From: Wendy McGuinness <wmcg@mcguinnessinstitute.org>
Date: Monday, 2 March 2020 at 14:57
To: "d.clark@ministers.govt.nz" <d.clark@ministers.govt.nz>
Cc: "info@health.govt.nz" <info@health.govt.nz>
Subject: Virus Outbreak: ICU beds and more - OIA Request

Dear Hon Dr David Clark,

We have not met but I run the McGuinness Institute, a think tank in Wellington that focuses on New Zealand's long term future with a particular focus on risk management. I have worked for Treasury, am a Fellow Chartered Accountant and hold an MBA. I also have an ongoing working relationship with Minister Robertson and Minister Shaw. The Institute has published two reports on previous virus outbreaks: (1) *Managing the Business Risk of a Pandemic: Lessons from the Past and a Checklist for the Future (2006)* and (2) *Lessons From the West African Ebola Outbreak in Relation to New Zealand's Supply Chain Resilience (2015)*. The latter was commissioned by Z-Energy and Foodstuffs. Below I have set out a number of questions which I have positioned as an OIA request.

My interest in the recent coronavirus virus is whether New Zealand has the necessary medical hardware (such as ICU beds) to deal with a significant outbreak. I am concerned that our medical infrastructure has a few limitations that are not well understood/or being addressed. Key points are as follows:

- A 2018 ANZICS Core Report indicates New Zealand had 251 ICU beds (5.14 ICU beds per 100,000). Australia has 8.92 ICU beds per 100,000 (see image 1 below). I have also copied a note in their report on how the registry data can be used (see image 2, further below). My view is that we may need to buy or make more ICU medical ventilators. I expect they will not be able to be purchased given global demand, but the New Zealand government could approach companies such as F&P Healthcare, Skope Industries and other manufactures, to see if they could make them.

- A comparison with the USA is important. See the 1 March 2020 NYT article *How Prepared Is the U.S. for a Coronavirus Outbreak?*. It has a few useful links. One is the Global Health Security Index – See image 3, see in particular the 'detect' and 'health' categories. Of note, the NYT article refers to 62,000 medical ventilators which means they had about 20 medical ventilators per 100,000 in 2010. The article notes:

  In 2005, the federal government sought to assess how a respiratory-related pandemic might play out in the United States. Its report estimated that a severe influenza pandemic would require mechanical ventilators for 740,000 critically ill people. [now updated in 2017 here]

  Today, as the country faces the possibility of a widespread outbreak of a new respiratory infection caused by the coronavirus, there are nowhere near that many ventilators, and most are already in use. Only about 62,000 full-featured ventilators were in hospitals across the country, a 2010 study found. More than 10,000 others are stored in the Strategic National Stockpile, a federal cache of supplies and medicines held in case of emergencies, according to Dr. Thomas R. Frieden, a former director of the Centers for Disease Control and Prevention.

Tens of thousands of other respiratory devices could be repurposed in an emergency, experts say, but the shortfall could be stark, potentially forcing doctors to make excruciating life-or-death decisions about who would get such help should hospitals become flooded with the desperately sick.

Much about the coronavirus remains unclear, and it is far from certain that the outbreak will reach severe proportions in the United States or affect many regions at once. With its top-notch scientists, modern hospitals and sprawling public health infrastructure, most experts agree, the United States is among the countries best prepared to prevent or manage such an epidemic.

Given this background, and the text (far below in *New Zealand's Influenza Pandemic Plan* (2017)), I would appreciate answers to the following questions (as an OIA):

1. How many ICU beds does New Zealand currently have (with medical ventilators) and how many are currently being used?
2. How many other respiratory devices (such as CPAPs) does New Zealand currently have and do medical professionals consider they are useful (e.g. are they able to be repurposed into medical ventilators)?
3. Do we have a Strategic National Stockpile (SNS) like in the US? If yes, what equipment do we have in our stockpile?
4. Does the New Zealand Government think that we have enough ICU beds and other respiratory devices (such as CPAP's)? If not, how many do we need and what actions are the New Zealand government doing to ensure that there is sufficient?
5. Has the MoH been in contact with suppliers or other organisations based in New Zealand that might be capable of manufacturing medical ventilators in preparation for possible outbreaks?
6. For example, has the New Zealand government approached New Zealand manufactures to see if they are capable of manufacturing medical ventilators and CPAP's?
7. Has New Zealand started manufacture using its inshore capability of P2 grade masks (as noted in the plan – see image 4)? If not, can you explain why not. For example, is it because New Zealand no longer has that capability or you think we have enough masks for this type of virus?
8. Is the pandemic plan under review given the specific characteristics of this virus (i.e. some patients need long time ICU bed care)? (I imagine an Appendix could be added to the existing plan specifying the Government's response to the coronavirus virus.)

Lastly, I have a concern that the communication from Government is not ideal. Telling people not to panic and that the government has everything under control will only create more panic if what the government says proves to be incorrect. A better way might be to say something like the following:

a) We need all New Zealanders to be vigilant and careful at this time.

b) The incubation period is long and can spread before symptoms show, therefore we all need to be on guard. For example: businesses need to prepare now in case they need to operate on smaller staff numbers or staff working from home and schools need to consider ways they can continue to educate students while they are at home.

c) We are working on supply chain issues. New Zealand is a major food maker (not taker) so there will be food for all. However we also welcome households keeping two/three weeks of food in the house as this is also good practice for earthquakes and all other natural disasters.

d) The government is reviewing the 2017 plan in line with the nature and characteristics of this virus and more information will be made available as the government works through these issues (as noted above this could be in the form of a new appendix 'issued in draft for consultation' to form part of the existing *New Zealand's Influenza Pandemic Plan* 2017).

Thank you for considering the above ideas. I look forward to receiving answers to the above questions.

Best wishes,

Wendy McGuinness
Chief Executive

Image 1: From ANZICS Core Report (2018)

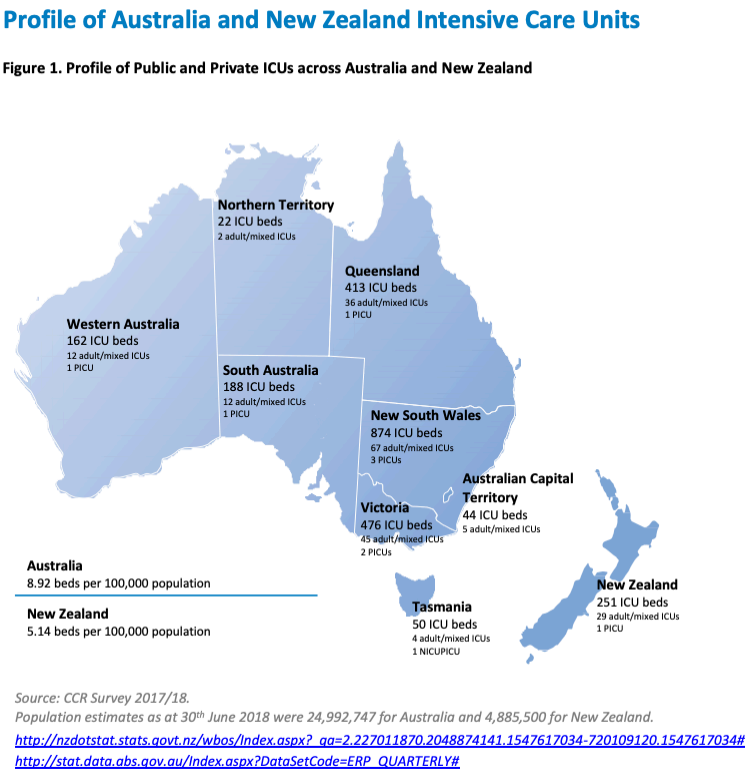

Image 2: From ANZICS Core Report (2018)

Using Registry data

While the primary role of the ANZICS Intensive Care Registries is for benchmarking ICU performance, the data provides opportunities to identify and report on current, emerging and critical issues for Intensive Care across the Australia and New Zealand

The impact of "Aussie Flu" in 2017 worse than "Swine Flu" in 2009

July, August & September 2017[1] saw the highest ever proportion of ICU admissions with bacterial pneumonia, viral pneumonitis and sepsis in Australia with: 16% of all ICU admissions and 26.5% of all ICU bed-days

The peak was similar to the H1N1 pandemic[2] in 2009 but was sustained throughout Winter and into Spring. It was associated with a reduction in elective surgical admissions to ICU. Influenza H3N2 was the most prevalent strain.[3] The eastern Australian states were most severely affected, more so than New Zealand or other parts of Australia.

Figure 6. Percentage of All Patients Admitted to Australian and New Zealand ICUs with Bacterial Pneumonia, Viral Pneumonitis, or Sepsis each week, 2009 to 2017

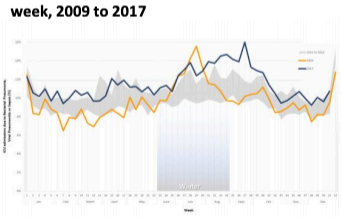

Image 3: From the Global Health Security Index (which shows how poor NZ is when compared to the US, UK and Australia)

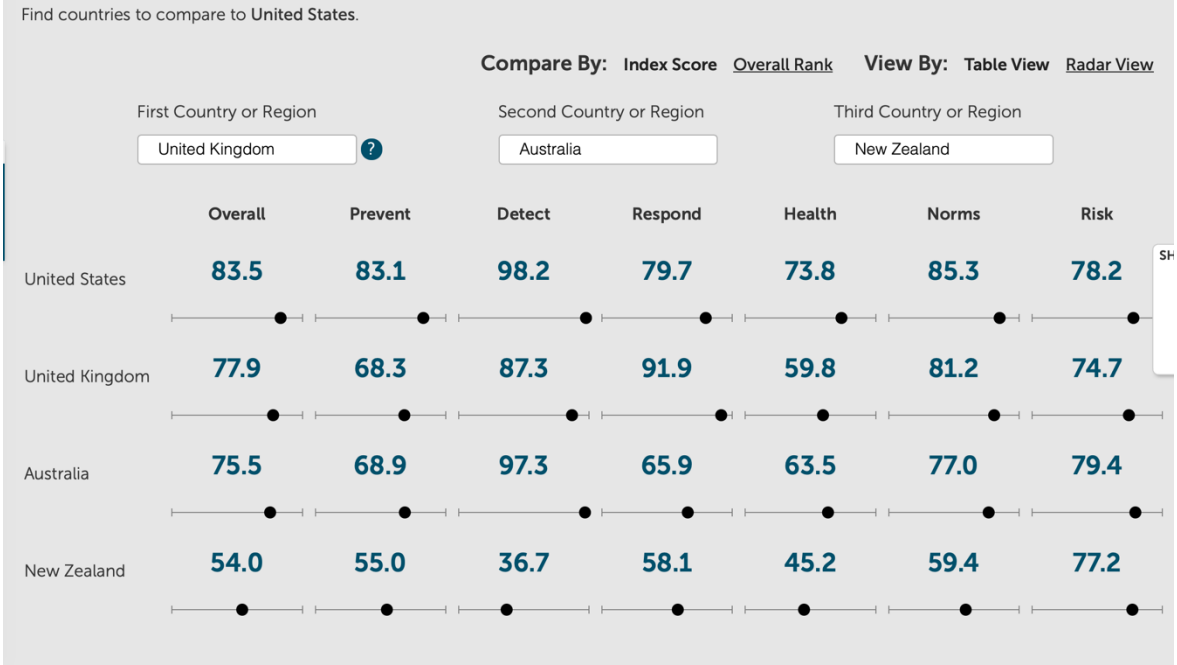

Image 4: From New Zealand Influenza Pandemic Plan (2017) (also attached)

Hospital treatment

If people with pandemic influenza are assessed as needing hospital care and resourced beds are available, they will be referred for treatment. As demand in a moderate to severe pandemic is likely to exceed supply, public and private hospitals will need to prioritise admissions, rationalise non- acute services and review staff rosters. Capacity to admit people to hospital during the Manage It phase is likely to be limited during a mild to moderate pandemic and considerably constrained during a severe pandemic.

District health boards will need to liaise with local councils, CDEM groups and voluntary groups, who can then assist in providing community care.

Other clinical supplies

In an international health emergency such as a severe pandemic, normal supply chains to New Zealand may be severely interrupted due to a reduction in international manufacturing and supply chains. To ensure health care workers and first responders are protected, because they provide care for the population, the Ministry of Health has enhanced various clinical supplies held in DHB stores and bulk stores around the country.

Enhanced supplies of personal protective equipment include general purpose masks and P2 grade masks, gowns, aprons and gloves. Stocks of intravenous fluids and associated equipment, such as giving sets, injection devices, needles and syringes, have also been enhanced. These supplies are stored within DHBs, but remain under Ministry of Health oversight, to be released under Ministry direction if required.

The Ministry of Health also holds bulk stores of P2 grade masks and general purpose masks in several locations around the country. A strategic P2 and general purpose mask-manufacturing capability has been established in New Zealand, and a supply of stockpiled raw material is in place to further reduce this country's vulnerability to the disruption of overseas supply lines.

Large numbers of deaths over a short time could affect the capacity of normal services to dispose of dead bodies within a reasonable or culturally acceptable timeframe, or to safely store dead bodies until disposal is possible.

The Ministry of Health holds New Zealand's only large supply of body bags in bulk stores off DHB sites. Body bags will assist in managing a very large mass casualty event by providing a culturally acceptable alternative to coffins for burials or readily enabling frozen storage of the dead until normal disposal systems can meet demands.

Due to the possible disruption of international and national manufacturing and distribution of supplies for other diseases and conditions, it may be necessary for the Ministry of Health to set prioritisation criteria for other critical clinical supplies in short supply.