Living as a senior with COV-19: how will it transform our lives and our society?

University Club
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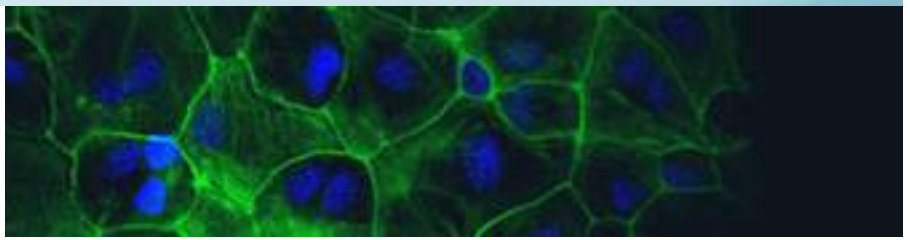
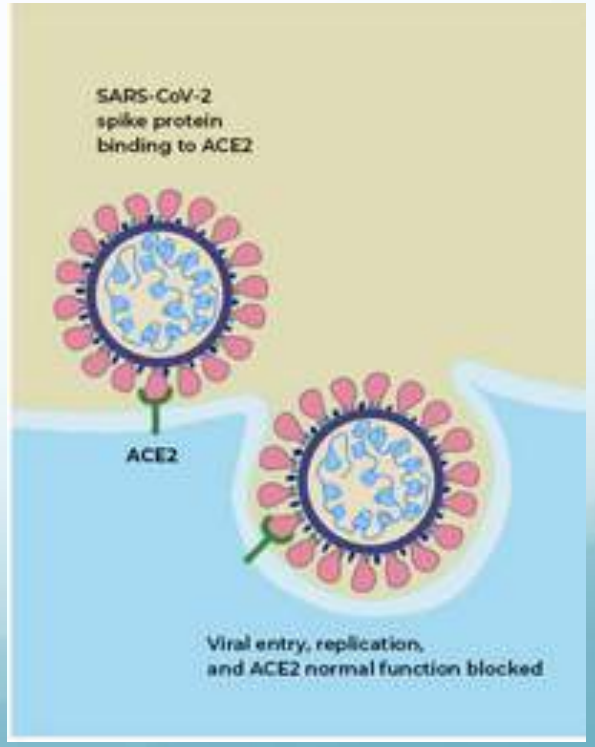


Why is COVID-19 so dangerous to human health?

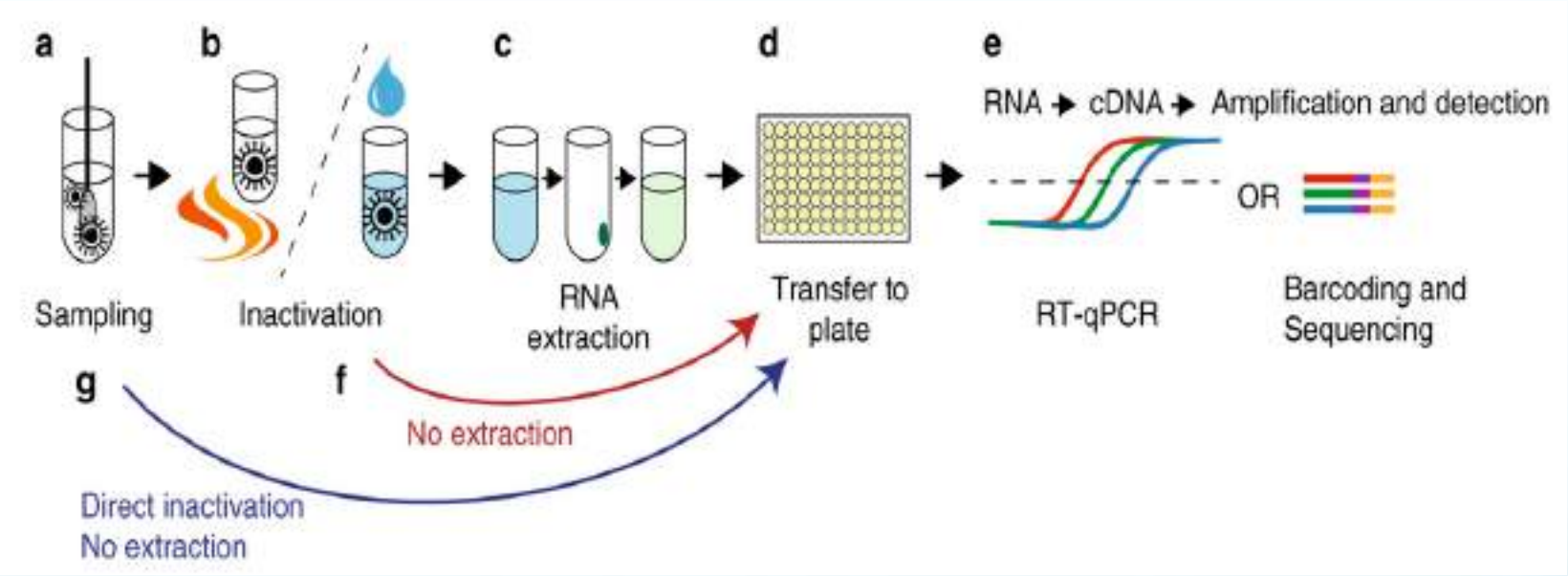
- It is just like a coronavirus that can cause the common cold
- It infects initially the nose, sinuses and upper throat
- But it is a new strain that can move to infect the lower respiratory tract and lungs with serious consequences
- It hitches a ride on a human enzyme ACE2
- A receptor on the surface of lung cells and other cells
- Inside the cell a viral protein acts as a ‘cork’ to stop the cell mounting a defense



How do we test for it?

Currently – a nasopharyngeal swab and do a test to detect the RNA of the virus (~24h-48h)

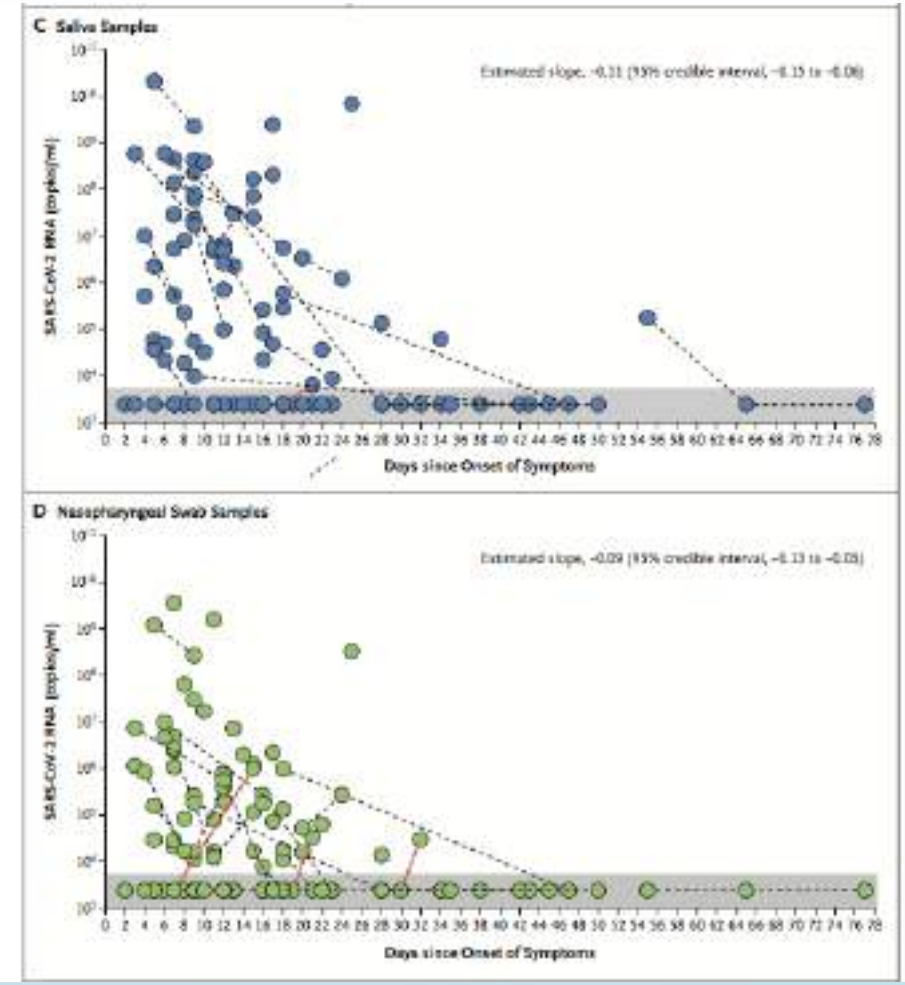
Positive or negative



Soon? a new saliva test –-invented by a Kiwi working in the US - Dr Anne Wylie

Saliva

Current nasopharyngeal

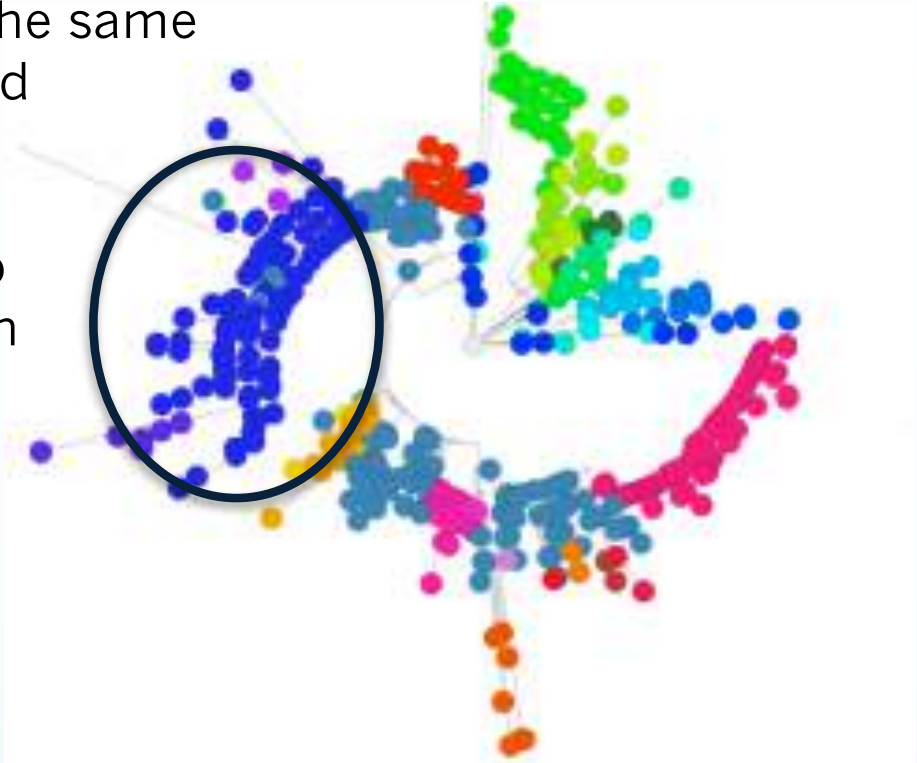


But not far away- a simple colour test we could do ourselves

Genomic testing has improved our safety
Institute of Environmental Science and Research (ESR)

Sequence 29,782 nucleotides
Barcodes the isolate to tell if different samples are the same ‘clade, or closely related

2nd outbreak clade
b.1.1.1 (UK) - only two cases of this clade seen before in NZ
In April



overview of all current NZ genomes coloured by genomic clade

Linking the subclusters of the second Auckland outbreak together

ESR sequences the isolates

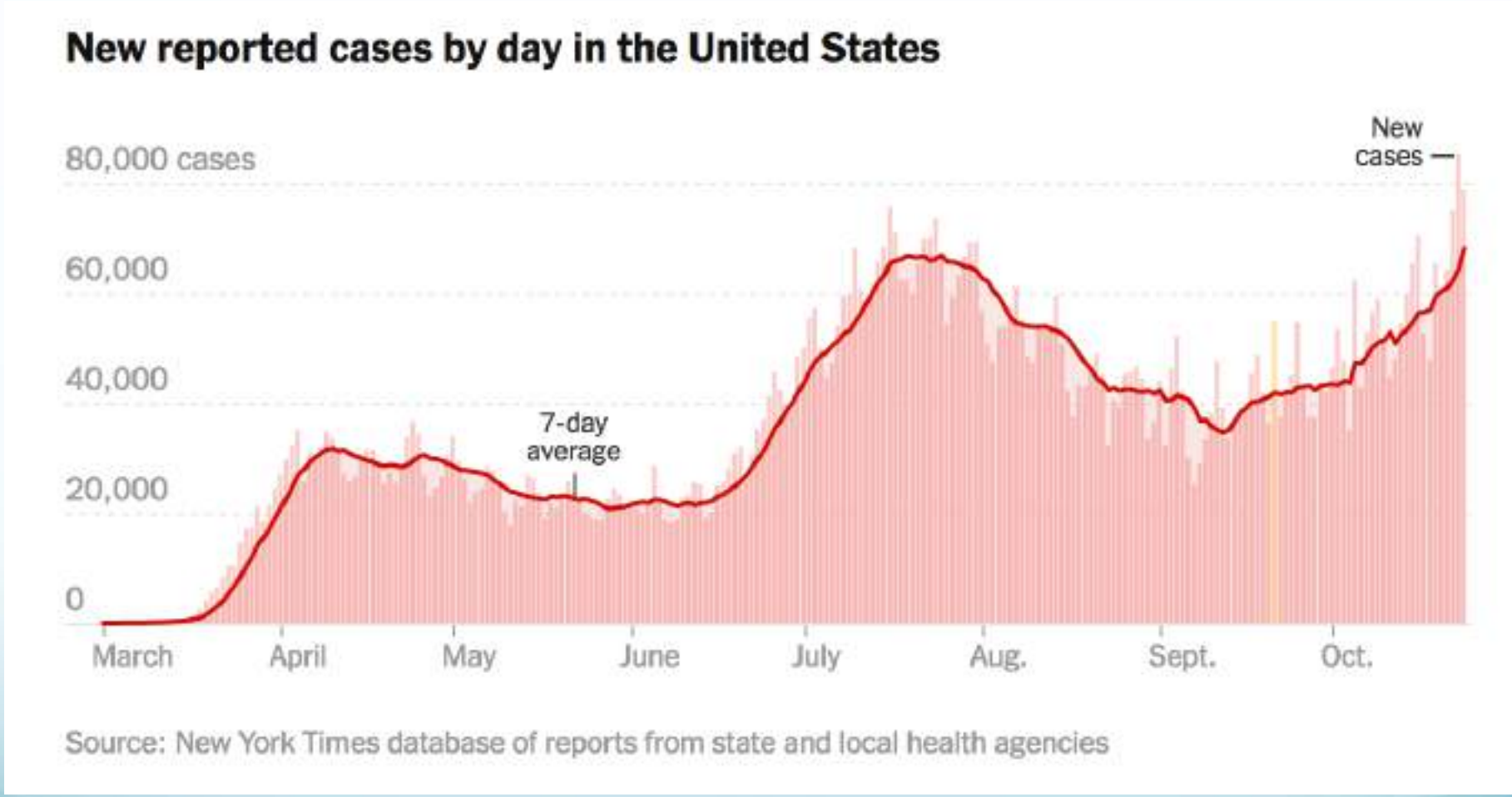
What we have learned with time about the virus- the science, and public health response?

- Travelling a metre or two in droplets, now 'it can aerosol' **evidence from choirs Washington State USA and Amsterdam**
- Recognised risk areas – 'inside', lots of people- talking and singing, stagnant air space, time spent – **church services, funerals, 'events', parties, 'meetings', bars and restaurants**
- ***Masks 'give some protection against spreading to others' but not 'against being infected' to now masks offer good protection against infecting and being infected
- Times on surfaces- changing science – from hours to days to weeks – **clothing 48h, paper 72h, metal surfaces 72h now smooth surfaces– phone & computer screens 4 weeks**

Will the virus just go away?

- The first Sars coronavirus in 2003 did disappear! Why? A dominant clade could no longer infect humans?
- MERS – a second dangerous coronavirus in 2009 largely in the Middle East did not seem to spread
- *COVID-19 virus is different as it can be spread before symptoms appear, or if a person asymptomatic – huge advantage for the virus!
- We see it in the numbers!

The United States is leading the ‘waves’



A cruel twist to existing COVID-19 infections

Perhaps 30% of the survivors develop 'LONG COVID'

Ongoing symptoms now 6months on : **extreme fatigue, 'brain fog', sleep disturbance and generally feeling like ******, no sign of getting better**

That should not have surprised health practitioners

We already know about a long term 'post viral illness' like that

ME/CFS, a life long debilitating illness that affects 15 million people world wide and >20,000 in NZ)

Will a vaccine be effective to stop viral infections ?

- We do not have vaccine against the common cold coronavirus, and against bacteria like TB and other viruses like HIV-1 –will be difficult to get an effective vaccine that gives lasting immunity
- **But there are 38 in human trials, and 149 in earlier stages of testing!**
- Antibodies produced by mild infections of COVID-19 are shortlived
- While rare there are cases reported of re infection with a new clade (~30) **(reported today 285 people in Mexico)**

What the vaccines are targeting?

5 of the most advanced and most diverse

Oxford/AstraZeneca(UK)
-Weakened common cold adenovirus genetically modified with the COVID-19 spike proteins – **in monkeys 'partially protective'**

Sinovac Biotech (China) + 2 other similar efforts
-inactivated COVID-19 – **prevented infection in monkeys**

Moderna/NIAID (USA)
-against the 'RNA' of the virus – quicker to manufacture, but newer technology , reported adverse reactions and stability.
Good response in monkeys – no infection reported

Pfizer/BioNtech (Germany
-Against the RNA – good immune response in human trials – have **not seen monkey studies**

Johnson & Johnson Janssen Pharm
-Weakened carrier adenovirus – expressing the COVID-19 spike protein, **protective by single dose in monkeys**

Should we get vaccinated?

Getting vaccinated?

- Likely to be at least short term protection (~6months)
- Even if effective in 50% of people – that would give some ‘herd protection’

COVID-19 therapeutics?

- Smart compounds to inhibit ACE2 /spike interaction

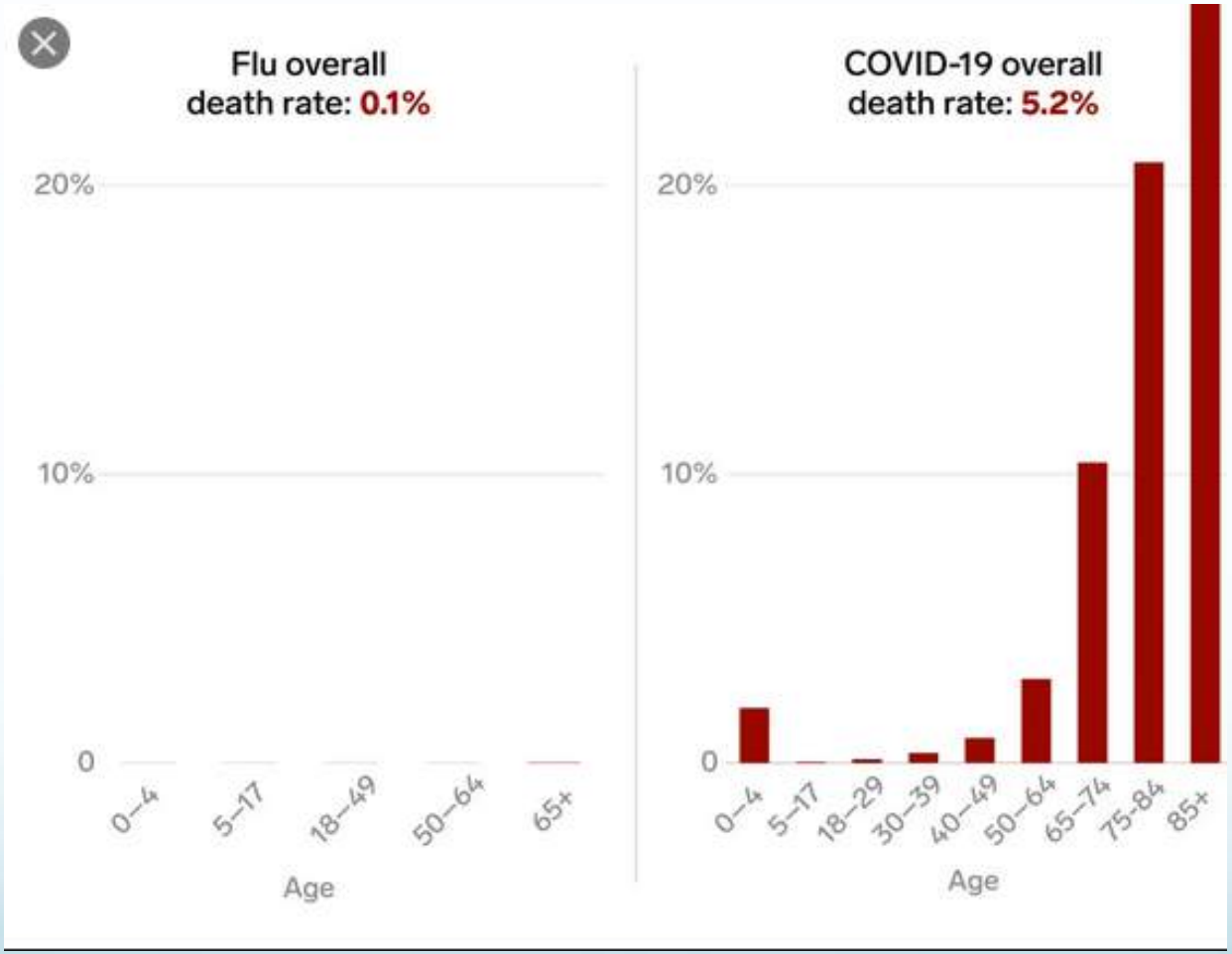
How do different viral management strategies affect us? eg Plan A (NZ) and Plan B (Sweden)

1. **Plan A – NZ's 'circuit breaker' approach**- Govt & MoH
   - Stop spread – shutdown at risk activities
   - Protect seniors and the infirm, and those with pre-existing conditions (~50% of us)
   - Try to stop young people being super spreaders

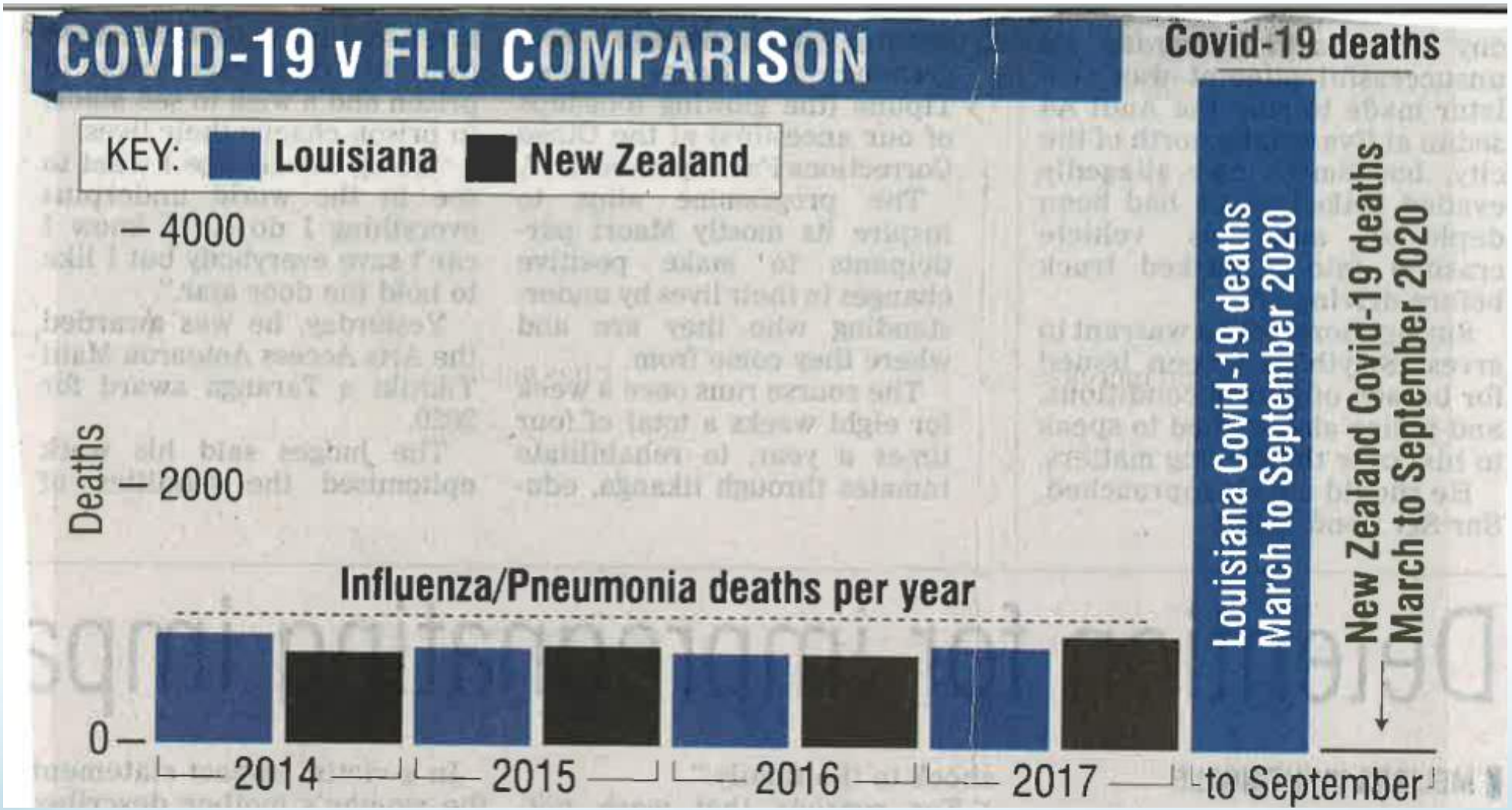
2. **Plan B –living with the virus – Sweden**
   - Let the elderly and infirm and vulnerable hide away and cope-
   - Some are going to die anyway of the 'flu' or something else anyway
   - Let young people think they are invincible

Sweden – did not build up 'herd immunity'- but thousands of elderly died compared with Norway, Denmark, Finland

If COVID-19 does not take us it won't be the flu!



Comparing ‘Flu’ with COVID -19- the numbers tell a grim truth
ODT 12th October Dunedin Writer Lynley Hood



What is the best course ahead for us seniors?

"The most important part of the disease triangle is how people respond" (Siouxsie Wiles)

- We will continue to get spot outbreaks that have the danger of rapidly spreading as we carry out more normal activities!
- The '5 million' will quickly become complacent – it is only takes a day or two
- As seniors we must keep up the new **standards of hygiene, social distancing,** and **mask wearing on public transport, contact tracing app** !
- We must be cautious about large inside gatherings if COVID-19 returns to Dunedin! (**sadly that is arts events, church, choirs, larger family gatherings**)
- We could be leading voices in progressive societal change that will improve and protect the health of our nation for our children and grandchildren (**my list** : **growing our own food, sensible limits on tourism and agricultural practice, protecting our 'wonderful backyard', limiting fossil fuel transport)**