

**CORPORATE OFFICE**

Level 1  
32 Oxford Terrace  
Christchurch Central  
**CHRISTCHURCH 8011**

Telephone: 0064 3 364 4160  
Fax: 0064 3 364 4165  
[carolyn.gullery@cdhb.health.nz](mailto:carolyn.gullery@cdhb.health.nz)

6 May 2020

9(2)(a)

**RE Official Information Act request CDHB 10275**

I refer to your email dated 15 February 2020 requesting information relating to COVID-19 (Coronavirus) Pandemic Preparations under the Official Information Act from Canterbury DHB. We note that your request was partially transferred to the Ministry of Health on 21 February 2020. Canterbury DHB has taken responsibility for responding to the following questions.

**1. Availability of Intensive Care Unit (ICU) beds and oxygen delivery machinery.**

A recent paper states that 23% of COVID-19 cases/hospital admissions require ICU treatment. This is similar to official Singapore numbers that as of February 14, seven of 43 current cases (16%) in Singapore are currently in the ICU (and the ICU admissions rate is fluctuating daily as new cases come and go).

Trivial non-expert estimation of a moderate 12-month epidemic assuming 20% requiring ICU and 6 ICU days per case shows New Zealand may require a minimum of 700 ICU beds able to care for infectious patients.

Total Cases	Cases / Month	20% ICU	ICU Beds
20,000	1,667	333	56
50,000	4,167	833	139
100,000	8,333	1,667	278
250,000	20,833	4,167	694
500,000	41,667	8,333	1,389
1,000,000	83,333	16,667	2,778

In a recent paper, of 36 ICU cases, 4 (11.1%) received high-flow oxygen therapy, 15 (41.7%) received non-invasive ventilation, and 17 (47.2%) received invasive ventilation (4 were switched to extracorporeal membrane oxygenation). This indicates that in even a moderate pandemic, demand on facilities and equipment will be challenging.

- 1. Has your agency done detailed expert modelling to model the amount of resources (healthcare workers, machines, ICU beds etc) necessary to respond to certain levels of COVID-19 case numbers with consideration to the specific nature of the COVID-19 disease? If yes, please supply the information.**

We have used both international and national models of demand similar to the literature cited above. Each of the models differs according to the assumptions, data available and way the health system provides services. Using the assumptions from other models combined with new data has resulted in models being updated daily. The two New Zealand models can be found at:

<https://www.health.govt.nz/publication/covid-19-modelling-reports>

<https://www.tepunahamatatini.ac.nz/2020/03/26/suppression-and-mitigation-strategies-for-control-of-covid-19-in-new-zealand/>

While we are continually updating the modelling of susceptible, exposed, infected, recovered and died, the lack of epidemiological and aetiological evidence limits the predictive validity of the models. These models are being used to prepare our responses which will be fine-tuned as further data is available.

This information will not be made available until it has been peer reviewed and tested.

- 1. What is the total number of ICU beds, capable of caring for infectious patients without undue risk to healthcare workers and other patients, currently operational in your region?**

The Canterbury DHB has 23 ICU beds in total, four of which are capable of caring for infectious patients without undue risk to healthcare workers and other patients. There are plans to urgently commission ICU beds in the unfinished new Hagley building. This would provide up to 36 additional beds.

- 2. On average, at any given time, approximately and generally, how many of these ICU beds are available to receive new patients?**

Typically, of the four ICU beds capable of caring for infectious patients, two of these beds are available to receive new patients as others are occupied. Current efforts are underway to ensure increased capacity is available. Efforts have been made to ensure other planned ICU use is reduced so these beds are available for COVID patients if required.

- 3. How many machines capable of high-flow oxygen therapy does your region have?**

The Canterbury DHB has 41 machines capable of high-flow oxygen therapy.

- 4. How many machines capable of non-invasive ventilation does your region have?**

The Canterbury DHB has nine machines capable of non-invasive ventilation.

- 5. How many machines capable of invasive ventilation does your region have?**

The Canterbury DHB has 41 machines capable of invasive ventilation.

**Please note:** We are exploring the availability of additional capacity with our private providers. This has yet to be confirmed.

- 6. How many machines capable of extracorporeal membrane oxygenation (ECMO) does your region have?**

The Canterbury DHB does not have any machines capable of extracorporeal membrane oxygenation (ECMO).

## 2. Emergency procurements.

Considering the following list of materials, medicines and items.

1. P2/N95 Masks.
2. PPE Goggles.
3. PPE Face Shields.
4. PPE Gowns.
5. PPE Hazmat/coverall suits.
6. Machines and related supplies for High-flow oxygen therapy.
7. Machines and related supplies for Non-invasive ventilation.
8. Machines and related supplies for Invasive ventilation.
9. Machines and related supplies for Extracorporeal membrane oxygenation (ECMO).
10. Other materials, machines and medicines that medical experts have advised you will help to respond to a COVID-19 epidemic.

The National Reserve Supply does not appear to contain many of those items and primarily contains medication for the treatment of and vaccination against influenza, which are not effective with COVID-19. Further, it states that DHBs are responsible to store PPE according to their needs.

I request the following information:

1. How many of each of those 10 items does your region currently have suitable for use in a COVID-19 outbreak with consideration to the specific nature of the COVID-19 disease?
  - a) P2/N95 Masks.
  - b) PPE Goggles.
  - c) PPE Face Shields.
  - d) PPE Gowns.
  - e) PPE Hazmat/coverall suits.

**Table one:** Inventories of PPE (broken into pairs of gloves, masks, face screens and scrubs) held by Canterbury DHB and West Coast DHB as at 22 April 2020

	Masks (in units)		Gowns and Aprons (in units)		Gloves	Eye Protection (in units)		Hand sanitiser (in units)	
	General purpose (surgical)	P2/N95	Aprons	Gowns	EACHES	Face shields	Goggles /Glasses	Number of bottles	Bottle size
<b>Weekly usage</b>	83,600	3,550	23,700	13,910	384,090	223	388	1,387	500ml
<b>Stock arrived</b>		2,880			1,250,000	192	120	1,904	500ml
<b>Current amount in stock</b>	1,721,471	54,880	890,550	40,270	3,403,860	18	3,766	6,534	500ml
<b>Order quantity outstanding</b>		516,250	106,000	-	75,000	3,124	-	8,142	500ml

**f) Machines and related supplies for High-flow oxygen therapy.**

See section 1 response above

**g) Machines and related supplies for Non-invasive ventilation.**

See section 1 response above

**h) Machines and related supplies for Invasive ventilation.**

See section 1 response above

**i) Machines and related supplies for Extracorporeal membrane oxygenation (ECMO).**

See section 1 response above

**j) Other materials, machines and medicines that medical experts have advised you will help to respond to a COVID-19 epidemic.**

None as at time of writing

**2. Has your agency undertaken any consultation with medical experts since January 15, 2020, regarding what numbers and types of medical equipment will be necessary to respond specifically to a COVID-19 epidemic, reducing healthcare worker infections and lowering the Case Fatality Rate? And have these consultations taken into account the latest scientific papers being released regarding COVID-19?**

Yes, the Canterbury DHB has an Infection Prevention and Control (IP&C) executive, comprising representation from the following fields:

- Infection prevention and control
- Infectious diseases
- Public Health
- General Practice
- Microbiology

This executive meets weekly, and more frequently if needed, to review and discuss all aspects of management of infectious diseases and ensuring the safety of our patients and staff. Discussion and recommendations made by the group are evidence based using the latest research and data available.

At this time, equipment used to treat other illness such as influenza are considered appropriate for treating complications as a result of COVID-19.

3. Please refer to Ministry of Health response.

### **3. Documents related to the inability to provide hospital care.**

Page 130 of the [NZIPAP](#) states:

*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.***

**1. Please provide any documents relating to the meaning of “community care” and what medical care from qualified medical workers and medical equipment and medicines will be provided to COVID-19 patients in “community care”?**

Medical care in the community will be provided by general practice and other health agencies, for those who have symptoms and are in isolation at home. There is a significant amount of information and Practice Management advice on community care in relation to COVID-19 patients on Community and Hospital HealthPathway (please see **Appendix one** attached for examples of topic areas). These are being developed and released on these platforms on an ongoing basis and are available and updated nationally on an ongoing basis.

Please also find attached as **Appendix 2** the Community Care Model for the community management of Covid positive patients.

2. **Given that recent papers and official Singapore MOH statistics show that approximately ~20% of COVID-19 admissions require oxygen treatment/ventilation, has your agency done any modelling on the number of COVID-19 patients who will likely need hospital/ICU treatment but be unable to obtain it due to hospital overload, depending on various ranges of COVID-19 case numbers? If yes, please supply documents.**

We are working on models being used in other parts of the world with local data. This is an ongoing process and these models change daily. The Ministry of Health has released extensive modelling which we will be using in coming days – this is available on <https://www.health.govt.nz/publication/covid-19-modelling-reports>; Most recent data don't support the rates for ventilation that are cited above.

3. **If it is justified that the treatment of COVID-19 patients, who would normally be cared for in ICU/hospital, is instead done by volunteer groups without medical training or advanced equipment, has your agency considered undertaking:**
  - a. **Emergency procurements of relevant medical devices and equipment listed in question 2, to at least provide these volunteer groups with medical equipment such as oxygen ventilators and;**

No, the Canterbury DHB has not considered this at this stage.

- b. **Emergency training of these unqualified volunteers in the basic care of COVID-19 patients and the use of these medical devices and equipment, in order to increase the survival rates of those unable to be cared for in medical facilities?**

No, the Canterbury DHB has not considered this at this stage.

- c. **If yes, please provide documents relating to these emergency plans.**

Not applicable

4. **What is the number of unqualified volunteers/workers available from CDEM and voluntary groups in your region available to care for patients when hospitals and other medical facilities cannot provide care? How recent is this information?**

Any CDEM volunteers will be used to support people in isolation and ensure provision of basic needs, for example food. They will not be providing clinical care. This position is current at time of writing.

5. Please refer to Ministry of Health response.

#### **4. Documents related to emergency planning for mass infection of healthcare workers.**

In a recent paper regarding admissions in a hospital, 41% of 138 hospitalized COVID-19 patients were infected in hospital (“nosocomial” infections). 29% of the 138 patients were healthcare workers.<sup>11</sup> As of February 12, two of the eight cases (25%) in the UK are healthcare workers. China’s National Health Commission has stated 1700 healthcare workers have been infected in China.

1. **Does your agency have emergency plans to replace healthcare workers as they become infected? If yes, please supply documents you have relating to such plans.**

Operating with flexible staffing models is usual practice for our hospitals. We currently have processes in place to redeploy staff and address capacity on a day to day basis. This process is in response to a number of situations, planning continues to be reviewed and updated as the situation evolves.

## **5. Expansion of test capacity.**

### **1. On average, how quickly can a test be performed from sample to result?**

Approximately 1/3 that do not have a collection time or date recorded. Of the remaining two thirds the time taken will depend on where in New Zealand the swab is collected and where it is tested. Looking solely at samples collected and tested within the CDHB the 50<sup>th</sup> percentile for TAT from collection to result is 21.22 hours and the 90<sup>th</sup> percentile is 28.74 hours.

### **2. Do plans exist to expand this capacity and what is the projected capacity increase and date by which the increase will be achieved?**

CHL has consistently been increasing capacity that is available for Covid19 samples. Currently CHL can test 2256 samples in a day if required. The greatest number that have been required to be tested in a day thus far is 1031 samples.

### **3. Do plans exist to expand this capacity and what is the projected capacity increase and date by which the increase will be achieved?**

CHL currently believe capacity will not need to increase above 2256 samples, although it can if required. This is based around modelling of expected workloads moving forwards and capacity and test delivery in other laboratories throughout New Zealand.

## **6. Diagnostic and COVID-19 surveillance criteria**

Please refer to Ministry of Health response.

## **7. Public Information campaigns**

Please refer to the Ministry of Health response.

## **7. Meetings in your region related to COVID-19 pandemic preparations.**

### **1. Since January 15, what leadership/committee meetings have occurred in your agency solely related to preparations for a potential COVID-19 pandemic?**

A readiness group convened by the Chief Medical Officer has been meeting weekly comprising:

- Infection Prevention and Control
- Infectious Diseases
- St John
- Procurement
- Community and Public Health
- Canterbury Primary Response Group
- Civil Defence (Group)
- Laboratories
- West Coast DHB
- Communications
- People and Capability
- Service continuity

2. **Since February 1, what meetings have been held that included trained medical experts, to specifically discuss the latest clinical information regarding COVID-19 cases (E.G [Lancet](#) , [NEJM](#) , [JAMA](#) ), and the projected requirements for equipment, ICU, beds, medicines and healthcare workers to respond appropriately to a potential COVID-19 pandemic, with specific consideration for the COVID-19 disease.**

As described above the IP & C executive and readiness groups have been meeting weekly, and more frequently if needed, to discuss latest information and research and recommend actions to prepare. See 1.1.

3. **Since January 15, what activities, such as additional training and simulations, have been undertaken related to preparations for a potential COVID-19 pandemic?**

Canterbury DHB has a regular program of training in infection prevention and control which is run annually in preparation for the winter influenza season. This program is considered sufficient for management of COVID-19 and has been commenced early to provide refresher training for staff.

Additionally, our infectious diseases clinicians are providing advice when requested to other clinical service areas in our hospital and to General Practice.

## **8. Emergency actions to secure your supply chains, particularly relating to medical supplies.**

*Scott Gottlieb, Former Commissioner of the U.S FDA, made a statement on February 12 to the Senate Committee on Homeland Security and Governmental Affairs on February 12, including the following:*

*About 40 percent of generic drugs sold in the U.S. have only a single manufacturer. A significant supply chain disruption could cause shortages for some or many of these products. Last year, manufacturing of intermediate or finished goods in China, as well as pharmaceutical source material, accounted for 95 percent of U.S. imports of ibuprofen, 91 percent of U.S. imports of hydrocortisone, 70 percent of U.S. imports of acetaminophen, 40 to 45 percent of U.S. imports of penicillin, and 40 percent of U.S. imports of heparin, according to the Commerce Department. **In total, 80 percent of the U.S. supply of antibiotics are made in China.***

*Taiwan has banned export of face masks. India has banned export of PPE and n95 masks. The Secretary General of the Indian Drug Manufacturers Association, which represents over 900 drug producers, has said he expects drug supplies to be disrupted from April.*

*New Zealand's medical supply chains are likely to be just as, or more vulnerable as the United States.*

*New Zealand's National Reserve Supply only stores a small range of items<sup>18</sup>, most of which are only relevant to responding to an influenza pandemic (e.g antiviral drugs and vaccines that are not effective against SARS-CoV-2), and certainly not supplies related to maintaining the general needs of your region's healthcare during supply chain disruptions.*

1. **Please provide information relating to any emergency actions, not normally undertaken, underway since January 1 2020, to secure supplies of medical equipment and supplies for your day to day healthcare provisioning obligations.**

We have special approval processes in place to manage significant demand for supplies including release of pandemic stock in line with MoH direction.

**Please note** the situation regarding the COVID-19 pandemic preparations is changing on a daily basis. We are providing this response in order to avoid any further delay in answering your original questions.

I trust that this satisfies your interest in this matter.

Please note that this response, or an edited version of this response, may be published on the Canterbury DHB website after your receipt of this response.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Carolyn Gullery', with a long, sweeping underline.

Carolyn Gullery  
**Executive Director**  
**Planning, Funding & Decision Support**



# COVID-19 Practice Management

Prepare and protect vulnerable patients

Manage and protect staff

Manage unwell patients at a distance

## Information

For health professionals

## Further information

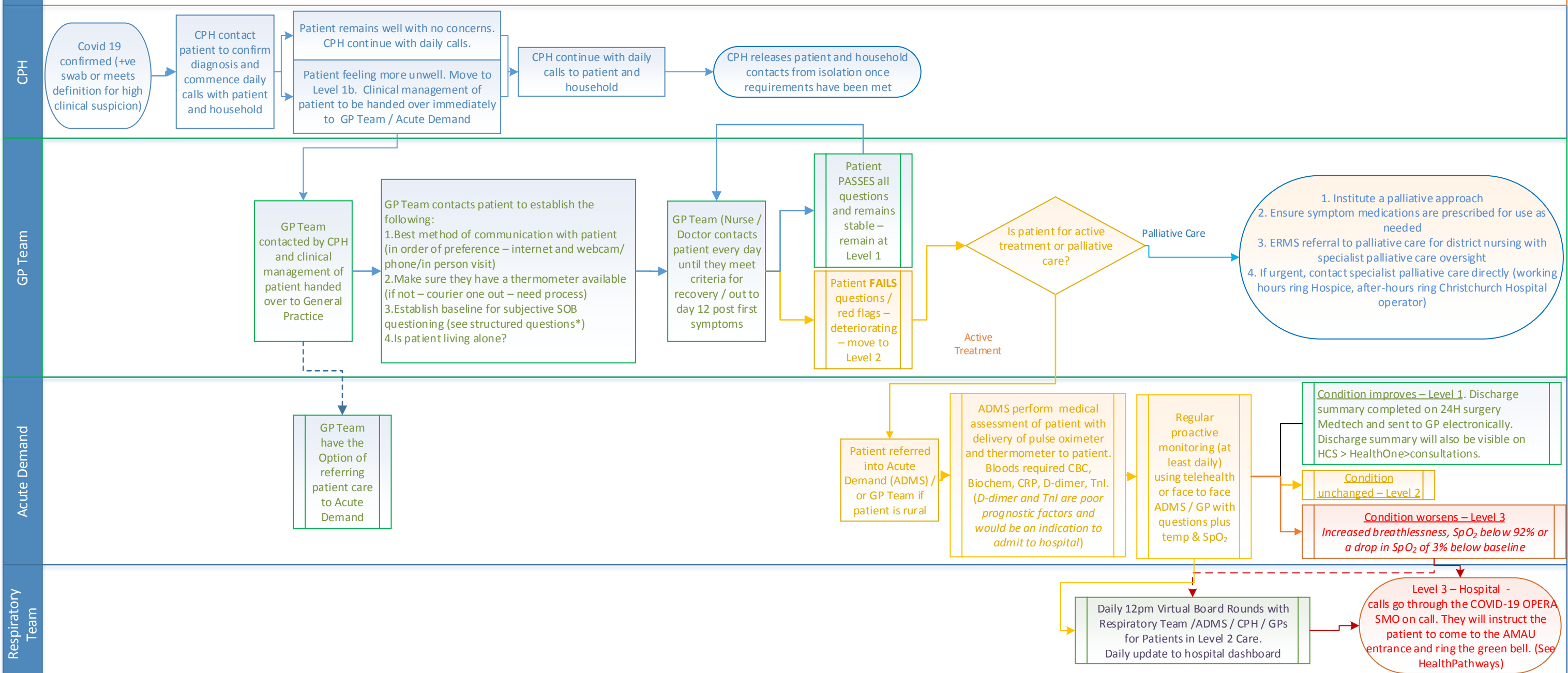
- Canterbury Primary Response Group:
  - [Coronavirus Stop! Poster A3 \[template\]](#)
  - [Novel Coronavirus COVID-19 Response: A Summary of Guidance for Practices and Patients](#)
- Health Care Home Collaborative – [Resources to Support Primary Care as Part of Our United Against Covid19 Response](#) [telehealth resources]
- Health Navigator New Zealand – [What Are Coronaviruses: Clinicians](#)
- Medical Council of New Zealand:
  - [Safe Practice in an Environment of Resource Limitation](#)
  - [Statement on Telehealth](#)
- NZ Telehealth Forum & Resource Centre – [COVID-19: Health Providers](#)
- NHMRC – [Australian Guidelines for the Prevention and Control of Infection in Healthcare](#)
- Pinnacle – [Clinician Checklist for Phone Triage](#)
- Royal Australian College of General Practitioners:
  - [Guidelines for Preventive Activities in General Practice \(Red Book\)](#)
  - [Infection Prevention and Control Standards: For General Practices and Other Office-based and Community-based Practices](#)
  - [Managing Emergencies and Pandemics in General Practice](#)
  - [Pandemic Flu Kit \(Part 1\): A Guide for Preparation, Response and Recovery](#)
  - [Pandemic Flu Kit \(Part 2\): Implementation Guide](#)
  - [Pandemic Flu Kit \(Part 3\): Operational Documents](#) [Word doc]

## **Protocols and procedures**

- The Ministry of Health – [PPE Donning and Doffing Guidance](#) [poster]
- Auckland District Health Board – [PPE Instructional Video](#) [04:35 minutes].

For patients

LEVELS OF CARE	<b>LEVEL 1a</b> <b>Remain at Home</b> Well, very mild symptoms, under 65yrs (or under 55yrs for Māori / Pacific) No other co-morbidities <b>(CPH MANAGEMENT)</b>	<b>LEVEL 1b</b> <b>Remain at Home</b> Symptomatic but otherwise well and physiologically stable, under 65yrs (or under 55yrs for Māori / Pacific) No other significant co-morbidities (if co-morbidities present move straight to Level 2) <b>(GP TEAM MANAGEMENT / ADMS AS REQUIRED)</b>	<b>LEVEL 2 – High Risk or Deteriorating</b> <b>Home / Acute Demand / Intermediate Care</b> Deteriorating or high risk patient Over 65yrs or over 55yrs for Māori / Pacific Requires a higher level of monitoring including pulse oximetry Has other co-morbidities – COPD / Immune suppression / CHF / Diabetes / Obesity (gradation of risk 30-35, >35) <b>(ADMS MANAGEMENT – GP IF RURAL OR IF GP TEAM WISH TO KEEP PATIENT)</b>	<b>LEVEL 3</b> <b>Hospital</b>
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- STRUCTURED QUESTIONS for Initial Baseline Assessment**
- A. How is their speech? – single words/short phrases/full sentences
  - B. What normal level of breathlessness with exertion: mMRC score
  - C. Questions for patient:
    - i. Are you breathing harder or faster than normal
    - ii. Are you SOB at rest
    - iii. So unwell you can't perform your day to day activities
    - iv. Do you need to lean forward to help with breathing
    - v. Is there any wheeze
    - vi. Have you or anyone in your home observed that your lips are blue

- DAILY STRUCTURED QUESTIONS (Nurse / Doctor – if video link is not available)**
- A. How is their speech? – single words/short phrases/full sentences
  - B. Temp measured by patient
  - C. Questions for patient:
    - i. Are you breathing harder or faster than normal
    - ii. Are you SOB at rest
    - iii. So unwell you can't perform your day to day activities
    - iv. Do you need to lean forward to help with breathing
    - v. Is there any wheeze
    - vi. Have you or anyone in your home observed that your lips are blue
- Any red flags, deterioration from previous 24hrs then move to Level 2. (If significant concerns then for hospital review – travel by personal car vs ambulance to be determined on a case by case basis)