

08 May 2020

This briefing focuses on the virus itself; what scientists know and do not know about the virus, what we are learning about effective control measures, and the development of treatments and vaccines.

You can find our previous briefing reports and research summaries, and a link to sign up to future updates, at <https://stakeholderstrategies.co.nz/covid-contact/>

Stakeholder Strategies: Update on the COVID-19 virus

<https://stakeholderstrategies.co.nz/wp-content/uploads/2020/05/Update-on-the-COVID-19-virus-.pdf>

Our latest report provides an update on the COVID-19 virus in New Zealand and around the globe, and provides scenarios which New Zealand organisations can use to begin planning beyond the current lockdown period.

- New Zealand has been very effective in fighting COVID-19 and has achieved a case fatality rate 87% lower than the global average, partly due to achieving best practice testing, contact-tracing, and isolation practices
- Scientific consensus is still developing on how COVID-19 attacks the body, but emerging research indicates that it may cause damage to the body through oxidative stress. The oxidative stress theory implies that people with cardiovascular issues may be more at risk
- Having a vaccine developed, produced, and distributed within 12-18 months is possible but unlikely
- We propose three scenarios and two wildcards to assist New Zealand organisations' planning until a vaccine arrives, with a base case that New Zealand will maintain elimination and reopen its economy much earlier than most of the world.

Tomas Pueyo: Learning how to dance, parts two and three

Part Two, Coronavirus: The basic dance steps everyone can follow

<https://medium.com/@tomaspueyo/coronavirus-the-basic-dance-steps-everybody-can-follow-b3d216daa343>

In part two of 'Learning how to Dance' [see the summary of part one in our [April 17 update](#)] Pueyo outlines the lowest cost measures to reduce COVID-19 transmission and argues that everyone should wear homemade masks. Readers may find useful to refer to Pueyo's comprehensive list of practices that can reduce COVID-19 infection at an office, but we note that a New Zealand Government review has [not found sufficient](#) evidence to make mask wearing compulsory.

- Pueyo reiterates the thesis from his earlier articles that the aim of measures to fight COVID-19 is to allow as much economic activity as possible to occur whilst keeping the virus transmission rate below one
- Pueyo strongly advocates mask-wearing as an important and low-cost measure as even if home-made masks are only partially effective, their cost is close to zero and they may reduce transmission materially
- Beyond mask-wearing, Pueyo also recommends that citizens and businesses adopt several public health and social distancing measures: washing hands, avoiding standing for a long time close to people who are talking, avoiding social gatherings, keeping a two metre

distance from people in public when possible, and adjusting office set-up to allow for more space between workers.

Part Three, Coronavirus: How to do testing and contact-tracing

<https://medium.com/@tomaspueyo/coronavirus-how-to-do-testing-and-contact-tracing-bde85b64072e>

In part three of 'Learning How to Dance', Pueyo looks at controlling COVID-19 at a national level and the required efficacy of control mechanisms to bring the epidemic under control

- Four mechanisms are required at a national level to identify and isolate cases and prevent transmission of COVID-19 without a total economic shutdown; testing, isolation, contact tracing and quarantine
- A low positive test rate, below 3%, has been linked with control of the pandemic. Testing only symptomatic people is not enough; their contacts must also be tested, which can reduce the transmission rate by 85%
- 70-90% of contacts need to be traced within two days for effective control of the virus. Pueyo's goal aligns with New Zealand's current goal of 80% contacts traced within 48 hours
- Pueyo illustrates the limitations of contact tracing apps. Even if they are available, only some people will download, set up and enable the app, meaning that only a small fraction of contacts can be traced. If the app is automatically downloaded and consent is made opt-out, contacts traced could increase significantly
- Pueyo advocates for mandatory Bluetooth apps and QR code tracking to support manual contact tracing while still maintaining some privacy. He is an advocate for citizens to be willing to have a relatively small amount of data gathered to fight the pandemic and in return see wider civil liberties restored.

The Economist: Two potential therapies for COVID-19 have some effect

[Free to access but requires log-in]

<https://www.economist.com/science-and-technology/2020/05/04/two-potential-therapies-for-covid-19-have-some-effect>

The Economist outlines the potential and limitations of two drugs that are being used to fight COVID-19

- There are two categories of drugs that may be effective for fighting COVID-19. Antivirals fight virus replication directly, while anti-inflammatories fight the potentially fatal over-reactions of the immune system
- Remdesivir, an antiviral agent that was originally developed to treat Ebola, has been shown to reduce recovery time from 15 to 11 days. It has not been shown to reduce the death rate, but a quicker recovery can reduce pressure on hospitals. Remdesivir RNA binds with the virus and reduces replication. Clinicians are concerned by the lack of full data being published from the trial, because they have questions about when and for whom the drug may be effective

- Another drug that has shown effectiveness is Actemra, an anti-inflammatory currently prescribed for arthritis. One way that COVID-19 patients can die is through “cytokine storms.” Cytokines are molecules that are signals in the immune system. Overproduction of cytokines can cause inflammation in the lungs and lung failure. Actemra blocks cell receptors to a cytokine and calms inflammation. It has been shown to reduce death in the most unwell patients. It is important, however, not to deliver anti-inflammatories too soon, because some level of immune response is needed to fight the virus.

Bill Gates and the World Economic Forum: Here's what you need to know about the COVID-19 vaccine

<https://www.weforum.org/agenda/2020/05/what-you-need-to-know-about-the-covid-19-vaccine/>

Gates outlines the process that will be required for a COVID-19 vaccine to be developed, tested, and distributed within a two-year timeframe

- ‘Normal’ life will resume when there is a 95% effective treatment for COVID-19 or a vaccine. No potential treatments are anywhere near as effective as they need to be, so it is likely the world will be waiting for a vaccine to resume international travel and other high-contact activities
- Gates predicts a vaccine could be produced in between nine months and two years. Under two years would be extremely fast, because most vaccines take five years to get through trials to test for safety and efficacy
- Gates discusses RNA vaccines, where the disease’s RNA is injected into the body, as an exciting alternative to traditional live and inactivated vaccines. RNA vaccines do not require the growth of a large amount of biological material and are thus quicker to produce
- A vaccine does not need to be fully effective to be useful. Gates estimates that anything above 70% effective will build herd immunity, though many vaccines are less effective in older people who have a slower immune system
- Gates observes a further issue in manufacturing and distributing seven billion vaccines, and that factories, the WHO, and national health authorities should be preparing now. Following a summit on May 4, world leaders have pledged €7.6B (\$13.5 NZD) fund for this purpose.

Dr Siouxsie Wiles and Toby Morris: What we don’t know about COVID-19

<https://thespinoff.co.nz/society/06-05-2020/siouxsie-wiles-toby-morris-what-we-dont-know-about-covid-19/>

Wiles discusses emerging research and unknowns about two key factors of COVID-19 transmission, namely who is infectious, and for how long

- Who is infectious remains a key question about the spread of COVID-19. Wiles distinguishes between pre-symptomatic people, who have contracted the disease but are yet to develop symptoms, and asymptomatic people, who have the disease but never develop symptoms. Emerging research suggests that pre-symptomatic people and people with very mild symptoms may be infectious, but the small number of people who are truly asymptomatic probably are not

- A further question is how long sick people remain infectious. Studies are starting to suggest that people are only infectious for a few days before developing symptoms and a few days after, rather than for the whole course of the illness
- Wiles further discusses a study into the close contacts of COVID-19 patients. The largest group of close contacts were health care contacts, but more household contacts who encountered the disease became ill, which suggests that having repeated and unprotected contact with an infected person may increase the chance of catching the disease.