR	PCR	Influenza, RSV, PIV, hMPV, rhinovirus, adenovirus	>95%	>95%	NP swab or lower tract sample (BAL, mini-BAL, ET aspirate)	MWF

Key points about diagnostics:

- (1) **A negative POCT test does not exclude influenza given low sensitivity** (but can rule it in)
- (2) How to order the PCR tests on inpatients:
 - a. Type “influenza” or “rapid” to see the order for “Respiratory Viral testing – with Isolation.” This gives you the option to order one or both PCR tests.
- (3) Which test should I order for inpatients?
 - a. **Always order the rapid influenza A/B/RSV PCR given rapid turnaround time.**
 - b. Consider respiratory viral panel PCR in immunocompromised or critically ill patients.
 - c. In critically ill patients, consider sending upper and lower respiratory tract samples to improve sensitivity for diagnosis of respiratory viral infection.

Which patients should be tested during influenza season?

- (1) *Inpatients*: All inpatients with an influenza-like illness or pneumonia. Note that not all patients with influenza will have fever (e.g., elderly, immunocompromised).
- (2) *Outpatients*: Patients with high-risk conditions who will be considered for antiviral therapy (see section on Antivirals).

INFECTION CONTROL FOR HOSPITALIZED PATIENTS

- (1) Droplet precautions should be ordered for all patients in whom respiratory viral testing is ordered.
- (2) When can you stop droplet precautions in a patient with documented influenza?
 - a. BMT/heme malignancy patients: At least 7 days from symptom onset AND symptoms resolve AND retest is negative
 - b. All other patients: At least 7 days from symptom-onset AND until symptoms resolve

ANTIVIRALS

Which patients with influenza should be treated with antivirals?

(1) Inpatients:

- a. **All inpatients with influenza irrespective of time of symptom onset** as treatment is associated with lower mortality in inpatients even if >48h after symptom onset.
- b. Treat as early as possible and do not delay therapy while awaiting lab confirmation.

(2) Outpatients:

- a. **All patients at high risk of influenza complications.** Treat irrespective of time of symptom onset, as early as possible, and do not delay therapy while awaiting lab confirmation.
- b. High risk patients are:
 - i. ≥ 65 years
 - ii. Have chronic pulmonary, cardiovascular, renal, hepatic, hematological, neuro/neurodevelopmental, and metabolic disorders (including diabetes)
 - iii. Immunocompromised
 - iv. Pregnant or postpartum (within 2 weeks after delivery)
 - v. American Indians/Alaska Natives
 - vi. Morbidly obese (BMI ≥ 40)
 - vii. Residents of chronic care facilities
- c. In healthy outpatients treatment can be considered if within 48h of symptom onset. Treatment can shorten symptom duration by ~ 1 day and may decrease complications.

Drug options (Neuraminidase inhibitors)

(1) Only neuraminidase inhibitors are currently recommended for treatment of influenza given widespread resistance of circulating viruses to amantadine and rimantadine.

(2) Drug Options:

- a. **Oseltamivir:** Drug of choice for most patients. Oral dosing only: see table below. Adverse effects: nausea/vomiting, rare neuropsychiatric effects.
- b. **Zanamavir:** Dose is 10 mg INH BID. Cannot use in intubated patients or those with underlying respiratory disease (asthma/COPD) as it can cause cough, bronchospasm.
- c. **Peramivir:** IV option. Requires ID approval. Consider use in hospitalized patients with influenza in whom there is a concern for GI absorption that would limit the use of oral oseltamivir. Consider inhaled zanamivir as an alternative in stable floor patients.

Oseltamivir Dosing

Renal function	Oseltamivir Dose
CrCl ≥ 61 ml/min	75mg PO BID x 5 days
CrCl 31-60 ml/min	30mg PO BID x 5 days
CrCl 10-30ml/min	30mg PO daily x 5 days
ESRD on Hemodialysis (HD)	30mg PO post HD x 5 days
Continuous renal replacement therapy (CRRT)	75mg PO BID x 5 days

**For ICU patients, longer courses (e.g. 10 days) may be considered based on severity of illness and repeat RVP testing of lower respiratory tract samples. Please consult ID for assistance in these cases.