

LOSING OUR GRIPPE: FIGHTING FLU WITHOUT VACCINE

ALTHOUGH vaccination is the most effective way to protect the general public from influenza, other strategies also can help—particularly this year when our vaccine supply is half of what was expected. This *CD Summary* reviews guidelines for antiviral use, flu infection control and “respiratory etiquette.”* The following scenarios are intended to help you minimize the morbidity and mortality of influenza, given constraints of vaccine and medication supply.

SCENARIO 1

Influenza is crowding ERs, kids are home from school sick, and two of your colleagues are ill when an elderly patient with chronic obstructive pulmonary disease presents with fever and cough for 1 day. He did receive influenza vaccine this year, but you highly suspect influenza A. What should you do?

During peak flu season, many patients with typical symptoms (fever, cough, myalgia) will have influenza; in the spring or early fall flu is much less likely. In this situation, your high-risk patient should be *treated* empirically with an influenza antiviral agent for 5 days. Oral oseltamivir (Tamiflu®) and inhaled zanamivir (Relenza®), both neuraminidase inhibitors, are effective in decreasing the rate of influenza complications (including hospitalization)¹ and are less likely than amantadine and rimantadine to cause drug resistance. Inhaled zanamivir should not be used in this patient because it can cause bronchospasm.

All influenza antiviral agents are of most benefit when started promptly; the efficacy of oseltamivir rapidly dwindles with each 12-hour delay.² Don’t bother starting treatment more than 48 hours after onset unless hospitalization is required or life-threatening complications are anticipated.

* CDC’s attractive “Cover Your Cough” posters provide practical respiratory etiquette tips in your choice of languages. Get them at <http://www.cdc.gov/flu/protect/covercough.htm>.

This patient is already ill; how can others be protected? Hospitalized patients need to be cared for using *droplet* precautions³ (gown and gloves if soiling likely; wear mask if within 3 feet of patient; private room if possible).

In the clinic, effective infection control starts by encouraging respiratory etiquette in the waiting room.⁴

- Ask patients to volunteer acute respiratory symptoms at check-in.
- Have tissues, receptacles, and hand-hygiene (alcohol rubs work for influenza) available in waiting areas.
- Offer masks to patients with cough, and seat coughing patients at least 3 feet from others.
- Wallpaper your office with “Cover Your Cough” posters to encourage the practice of respiratory etiquette by your patients at all times.

Some clinics may be able to arrange “sick” and “well” waiting areas or to room patients quickly to minimize the time spent in close quarters. Consider modifying appointments so individuals being seen for high-risk chronic conditions are not seen at the same time as those with acute fever and cough. Always remember hand-hygiene before and after patient contact, and if your patient is coughing, think about wearing a mask yourself. These precautions may also help prevent the spread of other respiratory illnesses, such as SARS, should it rear its ugly head in Oregon.

SCENARIO 2

In December you learn of several cases of influenza A at the long-term-care facility (LTCF) of which you are the medical director. What can you do to contain this outbreak?

First, notify your local health department (all outbreaks are reportable, regardless of etiology); then, vaccinate any residents or staff missed in this year’s campaign. Vaccine distribution is expected to continue through January 2005. Don’t give up on your vaccination effort until the season is over!

Next, give antiviral *prophylaxis* promptly to all asymptomatic residents and staff to prevent influenza A infection; healthy staff should receive medication for two weeks after vaccination; but residents and any unvaccinated staff need it until 7 days after the outbreak is over. LTCF staff are high priority for vaccination and prophylaxis because, if ill with influenza, they could easily infect several residents. The recommended agents for *prophylaxis* are amantadine and rimantadine, a.k.a. the adamantanes. Both are active only against influenza A and can cause GI and CNS side effects; the latter occur more often with amantadine (5–10%) than with rimantadine (1–2%). To help preserve the supply, oseltamivir is reserved for prophylaxis when adamantane-resistant virus is suspected. Federal officials believe that plenty of adamantanes will be available commercially this year.

Third, treat suspected cases of influenza with a neuraminidase inhibitor (*vide supra*) and isolate them with droplet precautions. If several residents are ill, care in a cohort setting by a subset of staff may limit further spread.⁵

CD Summary readers know that antibiotics have no effect on influenza virus but that bacterial pneumonia is an important complication of influenza infection. Consider antibiotics if and only if you suspect bacterial superinfection, typically heralded by clinical deterioration several days into illness.

Finally, make sure your LTCF promotes respiratory etiquette, hand-hygiene, and common sense. Are tissues, trash cans, sinks (or hand gel dispensers) available? Are feverish, coughing employees at work? Is sick leave provided for ill employees? Those without sick leave may need to work even when ill (*not good!*).

SCENARIO 3

You care for individuals with severe immunosuppression (e.g., oncology patients on chemotherapy, transplant recipients, HIV-infected patients, etc.) and you staunchly promote annual influenza vac-



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nation despite your worry that your patients may not mount a protective response. How can you protect them once influenza is detected in the community?

If local supplies are adequate, then consider *prophylaxis* of high-risk individuals with amantadine or rimantadine for the duration of the influenza season (see <http://www.cdc.gov/flu/weekly/fluactivity.htm> and our website for weekly reports). Be sure to review the side-effect profiles and drug interactions before prescribing. *Primum non nocere*: do not let your outpatient clinic imperil your fragile patients; minimize the threat using the infection-control suggestions in scenario #1.

SCENARIO 4

At 4:30 pm on a Friday afternoon during flu season, you get a call from an otherwise healthy adult with acute onset of fever and cough 24 hours ago. The office closes in 15 minutes; should you prescribe an influenza antiviral by phone?

Unless there is a shortage, consider prompt treatment of otherwise healthy people with oseltamivir or zanamivir for 5 days to decrease the duration of symptoms (but not the already low rate of complications) in this population. The cost, \$70 for oseltamivir and \$48 for zanamivir (according to the Sanford Guide) is significant; will the patient start it soon enough to help? Seize this “teachable moment” and emphasize avoiding contact with high-risk persons, staying home from work or school until afebrile and following respiratory etiquette and hand-hygiene principles.

SUMMARY

Since we can predict neither the size nor the severity of the 04–05 flu season, we promote adoption of respiratory etiquette, clinic infection control, and reasonable use (and expectations) of influenza antivirals. This flu season is a good time to make them part of daily practice. For additional information on influenza antiviral guidelines and influenza testing, see <http://www.cdc.gov/flu/professionals/treatment/> and <http://www.cdc.gov/flu/about/qa/testing.htm>.

REFERENCES

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3. Infection control measures for preventing and controlling influenza transmission in healthcare facilities. CDC. (Accessed November 16, 2004 at <http://www.cdc.gov/flu/professionals/infectioncontrol/healthcarefacilities.htm>).
4. Respiratory hygiene/cough etiquette in healthcare settings. CDC. (Accessed November 16, 2004 at <http://www.cdc.gov/flu/professionals/infectioncontrol/resphgiene.htm>).
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Prophylaxis and treatment of influenza A in non-pregnant patients ¹

Groups	Drug	Dose	Duration
Limited Supply			
Treatment			
• High-risk persons, first 48 hours of illness • Any person with potentially life-threatening influenza	Oseltamivir or Zanamivir ³	75 mg p.o. b.i.d. ² 10 mg inhaled b.i.d.	5 days
Prophylaxis			
• Outbreaks in institutions caring for elderly or other high-risk groups • Exposed high-risk persons	Amantadine or Rimantadine	100 mg p.o. b.i.d. ^{4,5}	Duration of outbreak or 7 days after last exposure
Adequate Supply			
Treatment			
• Healthy adults, children >1 yr	Oseltamivir or Zanamivir ³	75 mg p.o. b.i.d. ² 10 mg inhaled b.i.d.	5 days
Prophylaxis			
• Unvaccinated high-risk persons • High-risk <2 weeks after vaccination • Immunosuppressed individuals • Unvaccinated healthcare workers	Amantadine or Rimantadine	100 mg p.o. b.i.d. ^{4,5}	Duration of influenza season ⁶

1. All influenza antivirals are pregnancy category C.
2. For patients with CrCl 10–30 ml/min 75 mg q.d. for treatment. Minimum age 1 year. For children: 2 mg/kg (up to 75 mg) b.i.d. See: <http://www.cdc.gov/flu/professionals/treatment/dosage.htm>.
3. Zanamivir minimum age 7 years; not recommended for those with underlying lung disease.
4. Amantadine 100 mg q.d. if over age 65 or CrCl<50ml/m. Children aged 1–9 years: 2.5 mg/kg (up to 75 mg) p.o. b.i.d.; children 10 years and older: 100 mg p.o. b.i.d.
5. Rimantadine 100 mg q.d. if over age 65, CrCl<10ml/min, or severe hepatic dysfunction. Children aged 1–9 years: 2.5 mg/kg (up to 75 mg) p.o. b.i.d.; children 10 years and older: 100 mg p.o. b.i.d.
6. Only for two weeks after vaccination in those expected to respond.