Blog 24/5/2020

Wow! Again! It's 50 days since a case of Covid-19 has been spread in the community. While an occasional case if still being registered, these are all within a known cluster where those people are still in quarantine, and they are household contacts of known cases. My definition of when it was safe to come out and behave normally was 4 lots of a fortnight back to back of no new community cases. That was at least 6 weeks ago. That's up on Thursday. So after this coming week we will be back to more normal behaviour around the surgery we hope. We will wait to see what our epidemiologists say [they are the ones who crunch the numbers] and ultimately the politicians [who have to weigh up everyone's interests] say, and abide by their rules. After all some of these clusters are taking ages to burn out. But it looks exciting. It's a big bubble now, one that is all of New Zealand/Aotearoa but it will be a pretty safe one until we get vaccines, early anti-viral treatment and rapid effective tests at the onset of the infection.

Our treatment is already a lot more effective, as we are far better now at recognising the onset of and treating the second week hyper reactive immune system response. We are much, much better at treating the lung cell damage and its consequences due to the internet and medical journals opening up all their academic papers and letters – so called 'open source'- to all scientists and doctors to rapidly share. We now know ventilators are often not needed and in fact sometimes can dramatically worsen a patients condition, and most importantly, we are learning to tell which patients not to ventilate. All this has happened as overworked and stressed out intensive care doctors often with inadequate PPE gear around the world are still finding the time to share ideas via specially set up websites ,and letters to prominent medical journals. The journals are how we doctors have always shared new medical information. These are speeding up their normally slow safety checks and getting them onto the internet much faster than I have ever seen before. The scientists are working together much more than I have ever seen, even more than earlier in the Millennium when they came together to sequence human and other creature genomes. There are new dedicated sites like Nextstrain for instance sharing where the typo errors are coming in on the rNA of the SARS-CoV-2 virus that caused covid-19 to accurately allow contact tracing. These sites can be extremely technical, and certainly at times I have to read slowly and think about what the meaning and implications are of what these scientists are saying. I couldn't do it if I only had my Medical School training and the ongoing medical education since. It was being on the Royal Commission on Genetic Modification back 2000-2001 which gave me the basics to enable me to keep up ever since, and so help me explain to our patients the complex, fast evolving science around Covid-19.

You might like to miss this paragraph. It's very technical. It's because I have fielded a number of questions from patients reading this blog that I am going to try and explain better why the point mutations in the rNA of the virus that are enabling contact tracing are not evidence of a fast mutating virus, and why that's significant.

RNA is the 'plans in the briefcase' of the virus. In SARS-CoV-2 it's a single strand of nearly 30, 000 base pairs , of which nearly half [13,500] codes just one gene that makes a single protein that seems to be responsible to enabling it to multiply our dNA , which floods the cells with lots of the virus and kills the cell. That strand of rNA codes a new strand, a bit like pulling the backing tape off a roll of tape. Every now and then there is a typo. The tape is only made up of combinations of 4 molecules known for short as A, C, G and U. Sometimes instead of A on the backing tape creating a C on the tape itself, it gets a typo and creates say a G.
This is what happened at the 25,616 letter on the virus genome in Iran and what our first patient picked up coming back from holiday to New Zealand and hospitalised in Auckland had. Yet the next two patients [Numbers 2 and 4- remember the guy from Manurewa who went to the Tools concert?] who had been in Italy had a different but both a similar mutation. In all the mutations found in the NZ cases which came in from all over the world they add up to changes in 0.12% overall. The SARS-Cov-1 virus that caused SARS back at the beginning of the millennium, a far more virulent illness, which died out relatively quickly, is 27% different to the one that causes Covid-19. While SARS-CoV-2 does have some ability to correct typos, while quite limited it helps keep the covid-19 virus more stable. There was an interesting little flurry of excitement 2-4 weeks back which has settled down now when a big deletion – 81 letters- was found in the gene that codes for those spikes that stick into the ACE 2 and ACE 3 receptors that was found in an European strain detected in Arizona. The scientists who found it got excited and wondered if this had powered up the virus's ability to infiltrate the lung cells, but when the number crunchers looked at the data, they don't think so, and like most mutations it seems to be having no effect.
Except it suggests this tiny little area might not be the place to build a vaccine against. And we were hoping that the spikes, the hooks, were a good target for a potential vaccine. They might be still, but just a different place less the vaccine will only work well with one strain and not the others.

All this technical stuff puts to rest conspiracy propaganda that the virus was engineered in a laboratory in China...or Russia etc. Humans can't stick stuff into viruses or chop them out neatly. And they leave loud signposts all over the dNA and rNA when they do so. There are none of those signposts on the genomes being looked at scientists from all over the world. And surely, if there were, not all of those scientists could agree to keep their mouths shut.

It's a similar way all this technical stuff reminds us that people who live in glasshouses shouldn't throw stones. To blame the Chinese for the infection is being a little blind about our own backyard. It's one thing to be opposed to the wet markets in Wu-Han where this virus probably started for environmental and hygiene reasons. I don't think I had heard of pangolins before. And seeing pictures of heaps of these dead cat- sized little anteater-like creatures traded from Africa under appalling inhumane conditions as well as the trade in other rare and endangered species naturally horrifies me. But cats can get coronavirus infections too we know,

including covid-19 [it seems a milder illness for them, except in old cats with other complications], and dogs can at the minimum transmit it on their coats. Many of us have our pets inside and even on our beds. It's a cold night and my big old Burmese tomcat Tahu has just crawled in beside me as I write this! And as for hygiene I doubt many of you have seen inside a freezing works, or chicken processing plant either, though I will admit these have cleaned up their act a lot in the past 20-30 years as legislation and export regulations force them to. MERS, the Middle Eastern coronavirus which caused a lot of deaths in the Gulf states 2010-2013 was thought to have started in bats and acquired its human infectivity through camels. It's still around, occasional cases still pop up, but it has become less aggressive in transmission, has never spread outside the Arab states, and has a much lower death rate than it did at the beginning. Maybe eventually the SARS-Cov-2 virus will go the same way.

After all, it's a stupid virus that kills off its host: definitely not a good way for a virus to stay around. And China has closed down all the wet markets across China. I doubt any other country could do it as quickly and finally as their politicians have moved against strong cultural beliefs in different foods as medicines for illnesses and wellness. I'd be jumping up and down if I was told I couldn't eat kina[sea urchins], tirotiro, mako ake[preserved dried shark] or toroi [fermented mussels and watercress or puha] anymore even if lots of Maori turn their noses up at them these days -more for me I always say.

Tiakina Te Ora is running well. With great sadness I report it is Kay Harvey's last week as one of our nurses after over 17 years with us. She stayed longer than she wanted too, first to help out with the influenza vaccines and covid-19, and then to train Shannon to take over from her, both of which we are very grateful for, and typical of her care for us all. We will all miss her, patients and staff alike but I think in particular me. She has been a pou manawa, a shoring up column, of our surgery. And not bad at sacking any of us home silly enough to come to work unwell. Including me. Hopefully we will see her back for short stints of relieving and catching up. But we all change and evolve and we continue to love seeing our old patients and welcome new ones.

Ma te wa, Doctors: Jacqueline, Mick and Cathy, Nurses: Kay, Paulette and Shannon, Receptionists: Anjana. Ana and Jane, Practice manager: Meriana Te Tuhi and our housekeepers: Bronson and Nikita, aka The Team.

PS we have a new electronic camera. And in the next fortnight I promise, new pics and bios. And hopefully, less about covid-19 as it's threat diminishes.