

Influenza vaccine for 2013: Who, what, why and when?

June 5 2013, by Ian Barr



There's still much confusion about the use of flu vaccines and their effectiveness. Credit: Lance McCord

Questions about who should be vaccinated against influenza are asked each year as the winter (and influenza) season approaches. Even though influenza vaccines have been used since the 1940s, there's still much confusion about their use and effectiveness.

In most [Western countries](#), vaccines are widely used by public health authorities, [workplaces](#) and individuals to reduce the risk of contracting the flu.

So what is the risk of being infected with influenza each year? This figure is variable and can be as low as one in 100 or as high as one in three.

It depends on many factors such as:

- if you have young children,
- if your children attend daycare or school,
- if you use [public transport](#),
- if you live in an institution such as a nursing home or boarding school,
- your [vaccination status](#), and
- the (constantly-changing) virus itself.

Try working out your odds (it's a difficult task, let me assure you). And assuming your risk of infection is relatively low, what will be the outcome if you do become infected? Again, the answer is: "it depends".

The pyramid of illness

Influenza is generally a mild disease. Many people, especially children, won't even know they've been infected with the flu. We call these people asymptomatic. Other healthy children and adults might be somewhat indisposed by a seasonal [influenza infection](#), missing a week's school or work.

But some other people and groups run a higher risk of a more serious illness following an influenza infection. These include very young children, the elderly, [pregnant women](#), [asthmatics](#) and, cancer and [organ transplantation](#) patients. A small proportion of these people will be hospitalised, and some will die.

In the most recent [2012-3 US influenza season](#), for instance, some

12,343 people were hospitalised with about half of these being elderly (65 years or older) along with 217 pregnant women. There were also 146 children (18 years old or younger) and thousands of adults and elderly who died from influenza or its complications. These findings are likely to be proportionally similar in Australia (that is, about one-tenth of these numbers).

So a reasonable case can be made for avoiding infection from influenza for a number of people. But short of becoming a hermit, living in a remote location and avoiding people or taking drugs (Tamiflu or Relenza) every day for months on end, vaccination is the most viable option currently available.

From the experts

Various groups have considered the question of who should get the [influenza vaccine](#). In April 2012, the World Health Organization's (WHO) [Strategic Advisory Group of Experts](#) (SAGE) on immunisation [recommended](#) that pregnant women were the most important risk group for seasonal influenza vaccination.

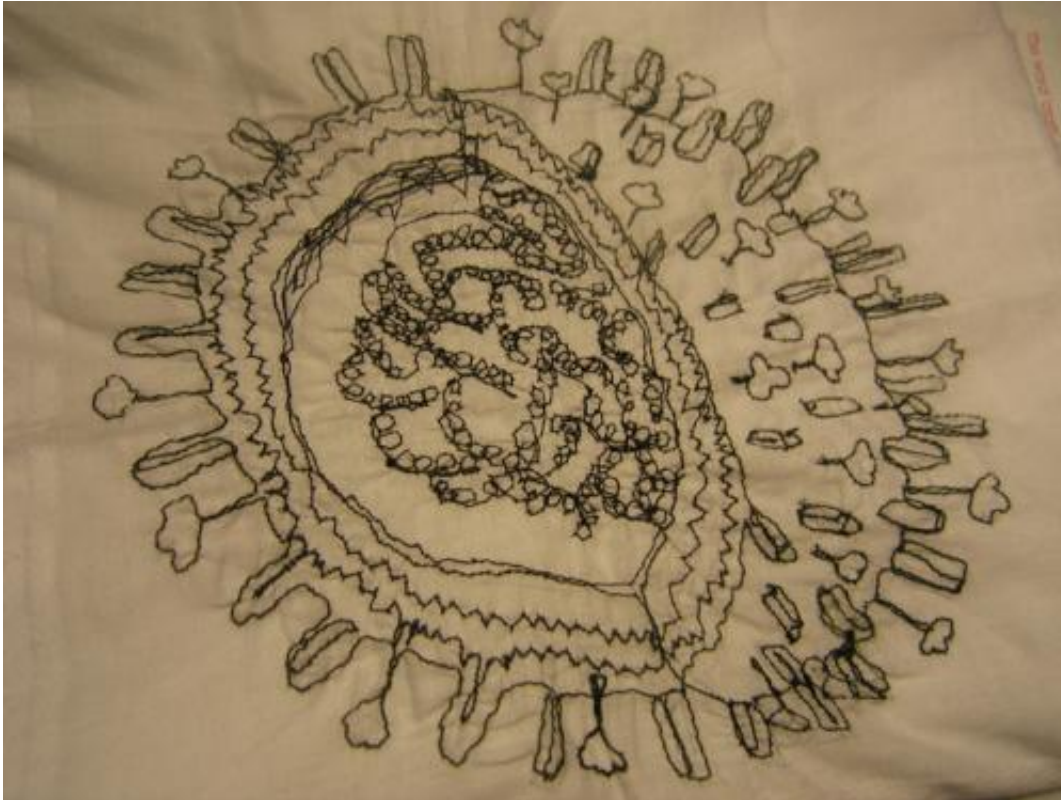
It also supported the recommendation – in no particular order of priority – for vaccination of:

- health-care workers,
- children six months to 59 months of age,
- the elderly, and
- those with high-risk conditions.

The [10th Edition of the Australian Immunisation Handbook \(2013\)](#) says:

Annual influenza vaccination is recommended for any person ≥ 6 months of age for whom it is desired to reduce the likelihood of becoming ill with

influenza.



The flu virus. Credit: ben dalton

It also strongly recommends vaccination for similar groups to SAGE with some additions such as Aboriginal and Torres Strait Islander people aged 15 years or older.

Other groups such as the [US-based Advisory Committee on Immunisation Practices](#) (ACIP) have, since 2010, continued to recommend annual influenza vaccine for all children aged six months or older.

Vaccine safety and effectiveness

Unfortunately, the performance of influenza vaccines in achieving robust protection is far from perfect, especially among the elderly. This age group has a deteriorating immune system due to ageing, which results in reduced responses to vaccinations, including the influenza vaccine.

For many years, scientists have tried to find the Holy Grail of influenza vaccines – a vaccine that is long lasting, works well in all age groups, fully protects against all circulating viruses, and provides protection from influenza viruses that don't normally circulate in people.

Not one of these aims has been achieved despite around 80 years of effort, experimentation and clinical trials. While some progress has been made, they are relatively minor and are yet to replace or substantially improve the current practice of annual vaccination.

The good news is that while the protection offered by current flu vaccines could be improved, their safety profile is generally very good, with very few serious adverse reactions. There have been a few exceptions to this, such as with the CSL's vaccine for children in 2010.

This brand is no longer approved or given to children under ten years of age and has been successfully replaced with non-CSL brands by other influenza vaccine manufacturers.

What to do?

The range of influenza vaccines available overseas currently is larger than Australia. In the United States, for example, they have the choice of inactivated virus vaccines, live attenuated (or crippled) virus vaccines and recombinant protein vaccines (made by modern molecular techniques).

In Australia, only the inactivated influenza vaccines, delivered by injection, are currently available. These vaccines are made by growing influenza viruses in embryonated hens eggs, which are then purified, inactivated and formulated into the finished vaccine.

That's a bit of background (there is a lot more available, for example, on the [US Centers for Disease Control website](#)), but the question for you is – do I get the influenza vaccine this winter?

It's not too late as the peak time for influenza in Australia is usually in August. But like many things to do with the [flu](#) we can't be sure of this. So if you do decide to get vaccinated, the sooner you do it, the better. And remember, it will take approximately two weeks before your body will reach its maximum level of protection following vaccination.

As for me, given that I work with influenza viruses continually, I have chosen to get the influenza vaccine each year for the past 13 years. But the chances of me running into an [influenza](#) virus is a daily possibility, a somewhat higher risk than most of you!

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