

# Weekly Influenza Update

March 5, 2009

Wisconsin:

Influenza activity appears to have peaked in Wisconsin, but only at a moderate level. In the last week, influenza B viruses have comprised about 30% of isolates. The prevalence of influenza-like illness [fever of 100oF or higher and either cough or sore throat] in Wisconsin's primary care patients is estimated to be 2.7%.

17.6% of last week's primary care patients had acute respiratory infections (ARI).

The prevalence of acute diarrheal illness (ADI) in Wisconsin's primary care patients is at 1.8%.

CLINICAL NOTES:

Prophylaxis

Despite the late date, continue to offer influenza vaccine to anyone interested. Full immunity is achieved within 2 weeks of vaccination.

Vaccination is targeted towards:

- all high risk individuals
- children from 6 months to 18 years
- adults 50 years and above
- pregnant women
- healthcare workers

Diagnosis

- influenza infections are at moderate levels at this time
- PPV of rapid influenza tests is moderately high, NPV is moderately high

Treatment

- Antivirals need to be started with 48 hours of symptom onset to be effective
- Antivirals started after 48 hours may be effective for hospitalized patients with confirmed influenza
- a limited number of viruses have been tested for neuraminidase inhibitor resistance this season

321 out of 325 A(H1) viruses were resistant to Oseltamivir (98.8%)

0/54 A(H3) and 0/125 B viruses have been resistant to oseltamivir.

All viruses tested have been sensitive to zanamivir

- a limited number of viruses have been tested for adamantane resistance this season

2/325 A(H1N1) viruses were resistant to adamantanes (0.6%)

54/54 A(H3N2) viruses were resistant to adamantanes (100%)

Adamantane antivirals are ineffective against influenza B viruses

Across the upper Midwest, 77% of influenza viruses to date have been A(H1N1), 6% A(H3N2) and 17% B. Therefore:

- Zanamivir alone will be effective in 100% of cases  
(cost per Rx = \$72.99)
- Oseltamivir plus Amantadine/Rimantadine will be effective in 99% of cases  
(cost per combined Rx = \$132.79 - \$148.18)
- Amantadine/Rimantadine alone will be effective in 76% of cases  
(cost per rimantadine Rx = \$28.19)  
(cost per Amantadine Rx = \$12.89)
- Oseltamivir alone will be effective in 24% of cases  
(cost per Rx = \$119.99)

Other

- RSV prevalence has peaked and is declining
- adenoviruses, rhinoviruses and parainfluenza viruses are circulating in Wisconsin
- Rotavirus isolations are at low levels

Across the U.S.:

As of February 21st, 11,635 positive surveillance cultures have been recorded in the United States. 24.6% of respiratory specimens during week 7 (February 15-21) were positive for influenza.

-78.1% of isolates have been type A

89.9% of all sub-typed A viruses have been H1N1

10.1% of A viruses have been H3N2

-21.9% of isolates have been type B

-7.4% of deaths during week 7 (February 15-21) were due to pneumonia or influenza

[below the epidemic threshold of 8.0%]

-17 pediatric influenza deaths have been reported this season - bacterial co-infections were noted in 10 of these cases (58.8%) with *Staphylococcus aureus* implicated in 8 cases.

Global News [from the WHO]: The Ministry of Health and Population of Egypt has reported a new confirmed human case of avian influenza in a two-year old male whose symptoms began on 25 February. He was hospitalized on 28 February and is currently in a critical condition.

Investigations into the source of infection indicate a history of close contact with dead and sick poultry prior to becoming ill.

Since 2003, there have been 409 laboratory-confirmed cases of Avian influenza (A-H5N1). The cases been confined to Laos, Viet Nam, Thailand, Indonesia, Cambodia, the People's Republic of China, Turkey, Iraq, Azerbaijan, Egypt, Djibouti Nigeria, Myanmar and Pakistan. There have been 256 associated deaths (case fatality rate= 62.6%). There is enhanced avian influenza surveillance in Wisconsin. Contact Tom Haupt at the Wisconsin Division of Public health (608-266-5326) prior to submitting specimens for fee-exempt testing for patients with influenza-like illness returning from Southeast Asia within 10 days.

Other Observations:

March 5 Phenology: Today's photoperiod is 11 hours and 26 minutes, and daylength is increasing by 2 minutes and 55 seconds per day. Over the next month, the rate of change in daylength is at the highest level.

Influenza Case Presentation

A 58 year old male with a history of asplenia and mild asthma presented to the ER one day after returning to Madison from a cruise. He had a previous respiratory tract infection three weeks earlier with a cough which got better. He reported significant worsening two days prior to the ER visit with the onset of fever, muscle aches, and a cough. He had been given azithromycin (due to asplenia) for travel and had started this medication with the onset of symptoms. He had received influenza vaccine in October and had previously received pneumovax. His cough was severe enough to produce chest and abdominal pain.

On arrival to the ED, he required supplemental oxygen and had tachycardia. He had a fever of 101 F. CXR was (-) and WBC was 8.8. He received broad spectrum antibiotic in the ER (due to asplenia). On admission to the hospital he was also started on oseltamivir and rimantadine for empiric treatment of influenza. By the following morning the influenza DFA test was (+) for influenza A and blood cultures had no growth. He felt much improved, was weaned off oxygen and was discharged to home.

Consideration of the possibility of influenza infection (during the period when influenza is known to be in circulation), and early initiation of antivirals (in this case a combination to cover for resistant strains) likely resulted in efficient use of medical resources and favorable patient outcomes.

The evolution of influenza resistance and treatment. Excerpt from a editorial by Weinstock and Zuccotti. JAMA, published online Mar 2,

2009; (doi:10.1001/jama.2009.324) "The understanding of influenza

biology and epidemiology has advanced markedly; however, the global dissemination of oseltamivir-resistant influenza came as a great surprise. Undoubtedly, new surprises await in the perpetual struggle with influenza as one thing is certain- the organism will continue to evolve. Anticipating the rapid and endless changes in influenza biology and dynamics will require faster diagnostics to molecularly characterize specimens, extensive surveillance among humans and animals, and more rapid and malleable systems for translating basic and epidemiological discoveries into clinically applicable interventions. For now, the best tools to mitigate influenza infection are tried-and-true-vaccination, social distancing, hand washing, and common sense."

A Tribute to Dr. Sam Katz:

We had a very nice opening at last week's Advisory Committee on Immunization Practices meeting when Dr. Rich Besser--the acting director of CDC--began to read the attached tribute to Dr. Katz. The entire audience rose to its feet and joined in a standing ovation for Sam. If you know Dr. Katz, you will enjoy this statement; if you don't know of him, it is a worthwhile read.

Every now and then I come across a column that is well-written and powerful...

THE DELICATE ART OF BROTHERLY LOVE By Garrison Keillor, Tribune Media Services Posted 03/03/2009 at 5:00 pm EST

My brother Philip died in Wisconsin on Friday while I was in Rome, and after I got my ticket changed to fly back for the memorial service, I went into a church off the Piazza Navona and lit candles for his aching family and stood in the piazza beside a fine fountain, with lots of splashing and nudity, the Fountain of the Four Rivers, which made me think of the Mississippi, where he and I used to skate in winter and once when the wind was whistling down the valley he opened his jacket and held the corners taut and the wind blew him away beyond the island and he didn't come back until after dark.

He died while skating. He fell backwards and hit his head and died 12 days later. A heroic thing for a man of 71, dying in action at sport, though I believe he would rather have been in Rome, looking at Bernini churches. He and I almost died together once, canoeing on Lake Superior. We paddled into a deep cave under one of the Apostle Islands, possibly Judas, and explored it, ducking our heads under the low ceiling, and emerged a half-minute before the wake of a distant ore boat came crashing into the cave, which would have busted our heads but good, no need for the EMTs.

He was an engineer, having grown up at a time when boys were still romantic about machinery. Our dad and uncles loved cars and knew how to fix them and also do basic plumbing and wiring and carpentry, so he grew up admiring competence. The incompetent stood and cursed the problem and kicked it and caused more problems. The engineer studied the problem, devised a solution, and when it failed he made intelligent revisions. I never heard my brother curse anything or anybody.

Of all things mechanical, he loved sailboats the most, planing into the wind with a sheet of canvas, a centerboard and a tiller, which he picked up from perusing the Horatio Hornblower novels. When he was a kid, he rigged one of dad's dropcloths to a toboggan and sailed it at tremendous speed down the ice of the Mississippi, a death-defying feat. He switched careers from mechanical to coastal engineering so as to get himself out on boats on Lake Superior and Lake Michigan, purportedly to study thermal runoff from nuclear plants and shore erosion, and he owned a swift sailboat named the Dora Powell after our grandmother.

My brother was her first grandchild and so he was well loved and extensively photographed, a curly-haired boy with dimples and a modest smile, taken against many backdrops since our family moved often in the decade after he was born (1937), renting here and there, squatting with relatives, moving on, which maybe stimulates a keen love of family in a kid, as you keep waving goodbye to your friends, and Philip practiced the delicate art of brotherly love. He always knew what you were doing and he kept his critical opinions to himself. He called me once to ask how I was doing and I knew without his saying so that he knew about some nonsense I was up to and wanted me to stop it and I did stop it without his ever mentioning it. That's how he worked, no motor, just angles.

His ties to family went back to his ancestor Elder John Crandall, who preached religious tolerance and peaceful coexistence with the Indians in colonial Rhode Island, and it included his hockey-playing granddaughters and fundamentalist cousins and his lawyer brother and his Chinese granddaughter who was skating with him when he fell.

When your brother dies, your childhood fades, there being one less person to remember it with, and you are left disinherited, unarmed, semi-literate, an exile. It's like losing your computer and there's no backup. (What it's like for the decedent, I can't imagine, though I try to be hopeful.) If I had died (say, by slipping on an emollient spill and whacking my head on a family heirloom anvil), I believe Philip, after decent mourning, would've gone about locating a replacement.

If your brother dies, improvise. Someone you run into who maybe doesn't fit the friendship profile but his voice is reedy like your brother's, the gait is similar, he takes his coffee black and his laugh is husky, he starts his sentences with "You know," and the first words out of his mouth are about boats. I didn't run into him in Rome but I'm sure he's out there someplace.

<http://www.chicagotribune.com/news/columnists/chi-oped0304keillormar04,0,1202979.column>

Note: John Philip Keillor Jr., a coastal engineer and founder of a homeless shelter in Madison, Wisconsin (Porchlight, Inc.), died Friday (2/27/09) after falling at a Madison skating rink 12 days earlier. Phil Keillor spent most of his career at the University of Wisconsin-Madison Sea Grant Institute, which specializes in the Great Lakes. He retired in 2003.

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## Dr. Samuel L. Katz

Today we recognize the many contributions made to the work of the Advisory Committee on Immunization Practices (ACIP) by someone in this room who likely holds the record for longest running involvement with committee activities.

We are honored today to show our appreciation to Dr. Samuel L. Katz, who has contributed enormously, in several capacities, to the work of the ACIP and CDC from 1982 right up to the present time.

Dr. Katz served as a voting member of the ACIP from 1982 through 1993, which included Chairmanship of the Committee from 1985 through 1993. This period was notable for remarkable progress in vaccination to prevent invasive *Haemophilus influenzae* type b, the leading cause of pediatric meningitis in the US at the time. Dr. Katz played a key role in leading the ACIP constructively and rapidly to assess the controversy on the strategy and effectiveness of the polysaccharide vaccine, as well as moving ahead with prompt recommendations for use of the newly licensed conjugate vaccine, eventually leading to a 99% decrease in this devastating disease. During his tenure as chair, Dr. Katz played a major role in evaluating the safety of the whole cell pertussis vaccine and set the stage for a transition to acellular pertussis vaccines. Also, during his tenure, Dr. Katz guided the ACIP through an extensive evaluation of the need for a second dose of MMR vaccine, which was recommended in 1989 following almost a decade of deliberations. Since 1998 Dr. Katz has represented the Infectious Diseases Society of America (IDSA) as liaison member to the ACIP. In this capacity, Dr. Katz has participated actively as a member of several ACIP Work Groups, where his years of experience in vaccine research and implementation of immunization programs have proved invaluable in development of options for policy recommendations.

After graduating *cum laude* from Harvard Medical School, Dr. Katz completed his medical internship at Beth Israel Hospital and his pediatric residency at Massachusetts General Hospital and Boston Children's Hospital, where he also served as a research fellow in virology and infectious diseases. He then became a staff member at Children's Hospital and worked with Nobel Laureate John F. Enders for 12 years; together they developed the attenuated measles virus vaccine now used worldwide.

Early in his career, Dr. Katz became fascinated with the measles virus and was instrumental in developing a vaccine for the disease using cell-culture techniques and egg inoculations. In fact, after fastidiously preparing safety-tested material for use in

humans, he first inoculated himself and then his colleagues in the laboratory. After a series of clinical trials proved the vaccine effective and safe, it was licensed in 1963; by 1968 the incidence of measles plummeted to low levels. Once the vaccine was proven to be effective domestically, Dr. Katz was eager to see its success taken globally, and he conducted studies that contributed to the use of measles vaccine internationally.

As well as chairing the ACIP, Dr. Katz previously chaired the Committee on Infectious Diseases of the American Academy of Pediatrics (Redbook Committee), the Vaccine Priorities Study of the Institute of Medicine and several WHO and NIH panels. He also chaired the committee that, in 2000, declared that measles was no longer endemic in the United States.

For 22 years Dr. Katz was chairman of the Department of Pediatrics at Duke University. In addition to mentoring students and residents for over 2 decades, Dr. Katz established an exchange program with Oxford University and provided training for an annual succession of residents from the American University of Beirut. Graduates of his program hold positions at FDA, CDC, NIH, university departments, state health departments, research institutes and in private practice. Among those influenced by Dr. Katz are two people he mentored who followed in his footsteps in later years as ACIP members and Chairs - including Dr. John Modlin and Dr. Jeff Davis.

Dr. Katz has shared numerous scientific activities with his wife of many years, Dr. Catherine Wilfert, also an infectious disease expert, who is currently the Senior Technical Advisor to the CEO of the Elizabeth Glaser Pediatric AIDS Foundation - and who preceded Dr. Katz as ACIP Chair during the 1980s. Along the way, Drs. Katz and Wilfert also raised a total of eight (8) sons and daughters.

All of us express our gratitude to Dr. Katz for his years of tireless dedication, enthusiasm for the work and his unfailing good humor. In his work with ACIP, he has been remarkable not only for his graciousness and inclusiveness, but also for his effective committee management abilities. Dr. Katz brings a unique mix of skills and attributes that include expertise in virology and vaccinology, modesty and team spirit, and an ability to translate basic scientific knowledge into sensible public health policy.

*Compiled by Jean C Smith, Claire Broome, Walt Orenstein, Dixie Snider, and Larry Pickering  
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