

## INFLUENZA: NEWS YOU CAN USE

SATURN, December 16 — This is shaping up as the worst influenza season in decades. An especially virulent form of the flu bug is sweeping the planet, causing record numbers of cases and high mortality, especially among young and previously healthy children. This year's vaccine formulation is a poor match to the dominant strains in circulation, meaning that even recently vaccinated people have very little protection against the flu this season. We've all but run out of vaccine anyway, so if you haven't gotten your shot already, you're S.O.L.\*

**I**N RECENT weeks, we have become increasingly envious of our journalistic brethren in the private press, who get to write this kind of stuff every day. What does it feel like to write stuff that is guaranteed to hook the reader? We thought we'd give it a try, and can now report that it feels...good. But how much of it is hokum, bunkum, and claptrap? Does anybody really know anything about what's going on with influenza? In this issue we'll try to pass along our spin on current events.

### SURVEILLANCE DATA

It's official. Flu season is now. With cases reported from counties holding over 50% of the state's population, we meet CDC's definition of having "widespread" flu activity. As we never tire of pointing out, and you presumably never tire of reading, influenza surveillance differs in several important respects from more typical programs. There is no mandate to report influenza diagnoses and lab tests in Oregon. Each flu season we offer free respiratory virus screening at the Oregon State Public Health Lab (OSPHL); the data from subtyping these isolates goes into the international data pool that is used to determine the composition of the next year's vaccine components. An understanding of which viral types are

\* Sadly, obviously late. And obviously this is fake.

in circulation also helps the clinician assess the appropriateness of anti-viral therapy in some settings.

The number of submissions and hence the number of isolates reflects not only the burden of disease but the motivation of patients, clinicians, and med techs. Until the late 1990s, virtually the only available data were from the OS-PHL, but these data are now supplemented by voluntary reporting from Providence-Portland, Kaiser Permanente, and Legacy Health System. How these changes influence influenza<sup>†</sup> statistics can be difficult to assess.

With that preamble, the number of isolates does genuinely appear to be up this year, and up earlier in the season. Through week 50 (week 11 of the 2003–04 respiratory disease season, ending 13 December), we had 124 reports of culture-confirmed influenza, all type A virus. This is up dramatically from the past three seasons, when we averaged only 4 isolates by this time (range, 1–6). The drama fades a bit when we consider a longer history. Indeed, 4 of the past 15 seasons had comparably early starts and comparable numbers of reports at this point. In 1993–94, for example, the OS-PHL alone had identified 140 isolates by this time. (Of the 124 isolates so far this season, only 44 came to the OSPHL.) So while numbers are up, we're not hanging out four standard deviations—or even two. Obviously we don't have any crystal ball that tells how long the flu season will last this year. Case tallies are increasing in some areas and declining in others, both in the U.S. and abroad. Some seasons start up quickly and then peter out. Some start early and go late.

### EVERY FLU SEASON IS A BAD FLU SEASON

That influenza can kill, alone or in combination with co-infections, is not news. An estimated 30–40,000 Americans die annually of influenza in a nor-

<sup>†</sup> Yes, these words do have the same Latin root.

mal year, and that includes a number of young children. Indeed, it is the appreciation of these risks to young children that has led to the recently expanded recommendations for vaccine use in routine pediatric practice. Some media reports notwithstanding, however, there is no evidence of abnormally high mortality rates in this year's epidemic—among young children or anyone else.

Nationally, 99.5% of isolates this season are type A. Of the isolates that have been serogrouped nationally, 25% are A/Panama (similar to the H3N2 component of the vaccine) and 75% are A/Fujian, a closely related antigenic variant. First identified in the Chinese province of Fujian, and not on the tropical island of Fuji<sup>‡</sup>—which is where they make all that film—this H3N2 variant has been well publicized for what it isn't—to wit, included in this year's vaccine mix. Studies are being conducted to assess the efficacy of the current vaccines against A/Fujian in the Northern Hemisphere. We assume it will be less than perfect and much better than nothing. In the absence of data, we have to bluff.

Pandemic flu is most likely to recur when there is an antigenic *shift*, which has not happened since the 1960s, or perhaps when there might be "accidental" importations from the animal world (e.g., the H5N1 avian flu outbreak in Hong Kong in 1997). So maybe next year. Or maybe not. In contrast, the constant antigenic *drift* of influenza viruses means that individual and herd immunity wax and wane every year, the result of natural exposure and immunization.

### VACCINE SUPPLY: THE SORROW AND THE PITY

Influenza vaccine is a proven method of reducing infection rates. Even when not 100% effective at preventing illness, vaccination sharply reduces the risk of death or severe disease. Most immunization campaigns focus on vaccination of

<sup>‡</sup> A.K.A. Honshu



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“high-risk” individuals, who now include young children, as well as people who live or work around high-risk individuals, but many healthy and non-superannuated persons have realized that an annual pinprick and maybe a minor ache for a few hours is a small price to pay to reduce their risk of a most unpleasant illness.

While vaccine demand for high-risk patients has climbed fairly steadily and predictably over the past decade, demand among “low-risk” individuals has proven harder to predict. Well, to predict accurately, anyway. Last year, as has been widely reported, tens of millions of flu doses were eaten<sup>†</sup> by vaccine manufacturers. That eats up profits. So manufacturers revised their estimates of demand, particularly in the more discretionary “low-risk” sector. And now this year everybody wants it. As every schoolchild can now tell you, decisions about vaccine product, both quality and quantity, must be made many months before the winter peak. The production cycle takes too much time for mid-course corrections or even adjustments.

So yes, it is true. As you have no doubt heard, vaccine supplies are low, and rapidly disappearing. As of 10 December, existing supplies of the traditional, noninfectious, vaccine have already reached Oregon’s end users: local health departments, private clinics, and for-profit community immunizers. Retail pharmacies in Oregon report only small amounts still on hand. We do not anticipate seeing any additional large quantities of vaccine this season, although we expect to receive some inactivated vac-

cine and live attenuated vaccine to be prioritized for local health department use. In Oregon, local health departments and Safenet (800/723-3638) will have the most up-to-date information about distribution and vaccination clinics.

The more expensive, live, attenuated, inhaled vaccine (FluMist<sup>TM</sup>) is still available in quantity. It is now getting a second look from people who earlier might have turned up their nose at it. Of note, this vaccine is only licensed for use by healthy people age 5 through 49 years, excluding those (e.g., most health care practitioners) who live or work around high-risk persons. Individuals who receive FluMist can apply for a \$25 rebate using a coupon at [www.flumist.com](http://www.flumist.com).

While, given the choice, we would rather see existing stocks of noninfectious vaccine go to high-risk populations (those 65 and older; anyone in a nursing home or chronic-care facility; those with chronic metabolic, pulmonary, or cardiovascular disease; children between 6–23 months of age, and yes, despite what you may have heard, pregnant women), there are currently no plans to impose any restrictions on market-driven vaccine distribution schedules. We do recommend that clinicians immunizing vaccine-naïve children, for whom a second dose is recommended 1 month following the first, *not* set aside that second dose at the expense of giving a first dose to anyone, low- or high-risk. It’s no contest: the deferred, marginal benefit for a potential no-show at a time when flu transmission might be waning vs. the immediate gratification of a patient in your office at a time when flu is raging.

Basic vaccine recommendations and schedules have not changed, and have been previously provided in this space (*CD Summary*, 26 August 2003) as well as on the OHS web site (<http://www.healthoregon.org/publichealth/acd/docs/influenza.cfm>). Antiviral medications are appropriate in some circumstances for treatment or prophylaxis of influenza, but space precludes a disquisition of this topic here. For information on use of antivirals, see <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5208a1.htm>.

#### **COVER YOUR COUGH**

The SARS epidemic served as a wake-up call about lax attitudes towards infection control with many respiratory illnesses. While SARS has not (yet) reappeared, educational campaigns have been developed to highlight simple messages for the public about basic risk-reduction strategies, i.e., handwashing and what is being repackaged as “Respiratory Etiquette.” Our experiences with influenza in recent years, pertussis among adults, and the 2003 outbreak of SARS are reminders that we need a strategy to prevent respiratory illness when vaccine is lacking. We ask that you re-emphasize to your patients basic principles of hygiene that might interrupt transmission of pathogens spread by respiratory droplets. We are in the process of ~~plagiarizing~~ adapting instructions in “Respiratory Etiquette” that have been prepared by the Minnesota Department of Health (figure). Check out our web site at <http://www.healthoregon.org/acd/docs/influenza.cfm> to download a poster and other stuff that might reduce the spread of illnesses among your patients and staff.

<sup>†</sup> That’s figuratively speaking, of course.