

Should i get the H1N1 Vaccine?



2 comments and 10 questions..
12 slides

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Getting the vaccine is a choice.

- Sometimes we want people to tell us what to do and other times we want all the information before we decide... but I think most of us balk at a missive from “above”.
- It’s hard to argue against vaccines at a population level (if we give it to everybody the clinics and E.R.’s will be much less busy, less missed work, less people getting sick or even dying) but things get trickier at the individual level.
- This presentation takes you through some of the issues so you can decide for yourself.

Values and Change

- When making a decision we usually combine the information with our values.
 - Faced with the same information, people will make different decisions. Your values are a factor in this decision. You may have different values than me or another- so feel free to disagree.
- **Things will change.** We have lots of experience with vaccines but the H1N1 vaccine is new and so this is a story we will have to follow. H1N1 may become more or less prevalent. Side-effects may become more or less of a factor. This “changing game” will also effect how you feel about your decisions.

Question #1: How likely is it that I will get sick from H1N1 this year?

- Lets start with the usual rates of flu. Typically your chances are about 9-12%, or about 9-12 of 100 people. This attack rate can go up to 42% if you have young kids.
- H1N1 appears to have higher attack rates. The data last week from the US (they typically are a little ahead of us) show that they already at the highest rates in 5 years and it's still early.¹
- So chances are still less than a coin toss that you'll get H1N1 influenza but it is on the rise, especially when you have kids.

¹ <http://www.cdc.gov/h1n1flu/update.htm>

Q2: How sick will I get?

Most of us get a cold seasonally. Definitely unpleasant but it is something we can cope with. Influenza is definitely more than the common cold as we can see from the chart below.

Symptoms	Cold	Influenza
Fever	Rare	Usual; high fever (102 °F/39 °C - 104 °F, 40 °C), sudden onset, lasts 3 to 4 days
Headache	Rare	Usual; can be severe
Muscle aches and pains	Sometimes, generally mild	Usual; often severe
Tiredness and weakness	Sometimes, generally mild	Usual; severe, may last up to 2 to 3 weeks
Extreme tiredness	Unusual	Usual; early onset, can be severe
Runny, stuffy nose	Common	Common
Sneezing	Common	Sometimes
Sore throat	Common	Common
Chest discomfort, cough	Sometimes, mild to moderate	Common; can be moderate to severe. Cough may last for weeks.
Complications	Can lead to sinus congestion or infection, and ear aches.	Can lead to pneumonia and respiratory failure, and become life-threatening. Can worsen a chronic condition.

Source: Ministry of Health and Long-Term Care http://www.health.gov.on.ca/english/public/program/pubhealth/flu/flu_06/flucomp/factsheets/difference.html

As Far as H1N1 is concerned it is really a version of influenza and here are the symptoms (at least in patients that have come to the hospital).



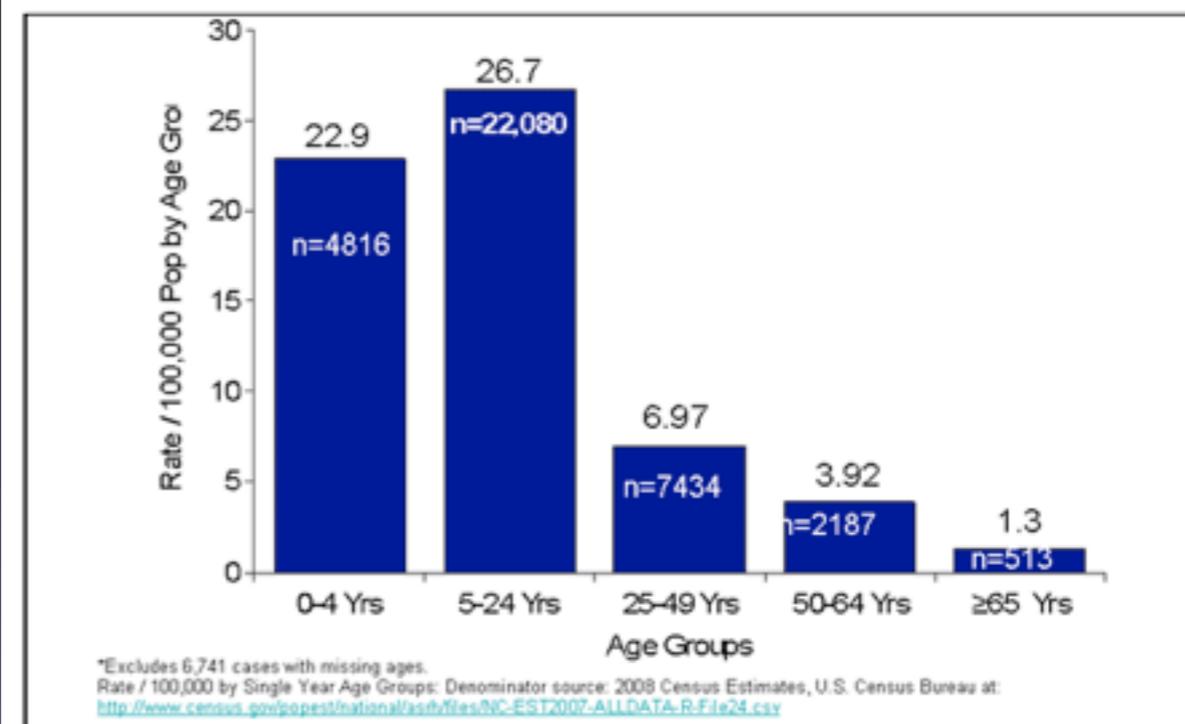
Table: Symptoms of hospitalized novel H1N1 patients

Symptom	Number (%)
Fever*	249 (93%)
Cough	223 (83%)
Shortness of breath	145 (54%)
Fatigue/Weakness	108 (40%)
Chills	99 (37%)
Myalgias	96 (36%)
Rhinorrhea	96 (36%)
Sore Throat	84 (31%)
Headache	83 (31%)
Vomiting	78 (29%)
Wheezing	64 (24%)
Diarrhea	64 (24%)

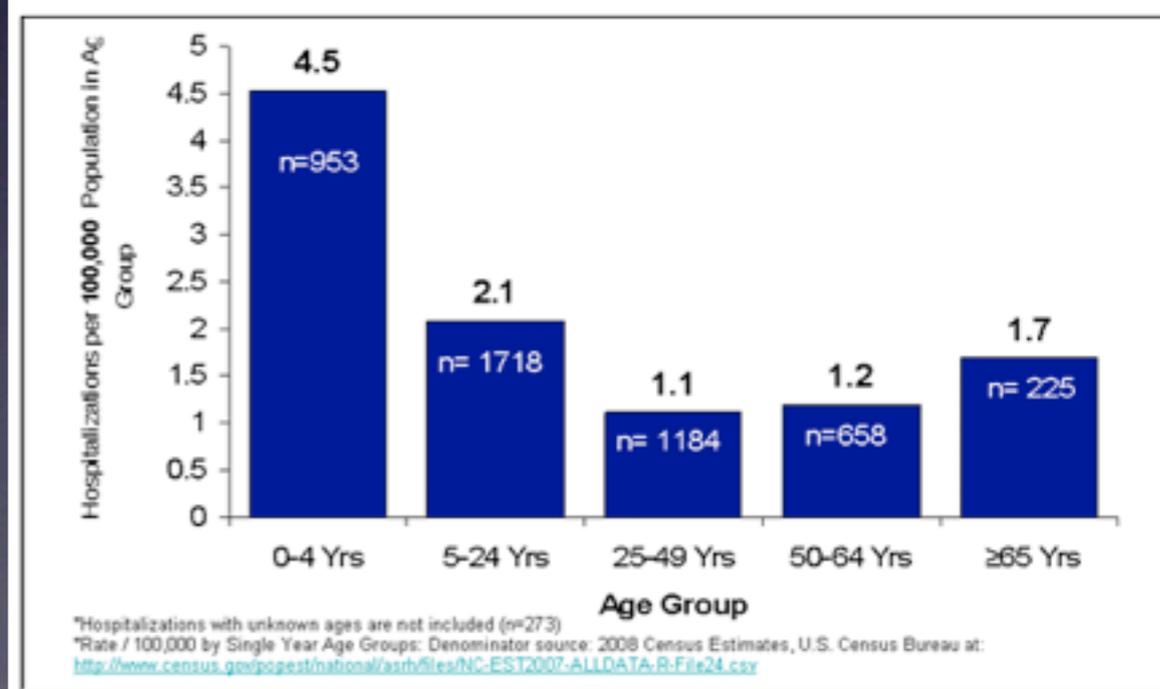
Q2: How sick will i get (2)?

- Bottom Line: For most people H1N1 flu is very unpleasant but they cope. Some people do get sick enough to be hospitalized.
- Reviewing US H1N1 data¹ about 11/1000 got sick enough from H1N1 to be hospitalized and 7/10,000 died from H1N1.
- About 70% of people who have been hospitalized with H1N1 flu have had one or more medical conditions that placed them in the “high risk” category for serious seasonal flu-related complications. These include pregnancy, diabetes, heart disease, asthma and kidney disease.
- 84 people have died from H1N1 (as of oct 20,2009) so far in Canada and this number will increase.

Graph A: Novel H1N1 Confirmed and Probable Case Rate in the United States, By Age Group



Graph B: Novel H1N1 U.S. Hospitalization Rate per 100,000 Population, By Age Group



¹From April 15 to July 24, 2009, the Center for Disease Control in the U.S. captured data on H1N1. There were 43,771 confirmed and probable cases of infection. Of these cases reported, 5,011 people were hospitalized and 302 people died. <http://www.cdc.gov/h1n1flu/surveillanceqa.htm>

Q3: Will the H1N1 vaccine actually protect me?

- Influenza vaccine is not perfect. The effectiveness depends on how the “dead virus” (that is injected into you to make you immune) matches with the virus that is circulating in the community and on your own immune system. Older people tend to have less of a response. Usually the effectiveness rates for seasonal flu vaccines is 70-90%.
- It is still early but it looks like the match with what is in the community is very accurate and so hopefully the H1N1 vaccine will be on the upper end of effectiveness.
- Typically we say that it takes 14 days for the vaccine to be effective. With H1N1 it looks like it works in about 10 days.

Q4: How do vaccines work?

Your body's immune system is very smart. If you get invaded by a "bad virus", your body makes a "photocopy" and sends it around so that if the virus shows up again it neutralizes it and you don't get sick. Instead of allowing you to get sick, vaccines give you a dead or even a very small live part of the virus so that your immune system is prepared to fight off the real virus. The H1N1 vaccine gives you a dead virus for your immune system to "photocopy".

Do vaccines weaken my immune system?

No. It makes it stronger. I often get asked if it isn't better to get the immunity naturally? Yes and no. If you get it "naturally" then you are immune but the problem is that you also get sick! So, for example, if you have had documented H1N1 then you don't need the vaccine (if H1N1 was suspected but not tested for (which is common) then you still need the shot). The vaccine is just an attempt to make it so you don't have to get sick in the first place.

What's an adjuvant?

The H1N1 vaccine in Canada has an adjuvant so it is important to discuss. An adjuvant is an additive that is sometimes put in vaccines to boost the effect. It "primes" the immune system so that a smaller amount of the vaccine has more effect. The advantage of this is that for many of my busy patients this means you only have to come in for one shot instead of two. The downside is that there isn't as much trial experience with pregnant moms and very young kids (hence the recommendation on slide 13). Shots like the tetanus and hepatitis have adjuvants.

Q5: What are the side-effects of the shot? or Didn't I get sick last time I got it...?

- **Perception vs reality.** About 20% of people will have symptoms after a flu shot- whether they get a fake/placebo or real flu shot. People often blame illness on the vaccine but the table below* shows they would have got sick anyways. Also the vaccines generally take 2 weeks to work- so people can get sick with flu if exposed in that time. Note the only major difference is in arm pain (which wasn't activity limiting).

Symptom	Placebo Injection	Flu Vaccine	Symptom	Placebo Injection	Flu Vaccine
Fever	6.1%	6.2%	Muscle Aches	5.7%	6.2%
Tiredness	19.4%	18.9%	Headaches	14.4%	10.8%
"Under the Weather"	17.5%	16.0%	Arm Soreness	24.1%	63.8%

- People who should not get the flu shot are those with allergies to egg (the vaccine is grown on eggs) or those with a previous true allergic reaction to the flu shot. This is rare.
- Woman who are pregnant (any trimester) or breast feeding are fine to get the shot and in fact are encouraged as it is protective for both mom and baby (see slide on dosing)

*Nichol KL, Lind A, Margolis KL, et al. "The effectiveness of vaccination against influenza in healthy, working adults". NEJM. 1995; 333:889-93.

Q5: What are the side-effects of the shot?

(2) or

What about these scary things i read on the internet about mercury

- About 1 in a million will have a severe reaction (anaphylaxis or possibly Guillain-Barré Syndrome (GBS))¹:

- Data is conflicting as to whether a causal relationship exists between modern influenza vaccines and GBS. If one exists, the risk is estimated to be very low (no more than 1 to 2 cases per million doses). Since the introduction of universal influenza immunization in Ontario, there has been no detectable increase in the number of new cases of GBS requiring hospitalization at the population level.²³ GBS typically happens to about 1-2 in 100,000 people. Just to be safe I would not give the vaccine to somebody where this condition was evolving..

- Concerns about Thimerosal:

- Thimerosal is a preservative for vaccines that if we didnt have in there we would have other safety concerns. Most influenza vaccines available in Canada contain minute amounts of thimerosal. Thimerosal has some mercury in it so it is rational to be concerned. Because of this there has been large reviews of the safety of thimerosal. No studies have demonstrated an association between thimerosal-containing vaccines and adverse neuro-developmental outcomes. H1N1 has an adjuvant which means we need about 1/10 of the usual amount of thimerosal. To keep things in perspective, there is less mercury in the shot than in a tuna sandwich.⁴⁵

¹Considering the Options - Getting the flu versus getting a vaccine or taking an antiviral PHAC,

²Juurlink DN, Stukel TA, Kwong J, et al. "Guillain-Barre Syndrome after influenza vaccination in adults: A population-based study". Arch Intern Med. 2006; 166:2217-21.

³Committee on Infectious Diseases. "Prevention of Influenza: Recommendations for Influenza Immunization of Children, 2007-2008". Pediatrics. 2008;121(4):1016-31.

⁴Andrews N, Miller E, Grant A, et al. "Thimerosal exposure in infants and developmental disorders: A retrospective cohort study in the United Kingdom does not support a causal association". Pediatrics. 2004; 114:584-91.

⁵Thompson WW, Price C, Goodson B, et al. "Early thimerosal exposure and neuropsychological outcomes at 7 to 10 years." NEJM. 2007; 357(13):1281-92.

Q7: Does my decision affect others?

- We've talked a lot about your chances of getting sick but what we haven't talked about is the effect of your health on others.
- It's interesting, and I am biased because I see many older and/or sick people, but my main reason to get the flu shot is to protect these people. If you get the shot you reduce the risk for people in your life who may struggle with dealing with H1N1 swine flu (eg., people with other diseases and asthma) and conversely, if you get the kids the shot, your chances of getting sick go down quite a bit.

Q8 Can you summarize the Risks + Benefits?

Time stamped: Oct 27, 2009. This will be out of date soon...

It will protect me from getting sick vs. it will make me sick

- Your risk in general of getting pretty sick with normal influenza is about 9-12/100. This can go up to 42/100 if you have kids. This attack rate will likely be higher with H1N1. Early data from the US is pointing this way.
- So far it looks like about 11/1000 with H1N1 get extremely sick and admitted to the hospital. You are more at risk if you have a respiratory condition like asthma. Having said that, most people feel unwell, often miss work, but cope fine.
- 84 people have died from H1N1 so far in Canada (as of Oct 20, 2009) and this number will increase.
- Having the vaccine will be very protective as there is a good match with circulating H1N1 thus far.

- Approximately 70% will have some arm pain. The pain doesn't limit activity and is gone typically in 2 days.
- A severe reaction or anaphylaxis is estimated to happen in less than 1/500,000 doses.¹ There is no risk or a minute (1 in a million) risk of Guillain-Barré Syndrome (GBS)²

Two other things to think about....

1. When you get the vaccine you protect those around you. Especially those at risk eg., Seniors, kids, people with underlying diseases, pregnant moms, etc..

2. The H1N1 vaccine is like a new version of the flu shot. We have lots of experience with flu shots and vaccines but we don't have years of experience with this exact version. As well, the adjuvant has been less tested on pregnant moms and children under 6 months. Early trials have not signaled any problems but, having said that, it is a new variation and we won't know the full picture until it has been used for a while. There is now enhanced reporting systems in North America to gather this data.

¹ Considering the Options - Getting the flu versus getting a vaccine or taking an antiviral PHAC, ² Juurlink DN, Stukel TA, Kwong J, et al. "Guillain-Barre Syndrome after influenza vaccination in adults: A population-based study". Arch Intern Med. 2006; 166:2217-21. ³ Committee on Infectious Diseases. "Prevention of Influenza: Recommendations for Influenza Immunization of Children, 2007-2008". Pediatrics. 2008;121(4):1016-31.

⁴ Andrews N, Miller E, Grant A, et al. "Thimerosal exposure in infants and developmental disorders: A retrospective cohort study in the United Kingdom does not support a causal association". Pediatrics. 2004; 114:584-91. ⁵ Thompson WW, Price C, Goodson B, et al. "Early thimerosal exposure and neuropsychological outcomes at 7 to 10 years." NEJM. 2007; 357(13):1281-92.

Q9: What are the recommendations for the H1N1?

Recommendations from the Canadian Public Health Agency

Q1. What are the recommended doses for the use of H1N1 flu vaccine?

ADJUVANTED:

- The recommended doses for H1N1 flu vaccine are as follows:
 - All Canadians 10 years of age and older should receive one dose of adjuvanted vaccine; and,
 - Children from six months to nine years of age should receive the adjuvanted vaccine in two half-doses, administered at least 21 days apart;

UNADJUVANTED:

- Pregnant women should receive one dose of the unadjuvanted vaccine. In cases where the unadjuvanted vaccine is unavailable and H1N1 flu rates are high or increasing, women more than 20 weeks pregnant should be offered one dose of the adjuvanted vaccine.

All data to date indicates that adjuvanted vaccine is as safe as unadjuvanted vaccine.

Q2. Who should not receive the vaccine?

- The following groups of people should NOT receive the H1N1 flu vaccine
 - People who have had a previous anaphylactic (severe allergic reaction) to any element of the vaccine, OR
 - People with a hypersensitivity to eggs (e.g. hives, swelling of mouth and/or throat, breathing difficulty); OR
 - People experiencing a high fever, OR
 - People who have previously experienced Guillan-Barré Syndrome within 8 weeks of receiving a seasonal flu vaccine.

The H1N1 flu vaccine is not approved for children under six months.

Q3. How long will it take after I receive the vaccine to have immunity against the virus?

After receiving the H1N1 flu vaccine, most people will start to develop immunity within 10 days with just one dose.

Q4. Can the H1N1 flu vaccine be administered at the same time as the seasonal flu shot and/or other vaccines?

The H1N1 flu vaccine can be administered along with seasonal influenza immunization and other vaccines.

Seasonal and H1N1 flu shots should be given in opposite arms. If an individual receives seasonal flu, H1N1 flu and pneumococcal vaccine in the same day, the seasonal flu shot and the pneumococcal vaccine should be given in one arm, and H1N1 flu vaccine in the other.

Q10: will you vaccinate your kids (and yourself)?

yes.



Thanks. Hope Helpful.