

INFLUENZA

Influenza season is upon us again, although not heralded by any media blitz. Last year the Novel H1N1 ("swine") flu turned out to not be as dangerous as some pandemic strains of the past. We average 36,000 deaths (range roughly 15,000-80,000) in the US annually from influenza and we had far fewer last year. This was due to the virus not creating as much of a "storm" in some patients' immune response (this is what causes many flu deaths) as well as the massive immunization effort. Each year the seasonal flu vaccine immunizes for 3 strains of influenza. Specialists try to predict which strains are likely to hit that year and include 3, hoping to cover the 1 or 2 strains that actually hit each community. These predictions and production actually start the winter before. That is why last year's Novel H1N1 strain had to be put into a separate vaccine - the seasonal was already through most of its production. Then, when authorities handed vaccine manufacturers the strain and said "make a vaccine," that is why it was developed so quickly. There was no prediction phase of development and they had the luxury of only needing to work around a single virus strain, not 3. No other steps were skipped, no short-cuts were taken. It was made by the same process. It was, however, slower to incubate in eggs (that is how they propagate the virus) which made keeping a steady supply of that vaccine very difficult. This year's seasonal influenza vaccine also protects against 3 strains: Novel H1N1 and 2 others.

H1N1 isn't new. "Novel H1N1" ("swine flu") from 2009 was new (a novel strain). H1N1 is a family of flu strains in the Influenza A group. We had an H1N1 strain the year before, too. But it didn't get talked about in the media. There's also the Influenza B group. Each strain has a name that's a combination of 4 letters and numbers. Each year the vaccine usually contains either 1 A and 2 B or 2 A and 1 B strains. As virus strains circulate in humans and animals (especially in crowded conditions), they trade bits of genetic material. The hosts with the worst, dirtiest, most crowded living conditions are chickens and pigs on farms in poverty-stricken, rural areas. Hence bird flu from China and swine flu from Mexico.

The symptoms of influenza are almost identical year after year. Most people have the onset of significant fever (Temp 101-106 F), sore throat, headache, clear nasal drip, cough (usually wet) and body aches all within the 1st 24 hours. Some people have a vomit or 2, but it is not usually a prominent feature. (The slang term "flu" often is incorrectly used to describe stomach viruses.) It is very contagious and 25-50% (depends on the strain) of unimmunized people will catch it if exposed to respiratory secretions. The fever will last 3-6 days (most other viruses top-out at 4 days of fever) and contagiousness starts decreasing after the fever has been gone for 24 hours. Most children and adults come through the illness without complication. Some have complications from bacteria that take advantage of the situation (causing pneumonia, ear infection or sinusitis) and a few have complications from the virus itself setting off an exaggerated inflammatory "storm" in their bodies that can cause failure of their lungs, liver, kidneys and other body systems. (The 1918 pandemic (meaning: world-wide) Novel strain did just that in a high percentage of infected people and that's why it was so deadly. The fact that it broke out during a world war when large groups of soldiers were moving from country to country and also living together in large numbers in cramped quarters was how it spread much faster than prior strains.)

Diagnosis of influenza has been based on symptom history and exam for centuries. A blood test for antibodies has been available for a couple of decades but by the time you got the result back the illness was often over. Nasal swab rapid tests are now available BUT while the positives are accurate, the negatives are only 80% accurate in a typical year (so if test result is negative there's a 20% chance you still do have flu). Last year the same nasal swab tests varied from 20-70% accuracy because they were made to detect common influenza strains. Novel H1N1 was novel, new, genetically different from typical strains and so not as easily detected by the test kits already available. Diagnosis wasn't difficult, though, because last year so many millions of people all had the same symptoms in such a concentrated period from late September through mid-November and the surveillance testing done by state health departments throughout the US was finding only

1 influenza strain in all their surveillance samples - Novel H1N1. The CDC had advised doctors to not use the swab last year for that reason, unless a positive result would help to delineate that diagnosis from another in a confounding case, but public assumptions and pressure on doctors lead to many swab tests being done.

Treatment of influenza has always been to treat the symptoms and monitor for signs of worsening that may mean a complication. Fever is not a complication - it's part of your immune system's response to the invader. Some of the highest fevers we see each year are from influenza. (Our practice record is 106.7 - you know who you are! :) How a person looks (coherent in conversation/interactions, able to get themselves to bathroom, sit themselves up to drink/eat, non-labored breathing, rosy color) is the most important indicator of how they are doing. Any variation from the above, any symptom that seems out of the ordinary for a virus or any sudden escalation of symptoms after the first 24 hours should prompt an immediate call to the doctor or trip to the hospital if afterhours.

The availability of antiviral medicines has led to much misunderstanding. Antiviral drugs do not kill the virus the way most antibiotics kill bacteria. Antiviral drugs only slow down the replication (duplication) of the virus in your body's cells. You remain infected and contagious. The benefit is best seen if the med is begun in the first 48 hours (ideally the first 24 hours) of symptoms. The benefit is to usually dampen the severity and shorten the duration of symptoms. Results vary from person to person but usually shorten the fever by 1-3 days (so fever ending by 3rd-5th day) and thereby can shorten the contagious period a bit and decrease chances of asthma flare in asthmatics, out-of-control-blood-sugars in diabetics, etc. Shortening the length of symptoms can also decrease the chance of secondary bacterial infections in people that are prone to these. But when these secondary bacterial infections occur, they don't improve with antiviral drugs - they need to be treated with antibiotics. The rare overwhelming inflammatory storm complication usually occurs early and fast, and often continues despite an antiviral med having been started. Virus genes can mutate and develop resistance to antiviral drugs just like bacteria can to antibiotics. This was found to happen in early summer last year with Novel H1N1. That fact combined with the fact that the virus was showing itself to not have a high death rate prompted the CDC to advise doctors to NOT treat otherwise healthy Novel H1N1 flu patients with antiviral drugs, but to just target treatment to people with other risk factors for complications. Medication manufacturers market these drugs to the public to be used liberally and by everyone without giving all the facts. Public misinformation and pressure on doctors lead to many prescriptions being written last year against guidelines.

This is a new flu season and perhaps another strain. We'll await CDC guidance on use of antiviral drugs and other management issues for this strain as they arise. CDC.gov is a great resource for everyone.

Don't be afraid of the vaccine. To be blunt, the risk of death from not getting the vaccine is far greater than the risk of death from getting the vaccine. The vast majority of people who do get influenza get through it with just lost time from school or work, but some have complications (which can't always be prevented by antiviral drugs.) The best prevention measures are vaccination, quarantine of ill persons and never touch your hands to your face or eat without washing your hands first.

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