

This may not be the 'biggest flu season on record', but it is a big one – here are some possible reasons

18 August 2017, by Ian M. Mackay And Katherine Arden



When the H3N2 strain dominates, we see bigger flu seasons and cases affecting the elderly more than the young. Credit: shutterstock.com

This year, the number of laboratory-confirmed influenza (flu) virus infections began rising earlier than usual and hit [historic highs](#) in some Australian states. If you have been part of any gathering this winter, this is probably not news.

States in the [south-east](#) (central and southern Queensland, New South Wales, Victoria, Tasmania and South Australia) are more inflamed by flu than those in the north and west. For example, [Queensland](#) has seen more hospital admissions than in the last five years, mostly among an older population, while younger demographics more often test positive without needing hospitalisation.

Meanwhile, flu numbers in [New Zealand](#) and elsewhere in the [Pacific](#) have not matched the same elevated levels. But is Australia really experiencing the [biggest flu season on record](#) in 2017, or are we just testing more and using better tools?

This is hard to answer for certain because the

information we need is not usually reported until later and public databases only show the past five years. We can say for sure that 2017 is on track to be a historically big flu year.

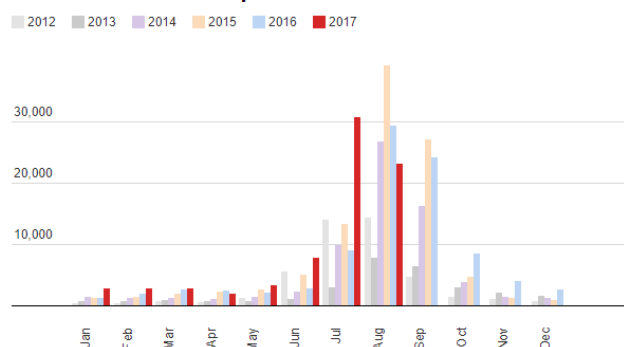
Read more: Have you noticed Australia's flu seasons seem to be getting worse? Here's why

Really, a big flu season

Flu can be a nasty illness. Sometimes it's deadly. Other times it can be mild. But even for cases that fall in the middle you may not be able to work for days, or you'll have to look after ill children home from school, or visit the very sick who have been hospitalised.

Years ago, detection of influenza viruses mostly relied on slow, finicky methods such as testing for virus in artificial cell cultures. But, in Australia today, most laboratories use either sensitive tools to detect viral gene sequences in samples from the patient's airway, or less sensitive but rapid dipstick methods, where a special strip is placed in a sample to detect viral proteins.

Number of flu cases per month across Australia



Source: Immunisation Coalition

we won't know for certain until many more viruses are analysed.

These [tools have been in use](#) since 2007 in the larger Australian laboratories, so it's unlikely we are just seeing more positives in 2017. While newer versions of these tests are being rolled out this year, they are unlikely to detect more cases. Equally, it's unlikely more people with suspected flu decided to change their behaviour in 2017 and get tested, compared to 2016, or the year before.

As in all years, there are many people in the community with flu who don't get tested. The proportion of people with flu who are tested likely remains roughly the same year to year.

State-wide flu reports provide reliable, laboratory-confirmed results. By looking at them, we can also be confident that "man flu" and severe common colds aren't contributing to this specific and large increase in flu. We're very likely seeing a truly huge flu season.

Why so bad this year?

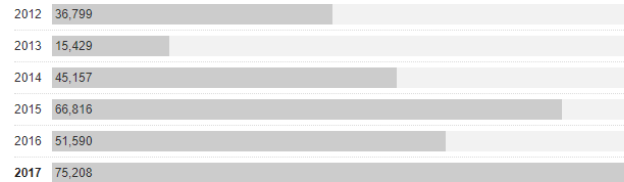
Flu, caused by infection with an influenza virus, is mostly a disease with an epidemic peak during July and August in non-tropical countries. Flu viruses are broadly grouped into two types: Influenza-A and Influenza-B. Influenza-B viruses have two main subtypes while the Influenza-A viruses are more variable.

The Influenza-As you get each year are usually A/H3N2 (the main player so far this season) or A/H1N1, which lingers on from its 2009 "swine flu" pandemic. Multiple [flu viruses](#) circulate each year and serial infections with different strains in the same person in a single season are possible.

H3N2 has played a big role in the past five flu seasons. When it clearly dominates we tend to have bigger flu seasons and see cases affecting the elderly more than the young.

H3N2 is a more [changeable beast](#) than the other flu viruses. New variants can even emerge within a season, possibly replacing older variants as the season progresses. This may be happening this winter, driving the bigger-than-normal season, but

Total Australian flu notifications between January and August, for the years 2012-2017



The total notifications for 2017 are recorded until August 16.
Source: Immunisation Coalition

Outside winter, flu viruses still spread among us. This year, in particular, we're being encouraged to get vaccinated even during the peak of flu season. Vaccines are a safe way to decrease the risk that we or loved ones will get a full-blown case of the flu.

Yet Australian flu [vaccination rates are low](#). Data are scant but vaccination rates have [increased in adults](#) and some at-risk groups, but remain lower than for childhood vaccines.

The flu vaccine

Each season new flu vaccines are designed based on [detailed characterisation](#) of the flu viruses circulating in the [previous season](#). But the viruses that end up dominating the next season may change in the meantime.

It is not clear whether that was a factor for this year's high numbers in Australia this year or precisely what the [vaccine](#) uptake has been in 2017. Much of this detail will not be reported until after the epidemic ends. Some testing suggests this year's vaccine is [well matched](#) to the circulating viruses.

The [flu vaccine](#) is not the most effective of vaccines, but it is [safe](#) and the only preventive

option we have for now. Of those vaccinated, 10-60% become immune to flu virus.

Future flu vaccines promise to account for the ever-changing nature of flu [virus](#), reducing the current need for yearly vaccination. Until they are available, though, it remains really important to book an appointment with your vaccine provider and get a quick, safe vaccination, because we are unarguably in the midst of the biggest [flu season](#) Australia has seen in years.

We have both vaccines and drugs to help us prevent and minimise disease and the extra load on hospitals caused by flu. The young, elderly, those with underlying disease and Indigenous Australian people are most at risk of the worst outcomes and this is reflected by government-funded vaccination for these groups.

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