20 September 2021

WHANGANUI
DISTRICT HEALTH BOARD
Te Poari Hauora o Whanganui

100 Heads Road, Private Bag 3003
Whanganui 4540, New Zealand

Nicholas Jones
NZME

Via email: Nicholas.Jones@nzme.co.nz

Tēnā koe Nicholas

Official Information Act Request – OIA 13727 ICU Capacity

On 23 August 2021, under section 12 of the Official Information Act, you requested the following information from Whanganui District Health Board (WDHB):

1. Since March 2020 and by each month thereafter, the number of fully staffed/operational ICU beds available, ICU capacity, a breakdown of all ICU staff (such as numbers of ICU nurses) and any vacancies, and how many surgeries were rescheduled or postponed/cancelled.

2. Since March 2020, copies of any reports, documents or briefings that include information about ICU capacity, including (but not limited to) in relation to Covid-19, such as contingency plans to scale up capacity.

3. Since March 2020, copies of all correspondence with the Ministry of Health regarding critical care and ICU, in relation to Covid-19, such as confirmation of current capacity and plans to scale up capacity.

The information sought in this request is to be used as part of a report by the New Zealand Herald.

Whanganui District Health Boards response:

1. Since March 2020 and by each month thereafter, the number of fully staffed/operational ICU beds available, ICU capacity, a breakdown of all ICU staff (such as numbers of ICU nurses) and any vacancies, and how many surgeries were rescheduled or postponed/cancelled.

WDHB Critical Care Unit has 6 beds. The unit takes intensive care patients, high dependency, and coronary care patients (all ages). We are not a tertiary ICU.

The unit has one negative pressure room; 3 ventilators and 1 portable ventilator, ED also has a portable ventilator. Each CCU ventilator requires a ratio of 1:1 RN and would require 2 runners and a shift coordinator; and one anaesthetist present. Attached is the ICU COVID response plan. This plan illustrates how we would escalate our capacity should we receive COVID CCU patients.

Workforce: there are 18 ICU RN competent nurses; and 6 new staff that are yet to be ICU trained; we also have 9 identified nurses that could be upskilled. Across the community there are 22 former ICU competent registered nurses. As far as staff vulnerabilities, we have 9 nurses that are unable to look after COVID patients (due to health concerns and fit test results).
Vacancies: 1.1 fte which has been advertised and 1.2 fte secondments to the end of November 2021.

Date (month/year)	Fully staffed operational ICU beds	ICU Capacity	Staff Vacancies	*Surgeries postponed/cancelled
March 2020	3	3	0	74
April 2020	3	3	0	51
May 2020	3	3	0	0
June 2020	3	3	0	0
July 2020	3	3	0	0
August 2020	3	3	0	7
September 2020	3	3	0	0
October 2020	3	3	0	0
November 2020	3	3	0	0
December 2020	3	3	0	0
January 2021	3	3	0	0
February 2021	3	3	0	0
March 2021	3	3	0	0
April 2021	3	3	3.4 FTE	0
May 2021	3	3	3.4 FTE	0
June 2021	3	3	1.1 FTE	0
July 2021	3	3	1.1 FTE	0
August 2021	3	3	1.1 FTE	97

*Note that this is COVID movement only; data not kept for other months (which are business as usual).

2. **Since March 2020, copies of any reports, documents or briefings that include information about ICU capacity, including (but not limited to) in relation to Covid-19, such as contingency plans to scale up capacity.**

MoH Reporting: Each day the CHRIS (Australia and New Zealand Critical Health Resource Information System) is updated with the following information:

Patient:
- ICU patients
- HDU/ICU2 patients (under the care of ICU)
- Confirmed Covid '+' cases in your ICU/HDU
- Confirmed Covid '+' cases in your ICU requiring invasive ventilation
- Confirmed Covid '+' cases admitted to your hospital

Treatment:
- Invasive ventilation
- Non-invasive ventilation
- Renal replacement therapy
- ECMO

Availability:
- Physical ICU capable beds
- Presently open staffed and equipped ICU bed spaces (including vacant and occupied ICU beds)
- Patients awaiting admission to ICU
- Patients awaiting admission to HDU/ICU
- Critical care medical and nursing staff unavailable due to Covid exposure or illness

Stock:

- Spare ventilators
- Spare dialysis/filters
- ICU PPE stock (low <3 days, medium up to 7 days, ok = more than 7 days)

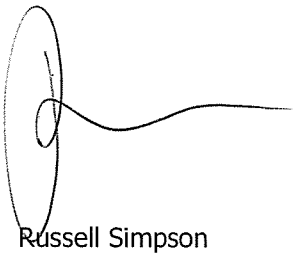
Latest ICU response plan attached. See **Appendix 1.**

3. Since March 2020, copies of all correspondence with the Ministry of Health regarding critical care and ICU, in relation to Covid-19, such as confirmation of current capacity and plans to scale up capacity.

The Whanganui District Health Board decline to answer this question based on substantial research and collation (particularly during COVID), under Section 18 (f) (iii), (iv), (v), (vi).
(iii) the amount of documentation to be looked at
(iv) the work time involved
(v) the nature of the resources and the personnel available to process requests for information
(vi) the effect on other operations of the diversion of resources to meet the request

Should you have any further queries about the above information, please contact our OIA co-ordinator Anne Phoenix at anne.phoenix@wdhb.org.nz

Ngā mihi



Russell Simpson
Chief Executive

Appendix 1. WDHB Whanganui Hospital ICU COVID-19 Response Plan

WHANGANUI
DISTRICT HEALTH BOARD
Te Poari Hauora o Whanganui

Whanganui District Health Board

Whanganui Hospital
ICU
COVID-19 Response Plan
(WDHB Response Plan Section A.2)

COVID-19 Whanganui Hospital ICU High Level Plan

15 August 2021

WHO PERIOD	PANDEMIC ALERT PERIOD			PANDEMIC PERIOD	POST PANDEMIC PERIOD
WHO PHASE	3	4	5	6	POST PANDEMIC PERIOD

WDHB Whanganui Hospital ICU High-level Plan

1

TRIGGERS
- Level 4 lockdowns
- resurgence of delta variant

OBJECTIVES
- Be prepared.
- Trial and assess video conferencing to replace visiting.
- Preparation / adoption of National Triage Plan for patients needing ICU during pandemic.
- Increase available pool of staff in the event of pandemic.

STRATEGIES
- Training for donning and doffing of Personal Protective Equipment (PPE).
- Planning red and green flow of patients.
- Design structure of rosters.
- Procure re-usable PPE.
- Procure respirator masks.
- Fit testing of PPE masks.
- Dedicated leadership time for planning.
- Educate non-ICU doctors and nurses in respiratory support & PPE.
- All staff wear masks.
- Lock down ward.
- No unauthorised visitors.

ASSUMPTIONS
- Planning documents distributed to teams are ready.

2

TRIGGERS
- 1 – 5 COVID (suspected or actual) patients admitted to general ward area with potential to require ICU bed and/or 1 ICU.

OBJECTIVES
- Minimise disruption to hospital / ICU services – stay as close to BAU for as long as practicable and safe.

STRATEGIES
- CHRIS data daily completion.
- Maintain permanent vacancy in one isolation room.
- Support management of patients in the high-dependency ward to reduce risk of admission to ICU.
- Triage COVID positive patients to ICU-suitable and non-ICU-suitable escalation streams (on admission per Treatment Escalation Plan [TEP])
- Early coordination with palliative care teams for patients not suitable for ICU escalation.
- Cordon off ICU area.

ASSUMPTIONS
- DHB EOC and IMT
- Infection Prevention and Control measures are effective.
- Supply of adequate PPE is maintained.
- Public Health Technical Advisory
- Belverdale off-site surgery discussions
- Ethical framework shared with all HoDs.

3

TRIGGERS
- 5-15 COVID (suspected or actual) patients admitted to general ward area and/or 2 ICU.

OBJECTIVES
- Minimise staff risk of cross infection.
- Minimise PPE associated injury.
- Prevent hospital acquired infection.
- Minimise disruption to normal care of non-COVID patients.
- Prepare for escalation and decanting of non-COVID patients.

STRATEGIES
- All potential admissions to the ICU are to be discussed with ethics team for approval.
- ICU lock down: no visitors/non-essential staff.
- Video conferencing for all ICU visits.
- Stream & cohort patients: COVID patients to remain in ICU; non-infected, non-suspect patients to be cohorted in PACU & theatre
- Redeploy and 'bank' staff.
- Support management of patients in the ward to reduce risk of admission to ICU.
- Triage COVID positive patients to ICU-suitable and non-ICU-suitable escalation streams. (Ethics teams TEP)
- Early coordination with palliative care teams for patients not suitable for ICU escalation.

ASSUMPTIONS
- Supply of adequate PPE is maintained
- Other health facilities will not be accepting ICU level transfer patients.

4

TRIGGERS
- 15+ admitted to general ward and/or 2+ to ICU.

OBJECTIVES
- Maintain focus on life preservation and prevention of disability.
- Triage to target resources to activities that will deliver the greatest quality of life (QALY) gains (ethical framework).

STRATEGIES
- All potential admissions to the ICU are to be discussed with ethics team.
- Increase acute admission criteria/aggressive triage criteria (e.g. Red Cross) for both hospital admission and Community Based Assessment Centre.
- Stream & cohort patients: COVID patients to remain in ICU; non-infected, non-suspect patients to be cohorted in PACU & theatre
- Utilise non-core ICU staff.

ASSUMPTIONS
- As per 'Level 3' plus
- Ethical decisions on which patients to treat will be required.

- STRATEGIES
- As above plus:
- Utilise Theatre and then PACU as ICU locations if required. Red and green ICU zones.
- Staff welfare and workforce capability is maintained

Recovery

OBJECTIVES
- Ensure staff well-being.
- Ensure Community knowledge.

STRATEGIES
- Re-grade essential clinics and prioritise urgent cases first.
- Review facility use and adapt to community need maintain virtual clinics as able.
- Clean Red zones and remodel to business needs.

ASSUMPTIONS
- MoH direction will be given.
- EOC remains as key lead. IMT at hospital to align to EOC operations (if EOC is whole of region).

COVID-19 Clinical Algorithm 19.08.21.c

GOALS OF NEW ZEALAND PANDEMIC PLANNING

GOAL 1
Human
Minimise the impact of the disease and mitigate the effects on the people of NZ.

GOAL 2
Social
To enable society to continue to function as normally as possible during and after a pandemic.

GOAL 3
Economic
To minimise and mitigate the economic consequences of a pandemic on NZ

COVID-19 WHO Information

- 0.5%-5% (estimated) of Population affected if there is sustained community transmission
- 80% of cases will be mild requiring minimal medical intervention.
- 15% will be "severe" Requiring Oxygen (ward level care)
- 5% will require ICU level Care
- 0.7% - 3.8% Case fatality rate - increasing in those over 70yrs and those with co-morbidities
- Pregnant women do not appear to have a higher rate of infection or disease severity, and vertical transmission has not been reported.
- Minimal Paediatric Cases are expected with very few Severe.
- The majority of hospital admissions will be Adult Internal Medicine and Respiratory Services

Reference: Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19): 16-24 February 2020

Linkages and Key Supporting Elements

- National Hospital COVID-19 Escalation Framework
- National Alert Regional Forensic and Rehabilitation Inpatient Service COVID-19 Service Response Plan
- WDHB Response Plan COVID-19
- CIMS
- IP & C Plan
- Hospital lock down procedure
- Security plan
- Building and facilities management plan

WHANGANUI
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WHANGANUI HOSPITAL ICU COVID-19 RESPONSE PLAN

1. Overview

1.1. Emergency Operations Centre (EOC)

The WDHB is ready to activate an Emergency Operation Centre (EOC) and Coordinated Incident Management System (CIMS), situation dependant. The CIMS structure enables personnel to respond effectively to incidents through appropriate coordination across functions and organisations – both vertically and horizontally. Legislation will dictate lead agency.

1.2. DHB Operations – Incident Management Team (IMT)

The Hospital IMT follows CIMS and provides the linkage between the EOC and Hospital Integrated Operations Centre (IOC). This team will receive requests, distribute information so there is a two way information channel, provide direction and support to the Hospital / DHB.

The IMT will produce reports, oversee the action plan and ensure external requests are channelled to the correct ELT member, and disseminated within the requested timeframe.

1.3. Communications

All communications will be managed by the IMT and/or EOC to ensure that messaging is current, accurate and timely. The DHB intranet site will be updated so information is easily accessible, accompanied with daily key messages.

2. Admission of COVID-19 patients

2.1. Threshold for admission

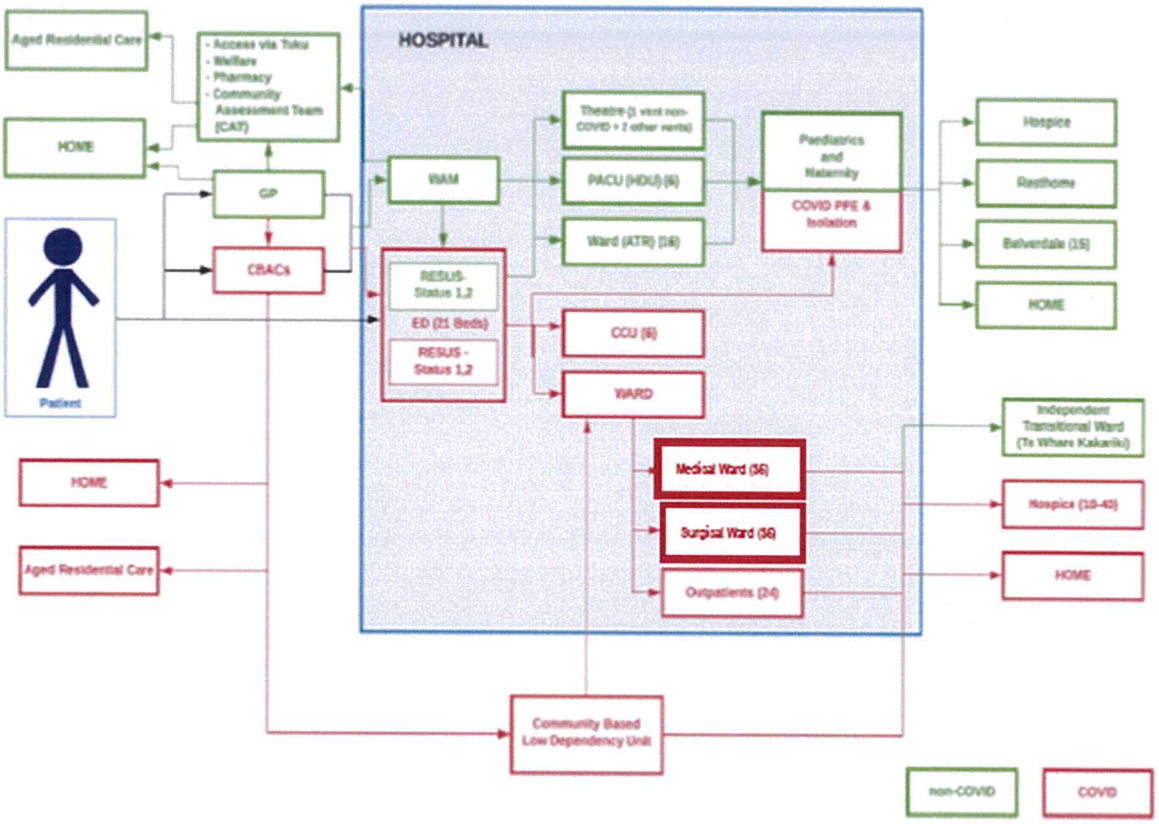
2.2. Threshold for admission

The decision to admit suspected or confirmed COVID-19 cases will be based on clinical need. (**Appendix 9.** Clinical Algorithm.) Where at all possible patients should return home. At Response Levels 1 and 2 patients who do not require admission will be followed up in the community. Patients who are not admitted must be provided with information on how to self-care at home and when and how to seek further medical attention.

The MoH website provides up to date information. There is potential for this to change daily as we move through the phases. It is essential staff ensure they are providing the most up to date information. Information is also on the intranet for staff to follow. **http://intranet/news/page/covid-19-updates/m/0/**

There will be a need to ensure the hospital remains at 50% - 75% or below capacity to enable a response to COVID-19, at Green and Yellow Alert levels.

2.2 Patient Flow – Primary Care, Hospital and Community



2.3 Patient flow through hospital COVID; non COVID pathway is via WAM.

1. Present for assessment at the rear of ED; assessment and treatment in either a single room, negative pressure room or resus in ED; backroom become an isolation area to assist with containment.
    a. Applying PPE and precautions in ED prior to transfer, and during transfer (staff and patient)
2. Designated ward
    a. Medical Ward; then if further beds required Surgical Ward, for a total of 70 beds. From here alternative wards will be identified.
    b. ICU – initially negative pressure room (1 patient), if further ICU / HDU required for COVID positive activate level 3 [Red and Green patient areas will be required].

Note: High level plans for ED, Hospital Inpatient, Mental Health Inpatient and Maternal, Child and Youth Inpatient are found in Appendices 6 - 9.

In-patient areas – aligns to above flow pathway

Area	Response 1	Response 2	Response 3	Response 4
	Business as usual (BAU)	**Inpatients 1 - 5 cases and/or 1 ICU**	**Inpatient 5-15 cases and/or 2 ICU**	**Inpatients 15+ cases and/or 2+ICU**
	Preparedness:	**BAU processes plus:**	**Response 1 plus:**	**Response 2 plus:**
WAM/ED/ICU Front door	▪ ED ▪ WAM	▪ CBAC ▪ Phone in prior to attendance ▪ Community Response ▪ Restricted front door ED/WAM	▪ Two resus bays – one COVID/ one non-COVID ▪ Room 15: negative pressure ▪ Close off AAU and room 16	▪ Emergency department COVID only* exception for trauma patients/resus. Triage is outside backdoor of ED (ED plan) ▪ WAM utilised as non-COVID ED, with waiting area
Patient Flow: Positive COVID-19	▪ ED back door	1. ED single room or negative pressure 2. Medical ward isolation or single room 3. CCU negative Pressure	1. Portable plain film Chest X-ray radiology in ED 2. To COVID ward 3. CCU as COVID ventilation unit	
Patient Flow: Negative COVID-19	▪ Resus ▪ Negative pressure room ▪ Side door	• As per current flow	1. WAM 2. Bloods taken in WAM 3. ED radiology (plain film) or main department radiology department for scanning 4. Transfer to non-COVID ward 5. Ventilated patients in PACU	
Theatre		▪ Reduced electives priority 1 only, acutes/trauma/caesars/cancer only ▪ Medical infusion in SDU	▪ Reduced electives priority 1 only, acutes/trauma/caesars/cancer only (review cancer surgeries on case by case) ▪ Medical infusion in SDU ▪ Ventilated negative patients in vacant theatre	▪ Defer cancers
Outpatients	▪ Assessment of Outpatients area	▪ Reduced services Priority 1 only	▪ Reduced services Priority 1 only ▪ Facility become ward COVID if required	▪ Outpatients to become ward COVID after Surgical Ward.
Wards	▪ Environmental scan Medical ward – side rooms and negative pressure room	▪ Current state low occupancy ▪ Planning for potential COVID ward affecting medical and surgical wards (attached) ▪ All other wards BAU	▪ Dedicated COVID ward operating ▪ Begin repurposing OPD and alternative locations ▪ Protect Maternity and Paeds ▪ ATR to remain clean	▪ Consider opening Surgical Ward (70 beds) ▪ AT&R remain clean ▪ Transitional independent ward Te Whare Kākāriki (to aid patient flow)
Offsite support	▪ GP engagement	▪ Planning for low dependency unit ▪ GP engagement ▪ Hospice	▪ Explore other facility options. ▪ Operationalise low dependency unit	▪ Explore other facility options. ▪ Low dependency unit active
Radiology	▪ Appointment only	▪ Reduced services priority 1 only ▪ Wait area in cars with text	▪ Positive COVID scanning plain film on portable x-ray ED ▪ Negative ED x-ray room ▪	▪ Batching of images via CT ▪ MRI and USS reduced to LPS ▪
Pharmacy	▪ Community Pharmacy from hospital dispensary ▪ Prescription delivery from hospital	▪ Priority to ICU ED and COVID 19 positive ward ▪ Reconfigure pyxis machines for ward change	▪ Pyxis profiling for COVID positive patients	▪ Core dispensary team preserved

2.3 ED Triage criteria

Critically ill patients with a clinical suspicion of COVID disease will be assessed by a team of clinicians using a Clinical Priority Sheet. This assessment takes into account patient co-morbidities, functional status, previous end-of-life discussions, blood results, SOFA score and frailty index.

Patients will be triaged to either ICU for full ventilation, or to HDU for High Dependency care, or to the Covid ward for routine care. After discussions with the patient and their family/whānau, patients will be assessed by a team of physicians to come to a balanced clinical decision.

2.4 Ward placement for adult patients

Patients with confirmed or suspected COVID-19 who require admission should be managed in single rooms whenever possible. A negative pressure room is *preferable* for all cases and is *essential* for patients who require aerosol generating or high risk procedures. A dedicated ward has been nominated to receive COVID-19 patients, probable (side room isolation precautions); and once confirm positive the ward that can accommodate 35 patient and has the ability to contain areas of the ward through decreasing ward capacity.

Medical Ward, use single room (2 negative pressure) for probable cases; confirmed, use room 1, 2, 3, or 4 (all have toilets and doors for isolation).

2.5 Patients requiring HDU and ICU

The existing CCU environment is open plan (6 bed spaces) with one negative pressure room. The unit has three ventilators plus a portable vent in ICU and one in ED.

Intubation is particularly associated with high risk of transmission. It should be carried out in a negative pressure room with meticulous PPE (including face shield visor over N95). ANZICS recommendations state that ambu-bag pre-oxygenation should not be used. Oxygen should be given by non-rebreather. Intubation drugs should be given via a drip with intubating team standing away from the head of the bed. Intubation is then carried out after patient has become apnoeic.

2.6 Management of COVID ICU/HDU patients in CCU

Patients in ICU will be treated according to the updated "Management of ARDS" and "Management of COVID" guidelines, provided by Wellington ICU. An anaesthetist will be present 24 hours a day to provide ongoing treatment, supported by nursing staff and junior doctor support as needed. Theatre 4 will have a dedicated ventilator for any COVID positive patients that require emergency surgery.

2.7 Management of non-COVID patients in PACU/theatre

When ICU turns into a COVID ward, remaining ICU/HDU patients will be transferred to PACU to receive their High Dependency care. PACU staff, with the support of trained ICU nurses, will provide patient care.

The On-Call Physician and Anaesthetist will provide SMO support. Management may include vasopressor infusions, High flow O2 or BIPAP support, and other routine medical care. The On-Call Anaesthetist, assisted by trained nursing staff, will provide ventilation for Non-COVID patients, in theatre. Emergency Surgery will continue to be provided in one of the theatres.

2.8 ATR Ward

Patients on the AT&R ward are at high risk of severe illness from COVID-19 and therefore patients with suspected or confirmed COVID-19 cannot be placed on this ward. At Response Level 1 and 2, the ward will function as business as usual.

At Response Levels 3 and 4 the AT&R wards will need to be prepared to take non-COVID adult medical and surgical patients.

Strict infection control policies and cleaning will be followed. For management of visitors, please refer to the national visitors' policy.

Dedicated entry to AT&R will be via the external door.

2.9 Maternity patients

Pregnant women with COVID-19 and not in labour must not be admitted to the maternity ward due to the risk to other pregnant women and their babies, and the medical nursing needs of COVID-19 patients.

Pregnant women who are not in labour should be managed as per other adult inpatients with admission to Medical ward with Medical care. Pregnant women should not be cohorted if at all possible.

Pregnant women with COVID-19 who are in labour will be managed in delivery suite, recommended PPE and cleaning precautions will be taken, and caesarean section can be done in theatre as per usual process for patients requiring contact and airborne isolation, including recovery in theatre.

2.10 Paediatric inpatients

Children with COVID-19 who do not require HDU/ICU level care will be admitted to single rooms if they are not for direct transfer to Wellington Hospital or Starship Hospital. Paediatric COVID-19 cases are likely to be difficult to clinically differentiate from other paediatric respiratory infections. If there are high numbers of paediatric respiratory presentations in the setting of sustained transmission of COVID-19 in the community (Response Levels 3 and 4) additional bed capacity outside of the paediatric ward will need to be found.

For children with COVID-19 it is more than likely that the adults in the family would be unwell also and strict protocols for carers visiting the ward will need to be in place. If parents or caregivers also require admission it may be appropriate for them to be admitted to a room with their child on the infectious ward (to create a bubble with one carer).

2.11 Transporting patients with COVID-19 within the hospital

Patients with COVID-19 can be transferred within the hospital, including to radiology, as per usual Isolation Precautions policy and pandemic guidelines, including cleaning requirements after the patient leaves.

2.12 X-ray, CT or MRI

All symptomatic patients requiring radiology will be scanned on the portable x-ray machine in the Emergency Department. There is a portable USS and x-ray machine in ED. If additional diagnostic procedures are required in the radiology department recommended PPE and cleaning precautions will apply.
The plain film unit at the rear of the emergency department will be maintained as a clean facility for NON-COVID patients.

3. Staffing welfare and capacity

3.1. Overview

At all Response Levels, staff need to be provided with accurate and consistent information on the current situation and reassurance that planning considerations are prioritising their safety. (Supported by People and Culture, policies referenced in 'Supporting Documents').

3.2. Workforce

(N = Nursing; H = HCA; AT = Anaesthetic Tech; doctors)

CCU - COVID based on 3 ventilators and 3 HDU beds + 6 telemetries							PACU- Non-COVID 1 ventilator and 3 PACU beds (2 available vents for OT)					
		N	HCA	AT	Doctor				N	HCA	AT	Doctor
Mon	am	5	1	0	1		Mon	am	2	1	1	1
	pm	5	1	0	1			pm	2	1	1	1
	noc	5	1	0	1			noc	2	1	1	1
Tues	am	5	1	0	1		Tues	am	2	1	1	1
	pm	5	1	0	1			pm	2	1	1	1
	noc	5	1	0	1			noc	2	1	1	1
Wed	am	5	1	0	1		Wed	am	2	1	1	1
	pm	5	1	0	1			pm	2	1	1	1
	noc	5	1	0	1			noc	2	1	1	1
Thu	am	5	1	0	1		Thu	am	2	1	1	1
	pm	5	1	0	1			pm	2	1	1	1
	noc	5	1	0	1			noc	2	1	1	1
Fri	am	5	1	0	1		Fri	am	2	1	1	1
	pm	5	1	0	1			pm	2	1	1	1
	noc	5	1	0	1			noc	2	1	1	1
Sat	am	5	1	0	1		Sat	am	2	1	1	1
	pm	5	1	0	1			pm	2	1	1	1
	noc	5	1	0	1			noc	2	1	1	1
Sun	am	5	1	0	1		Sun	am	2	1	1	1
	pm	5	1	0	1			pm	2	1	1	1
	noc	5	1	0	1			noc	2	1	1	1

Commentary:

- PACU has 6 bed bays but only has physical space for 4 ventilated/HDU patients as their care requirements are greater than PACU patients.
- The above roster model for PACU is for 1 vent and 3 HDU patients, this can be changed to 2 vents and 2 HDU patients but would require an extra AT per shift. OT currently has 7 ATs and one trainee AT that could complete their training quickly if necessary. ATs cannot manage patients on ventilators independently, they will need to be supported by a ventilator competent CCU nurse and have some oversight by an anaesthetist.
- There has been agreement that if we needed to progress to this model, one anaesthetist would be rostered to cover CCU and PACU in addition to the anaesthetists in OT completing acute surgeries.
- While working to this model, CCU would also roster 12hr CNC shifts for oversight, query whether PACU would also require this additional support.
- The charge nurse manager holds the training records for those that are ventilator competent.

3.3. Preventing staff from becoming infected

At all Response Levels, staff will be given education sessions to ensure correct and safe use of PPE. PPE videos and information are available on the intranet for all staff and partners in care to follow.

All staff, clinical and non-clinical, are strongly advised to receive the annual influenza vaccination. Healthcare workers are a priority group to receive the COVID-19 vaccination.

If staff become unwell with respiratory symptoms, it is important that they do not come to work until advised by Occupational Health. Staff should contact Occupational Health or their GP for assessment and advice as soon as possible after symptoms develop.

3.4. Managing and supporting staff

Staff should be encouraged to consider what contingencies they can make to allow them to continue to come to work if other family members or dependents are impacted by COVID-19, for example school closures.

If there is sustained community transmission, then staff will be at risk of acquisition of COVID-19 outside of the hospital. At this point it would be desirable to establish a service to provide early and appropriate advice and testing for staff who may have symptoms of COVID-19.

3.5. Monitoring and reporting staff availability

To ensure that best use is made of the available staff, there is a dedicated database, aligned with TrendCare, to track the numbers and type of staff off work and if COVID-19 is the likely reason for absenteeism.

People and Culture have developed a database and are collecting reasons for sick calls and are informing daily to EOC via logistics, and Integrated Operations Centre each day. This data is to be collected by line managers.

A staff survey will gather information on workforce and where ability to work will be impacted by changing alert levels (includes schools, health issues, and dependants).

3.6. Contractual and employment issues

It is expected that the provisions of the legislation, regulations, employment agreements, policies, and contracts governing employee/employer relationships will fully be observed. However, some changes to roles and working practices may be required to:

- respond to the health needs of a large number of people with COVID-19
- continue providing essential health services in an environment characterized by a large increase in demand for services, and a potential reduction in staff numbers
- minimise the spread of infection between staff.

Such changes may include:

- re-assigning staff from services which may have been deferred, to assist with inpatient activity
- altering roster systems, etc to make the best use of available staff and to provide the best alignment between resources and demand; and to better enable staff to balance work needs and urgent family needs
- deferring leave, conference attendance, training etc.

Specific staffing groups may need to be asked to assist in ways outside of their usual daily roles. Allied Health staff could be helpful in supporting medical procedures and interventions and also working in community settings to avoid admissions. Some management, clerical and support staff have clinical qualifications and could be assigned to assist in their areas of specialty.

Others could be assigned to assist with the operation of the IOC and associated functions.

Other staff with clinical background are a further resource with a wide range of experience and in many cases, extensive networks with appropriate organisations.

All staffing capabilities will be considered for redeployment. Flexibility will be required.

3.7. Supporting Documents

- Whanganui DHB On Call Roster
- Whanganui Working from home guidelines
- WDHB Acute and Forensic Mental Health Inpatient plan
- Local Business Continuity Plans and Pandemic Plans (K:/Coronavirus/BCPs)
- WDHB Working at Home Health and Safety Information and Checklists (see WDHB People and Culture intranet page)
- A Guideline for temporarily working from home during our COVID-19 response
- Primary Care and Community Response Plan
- National ICU Plan
- Ethics Framework

Governance documents

- Whanganui DHB Pandemic Plan 2019 – 2022
- Whanganui DHB COVID-19 Hospital Pandemic Guidelines (reviewed August 2021)
- Whanganui DHB COVID-19 Response Plan (reviewed August 2021)
    - Section A: Hospital Response plans
        1. Emergency Department
        2. **ICU**
        3. Hospital Inpatient (with Maternal, Child and Youth)
        4. Hospital Mental Health Inpatient
    - Section B: Primary and Community Response

4. Appendices

Appendix 1. COVID-19 ARDS Management 2020 Whanganui Hospital

Appendix 2. ICU Prio Sheet

Appendix 3. COVID-19 Oxygenation & Ventilation

Appendix 4. COVID-19 Circulation & General ICU Cares

Appendix 5. ICU Nursing Cares & Management

Appendix 6. WDHB Whanganui Hospital ED high-level plan

Appendix 7. WDHB Whanganui Hospital Inpatient high-level plan

Appendix 8. WDHB Whanganui Hospital Mental Health high-level plan

Appendix 9. WDHB Whanganui Hospital Inpatient Maternity/Delivery & Paeds/SCBU high-level plan

Appendix 10. Clinical Algorithm

Conservation of oxygen

- Avoid hyperoxia in patients receiving supplemental oxygen.
- Aim for SpO2 92-95%, although the target may be lower in some patient groups. Aim for SpO2 > 88% for those with hypoxic respiratory failure
- Avoid high flow oxygen delivery devices (no survival benefit compared to conventional oxygen therapy, and the risk of environmental viral contamination may be higher.) Ideal < 5l/min
- Eliminate waste by ensuring oxygen flowmeters are switched off when not attached to patients.

Non-invasive Ventilation devices

- Use of CPAP or NIV should be confined to short periods using a well-fitting interface (full face mask or helmet) as a bridge to invasive mechanical ventilation.
- For some patients, NIV will form the appropriate ceiling of care. In these cases, due to the risk of environmental viral contamination, it is preferable to deliver NIV in an isolated environment (negative or neutral pressure room).
- Use of NIV following extubation in the recovering patient should be informed by repeat testing of COVID-19 status.
- If possible, an antiviral filter should be located on the expiratory limb of any NIV device.
- Wellington not advocating use of NIV unless resources overwhelmed. Risk of aerosolization so staff should wear PPE. Use HFNP in a negative pressure room for hypoxic respiratory failure and once this is exhausted intervene with intubation if appropriate.

Location

- Negative pressure or neutral pressure room facilities are often limited in number. It may be necessary to cohort ventilated patients in areas on units and wards.
- Single occupancy rooms could be reserved for those receiving NIV (as above) or for non-COVID-19 patients, or for those with suppressed or compromised immune systems.

Sedation

- Follow established protocols for sedating critically ill patients with hypnotic infusions. (propofol or morphine/midazolam)
- For patients ventilated on an anaesthetic machine, low dose (MAC 0.2-0.5) inhalational anaesthesia may be used to maintain sedation with a volatile agent in a low-flow (circle) system.

Neuromuscular Blockers

- Consider using an infusion in early moderate/severe ARDS[1] eg. atracurium 0.3-0.6mg/kg/hr

Ventilation

- Low tidal volume ventilation (≤ 6ml/kg ideal body weight[2], plateau pressure <30cmH2O)

- PEEP: use higher PEEP for patients with mod-severe ARDS. Individual titration recommended. Mean PEEP levels in 'High PEEP' groups in randomised trials was approximately 15 cmH2O on day 1
- Ensure use of an antiviral filter within the circuit or placed on the expiratory limb or ventilator exhaust. Note that filters represent an airflow obstruction risk when saturated and routine exchange is advised.
- Use in-line suction catheters where possible.
- Avoid inadvertent ventilator circuit disconnections by ensuring all connections are 'tight.'
- Manual ventilation, or 'hand-bagging' is not advised.
- Ensure the endotracheal tube is clamped during any planned circuit disconnection, eg switching between ventilators, replacing the antimicrobial filter, or inserting a bronchoscope into the tube.
- Nebulisers should be confined to use within a closed ventilator circuit.

Fluid Management

Conservative – Hartmanns 60-80mls/hr

Blood products

Avoid unless absolutely necessary

Prone positioning

- Recent experience with COVID-19 in Italy suggests a beneficial response to prone positioning.
- Utilising prone positioning to improve oxygenation is advised in patients failing conventional supine ventilation.
- ≥ 12hrs/day in mod/severe ARDS
- Development of a 'proning team' is advised to improve efficiency.

Corticosteroids

- use in COVID-19 is not advised.

Nutrition

- Enteral feeding where possible. To start day 2 post intubation (? discuss with dietician)

Thromboprophylaxis

- Flowtrons for all patients
- Prophylactic clexane 40mg sc od (renal failure 20mg od)

Cardiac arrest

Identify as early as possible any patients with a COVID-19 like illness, who are at risk of acute deterioration or cardiac arrest. Take appropriate steps to prevent cardiac arrest and avoid unprotected CPR. Equipment must be made readily available to protect staff during resuscitation attempts. It is acknowledged that this may cause a brief delay to starting chest compressions, but the safety of staff is paramount.

- Appropriate PPE must be worn as with aerosol-generating procedures. Facemask ventilation should be avoided where possible.
- Compression-only CPR is advised until airway-experienced personnel are available.

DNAR status and ceilings of care

- Routine practice should include discussion and documentation of DNAR status and appropriate limits of effective therapy, on admission to the hospital.
- Wellington advocating early goal of care discussion on entry to the hospital

Appendix

1. ARDS severity grading using PaO2 (mmHg)/FiO2 (fraction) eg. 100mmHg/0.5 = 200
    a. Mild 200-300
    b. Moderate 100-200
    c. Severe <100
2. Ideal body weight:
    a. Male = 50 + 2.3 x ((height cm/2.54)-60)
    b. Female = 45.5 + 2.3 x ((height cm/2.54)-60)

See guides attached re prone positioning and CPR

Reference

ICS/FICM Guidelines on the management of ARDS ics.ac.uk

Appendix 2. ICU Prio Sheet – 3 pages

Documentation regarding Critical Care access / COVID-19 – in case of limited resources

Patient

Team assessing:
SMO 1_____
SMO 2_____
Others/eg RN _____
Admission Date:_____
Date:_____Time:_____

A: current EWS/condition: need for ICU treatment now?

SaO2 ____% on ____ L O2 Resp Rate ____/min EWS _____ BP_____

B: Potential for successful treatment:

Exclusion Criteria (do not admit to ICU)

Severe cogn. Impairment ☐

Advanced neuro. disease ☐

Metastatic malignancy ☐

Advanced & irreversible immunocompromised ☐

Advanced/endstage organ failure ☐ _____ (heart/lung/liver/kidney)

XXX

YYY

TBA

Age: _____

Comorbidities
Hypertension ☐
Cardiovasc disease ☐
Diabetes ☐
Chronic lung disease ☐

Other: _____
_____

General health status/ performance (use **one** of the scores below, see backside)

Clinical Frailty Scale: _____ (1 – 9)

ECOG score:_____ (1 – 4)

Prognostic cores/markers (use eg MD calc)

SOFA score _____

MuLBSTA Score _____ = Mortality _____%

D-Dimers:_____

Lymphpcyt.: _____

Patent factors, ethical considerations, patient and family wishes

C: Result / Assessment
For ICU ☐ **For Med. Ward** ☐ **Other** ☐

D: Re-Assessment Date:
Progress: _____ → **Continue** ☐ **or Change Therapy** ☐
as follows:_____

Clinical Frailty Scale

1 Very Fit - People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.

2 Well - People who have no active disease symptoms but are less fit than category 1. Often, they exercise or are very active occasionally, e.g. seasonally.

3 Managing Well - People whose medical problems are well controlled, but are not regularly active beyond routine walking.

4 Vulnerable - While not dependent on others for daily help, often symptoms limit activities. A common complaint is being "slowed up", and/or being tired during the day.

5 Mildly Frail - These people often have more evident slowing, and need help in high order IADLs (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

6 Moderately Frail - People need help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.

7 Severely Frail - Completely dependent for personal care, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).

8 Very Severely Frail - Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

9 Terminally Ill - Approaching the end of life. This category applies to people with a life expectancy <6 months, who are not otherwise evidently frail.

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In **moderate dementia,** recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia,** they cannot do personal care without help.

Grade	ECOG
0	Fully active, able to carry on all pre-disease performance without restriction
1	Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work
2	Ambulatory and capable of all selfcare but unable to carry out any work activities. Up and about more than 50% of waking hours
3	Capable of only limited selfcare, confined to bed or chair more than 50% of waking hours
4	Completely disabled. Cannot carry on any selfcare. Totally confined to bed or chair
5	Dead

SOFA Scale

Variable	0	1	2	3	4
PaO2/FiO2 mmHg	>400	≤ 400	≤ 300	≤ 200	≤ 100
Platelets, x 10^3/µL ($x 10^6$/L)	> 150 (> 150)	≤ 150 (≤ 150)	≤ 100 (≤ 100)	≤ 50 (≤ 50)	≤ 20 (≤ 20)
Bilirubin, mg/dL (µmol/L)	<1.2 (< 20)	1.2-1.9 (20 – 32)	2.0-5.9 (33 – 100)	6.0-11.9 (101 – 203)	>12 (> 203)
Hypotension	None	MABP < 70 mmHg	Dop ≤ 5	Dop > 5, Epi ≤ 0.1, Norepi ≤ 0.1	Dop > 15, Epi > 0.1 Norepi > 0.1
Glasgow Coma Score	15	13 – 14	10 – 12	6 – 9	< 6
Creatinine, mg/dL (µmol/L)	<1.2 (< 106)	1.2-1.9 (106 – 168)	2.0-3.4 (169 – 300)	3.5-4.9 (301 – 433)	>5 (> 434)

Dopamine [Dop], epinephrine [Epi], norepinephrine [Norepi] doses in ug/kg/min
SI units in brackets

Adapted from:
Ferreira FL, Bota DP, Bross A, Melot C, Vincent JL. Serial evaluation of the SOFA score to predict outcome in critically ill patients. JAMA 2001; 286(14):1754-1758.

FACTS & FIGURES

Interpretation:

SOFA Score	Mortality if initial score	Mortality if highest score
0-1	0.0%	0.0%
2-3	6.4%	1.5%
4-5	20.2%	6.7%
6-7	21.5%	18.2%
8-9	33.3%	25.3%
10-11	50.0%	45.8%
12-14	95.2%	80.0%
>14	95.2%	89.7%

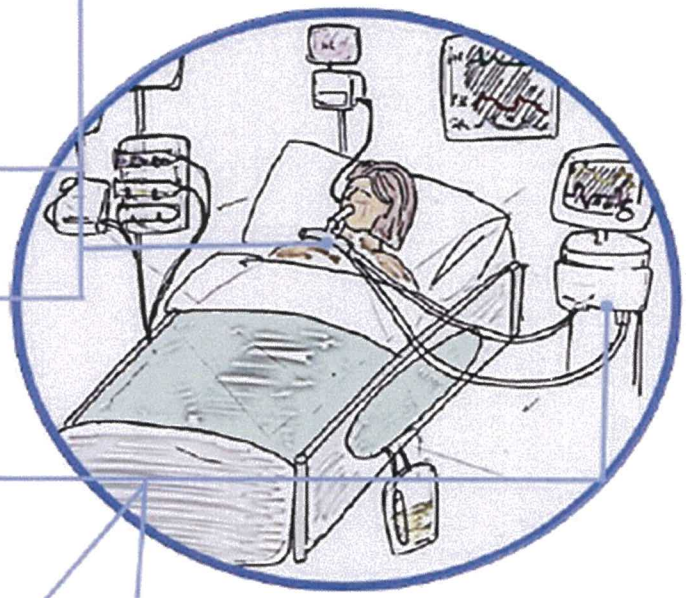
Mean SOFA Score	Mortality
0-1.0	1.2%
1.1-2.0	5.4%
2.1-3.0	20.0%
3.1-4.0	36.1%
4.1-5.0	73.1%
>5.1	84.4%

From Ferreira 2001

Appendix 3. COVID-19 Oxygenation & Ventilation

COVID-19

Oxygenation & Ventilation



O2

- ✓ High flow nasal prongs should be the standard for non-intubated patients.
- ✓ FIO2 levels of >60% → consider intubation
- ✓ Flow levels of up to 60L per minute
- *No role for non-invasive ventilation, (greater risk of aerosolisation and higher failure rates)*

Airway

- ✓ See separate intubation guideline.
- ✓ Intubation to occur in a negative pressure room (rooms 17 and 18)

Oxygen saturation targets

- ✓ Target 90-96% and adjust FIO2 accordingly

Mode of ventilation

- ✓ Standard lung protection ventilation strategy
- ✓ ASV is our preferred mode (if available)
- ✓ Alternatively, APVcmv / SIMV+ (Hamilton) or PRVC targeting tidal volume 4-8ml/kg predicted (ideal) body weight
- ✓ Avoid plateau pressures greater than 30cmH20 adjust tidal volumes to achieve this
- ✓ Consider optimisation of I:E ratio

PEEP

- ✓ Anticipate PEEP responsiveness
- ✓ As oxygen requirement goes up titrate PEEP, expect a PEEP of 14-15cmH20 or more

Minute ventilation

- ✓ Use permissive hypercapnia as needed; aim for pH >7.2
- ✓ Adjust % minute ventilation in ASV to achieve adequate CO2 clearance
- ✓ If using a mode other than ASV, then primarily adjust the respiratory rate to achieve changes in CO2, and be aware of the risk of gas trapping

Proning

- ✓ Consider proning early i.e. when FIO2 greater than 50-60% and PEEP is appropriately titrated and hypoxia persists
- ✓ Ability to prone is dependent on size, stability of patient, and availability of trained staff
- ✓ Prone for 12-16 hours per day
- ✓ Use an atracurium infusion with proning (with correct sedation) to minimise risk of tube dislodgement
- *There's a risk of tube and line dislodgment so only prone when resources allow*

Paralysis

- ✓ If there is difficulty with oxygenation, dysynchrony, or high airway pressures consider paralysis

Emergency management of circuit disconnection

- ✓ Reconnect as soon as able
- ✓ Clamp available within room, if quicker then clamp first then reconnect

Emergency management of tube dislodgement, self extubation

- ✓ Appropriately sized iGel within the room that can be sited until expert help available.
- ✓ Gently ventilate via bag attached to viral filter and connected to the iGel
- ✓ Alternatively a bag mask can be held over the patients face if they are spontaneously ventilating
- *Avoid bag mask ventilation if possible*

Appendix 4. COVID-19 Circulation & General ICU Cares

Circulation & General ICU Cares

COVID-19

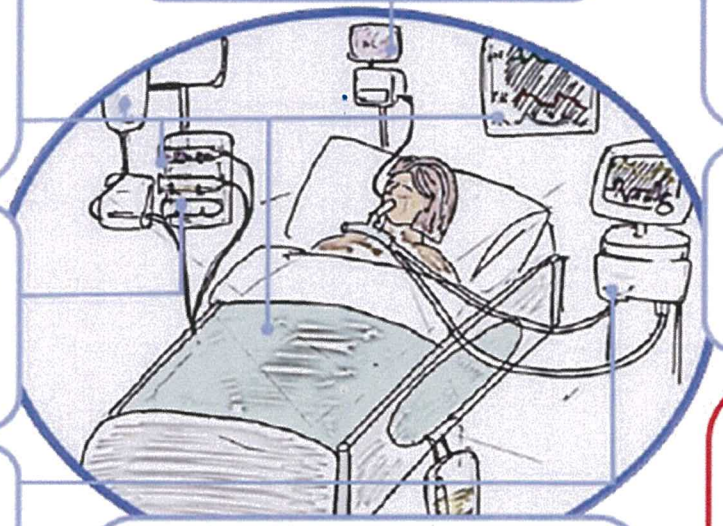
Cardiovascular management
- ✓ Preferential use of femoral central and arterial lines (*see vascular access guide*)
- ✓ Standard target MAP of > 65
- ✓ Adopt a conservative approach to fluids, and aim for neutral to negative fluid balance from the outset.
- ✓ Use noradrenaline as first line vasopressor in those with central access otherwise metaraminol peripherally
- ✓ If inotropic support needed, standard approach i.e. milrinone or adrenaline can be considered

Sedation
- ✓ Deeper levels of sedation to increase safety of mechanical ventilation e.g. in minimising agitation, risk of self extubation
- ✓ Use deeper sedation with paralysis
- ✓ Standard sedative agents should be used e.g. propofol, fentanyl
- *Avoid use of dexmedetomidine*

Weaning and de-escalation plan
- ✓ Standard criteria are to be used for assessment for extubation
- ✓ Extubation should occur in a negative pressure room
- ✓ Extubate to HFNP or standard O2 therapy

Antibiotics/Antivirals
- ✓ If superadded infection / concern for VAP felt likely then treat as per standard algorithm
- ✓ ?REMAP-CAP eligibility for antiviral trial
- No routine use of empiric antibiotics

NG management and feeding
- ✓ At intubation an NG tube will be inserted and confirmation of placement will be via a CXR.
- ✓ Standard approach to feeding should be followed.
- *No routine PPI for stress ulcer prophylaxis*
- *Avoid use of Coregrip*



Steroids
- ✓ Use for shock in standard way (hydrocortisone 50mg q6h)
- *Do not use routinely outside of REMAP-CAP if not shocked*

Nebulisers
- ✓ Nebuliser is pre-inserted into the circuit in case of need in ventilated patients
- *No nebulisers in the non-intubated patient*

DVT prophylaxis
- Enoxaparin as per renal function
- *No need for SCDs if able to receive enoxaparin*

Radiology
- ✓ On intubation and insertion of NG tube CXR to be performed to assess the position of tubes.
- *Further CXRs only as clinically indicated, no requirement for daily serial CXRs*
- *Any CT scan needs to be discussed with SMO and radiology - little to no indication to perform CT chest on COVID patients*

Blood and microbiology testing
- ✓ All suspected COVID patients should also be screened with POC test for influenza
- ✓ Standard approach should be adopted for obtaining blood cultures
- ✓ Standard approach to blood testing including ABGs

General Safety
- ✓ All of the clinical management processes are designed with staff safety first
- ✓ All patients will be managed with full PPE in ICU.
- *In an emergency nobody is to enter the room or bedspace without PPE.*

Ward round
- ✓ Conducted in the usual manner
- ✓ Notes to be completed by registrar using separate trolley.
- ✓ If the nurse is in the room communicate via intercom.
- *No routine entry to room and examination of patient unless there's a clinical need*

Appendix 5. ICU Nursing Cares & Management

ICU NURSING CARES & MANAGEMENT

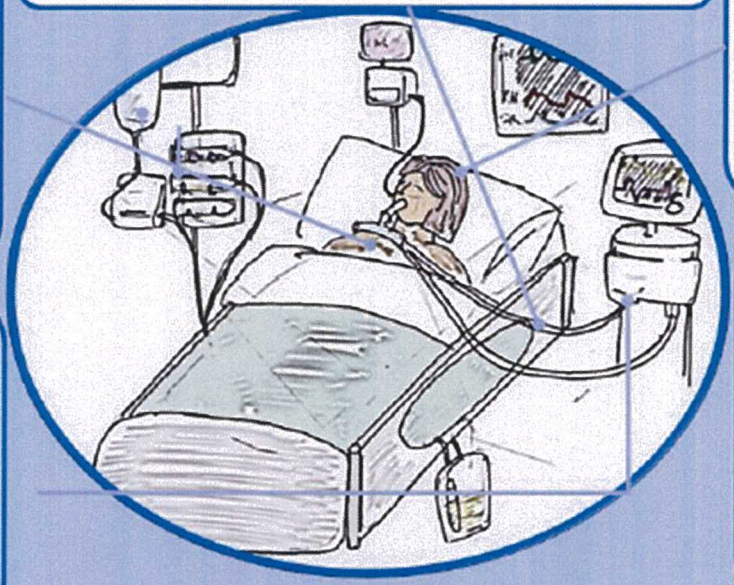
COVID-19

Respiratory assessment and Management

- ✓ Routine Respiratory assessment with NO lung auscultation.
- ✓ The use of Anchorfast™ will be widely used in bearded gentleman, we support the clipping and shaving of the patient's beard.
- ✓ If Anchorfast™ cannot be used, COMFIT™ tapes should be changed once per day with a strict 2 person technique under sedation.
- ✓ CXR post intubation & NGT placement and then at the discretion of the SMO.

Safety checks

- ✓ All Safety checks to be complete.
- ✓ The ventilator tubing should be checked for tightness at every potential disconnection point.



Nutrition and Bowel Management

- ✓ At intubation an NGT will be inserted and confirmation of placement by CXR only (no stethoscope to be used).
- ✓ Standard approach to feeding (policy) should be followed.
- ✓ Change tapes BD as per current policy.
- ✓ Manage bowels as per the new policy.
- ✓ Consider early use of the FMS in patients with frank diarrhoea if no contraindication's.
- • *Avoid use of Coregrip*

Oxygenation & ventilation

- ✓ High flow nasal prongs should be the standard for non-intubated patients.
- ✓ Flow levels of up to 60L per minute
- ✓ Target 90-96% and adjust FiO2 accordingly.
- ✓ No NIV or nebulisers will be used in the non-intubated patient.
- ✓ As oxygen requirement goes up titrate PEEP, expect a PEEP of 14-15cmH20 or more.
- ✓ Deeper levels of sedation to increase safety of mechanical ventilation.

Turning/Repositioning

- ✓ The patient should be turned/repositioned every 3- 4 hours
- ✓ The patient should be well sedated prior to each turn to prevent coughing.
- ✓ The ventilator tubing should be checked and ensured all connections are tight before the turn. One nurse to manage this and the airway during turning.
- ✓ Ensure you prepare your sheets, wipes, slidies, & pillow cases BEFORE you turn.
- ✓ Expect early proning in these pts

Essential Nursing Cares

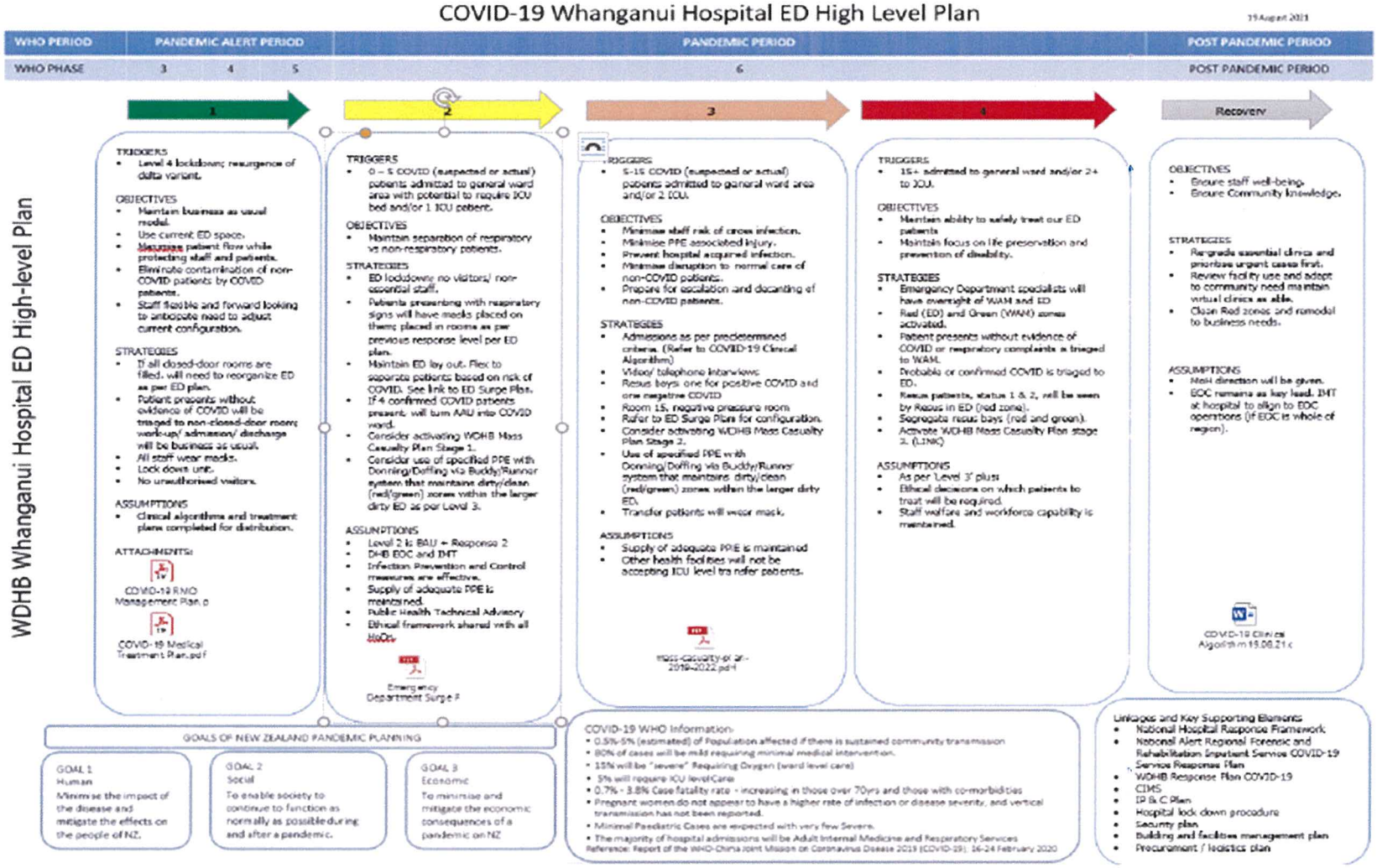
- ✓ Eye Cares every 4 hours using standard eye care protocol
- ✓ *No teeth brushing permitted*
- ✓ Gentle Oral mouth care with green swabs ONLY once per shift and soft paraffin applied to the lips.
- ✓ Gentle Oropharyngeal suctioning must be undertaken ONLY with deeply sedated patients at the point of oral cares once per shift.

- ✓ The primary nurse will be identified on the whiteboard at handover & also responsible for notes nursing shift handover. The secondary nurse will be the swap out and runner.

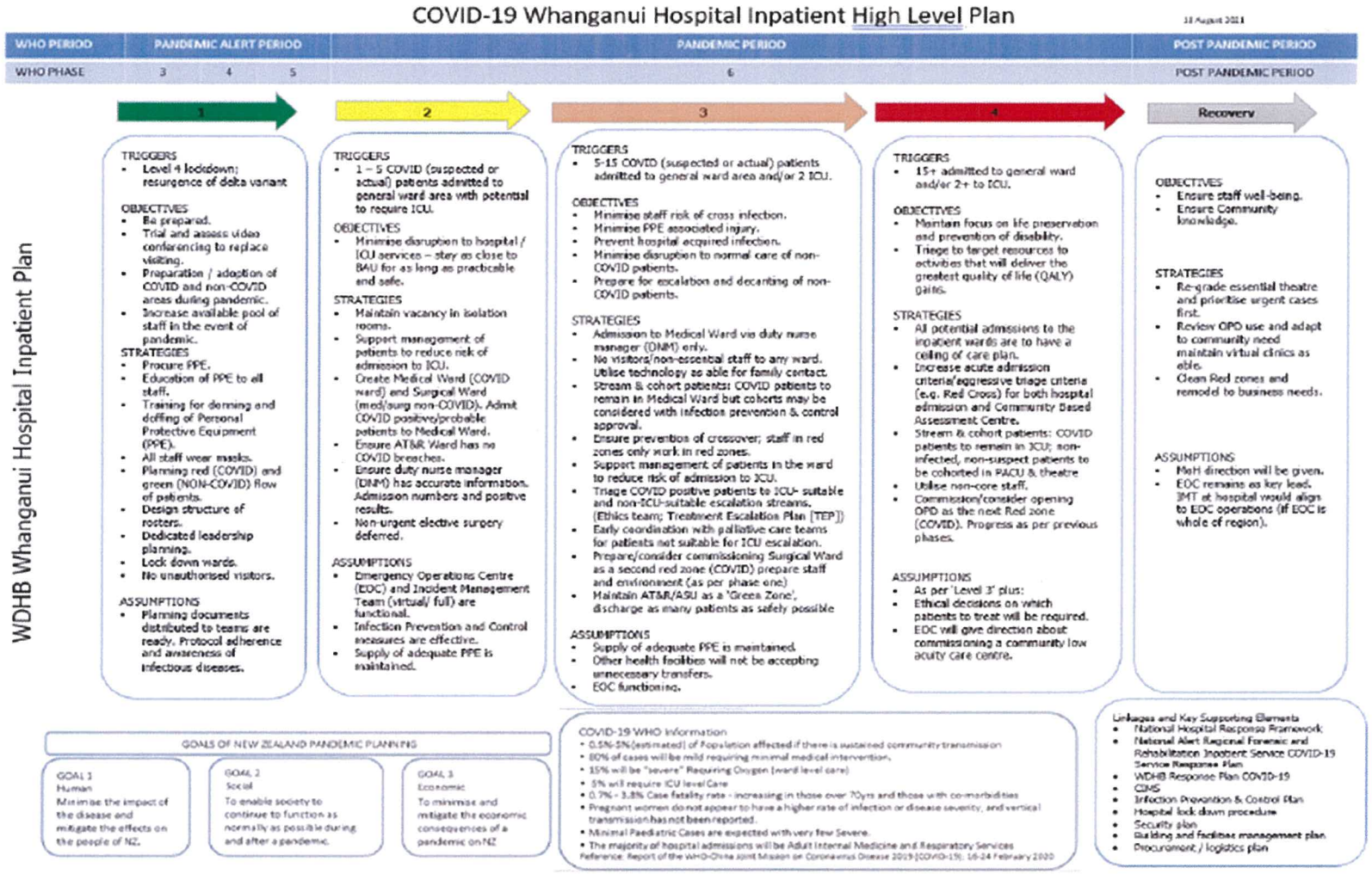
General Safety

- ✓ Primary nurse in room for maximum of 2 hours at a time to provide cares.
- ✓ All patients will be managed with full PPE in ICU.
- ▪ *In an emergency nobody is to enter the room or bedspace without PPE.*

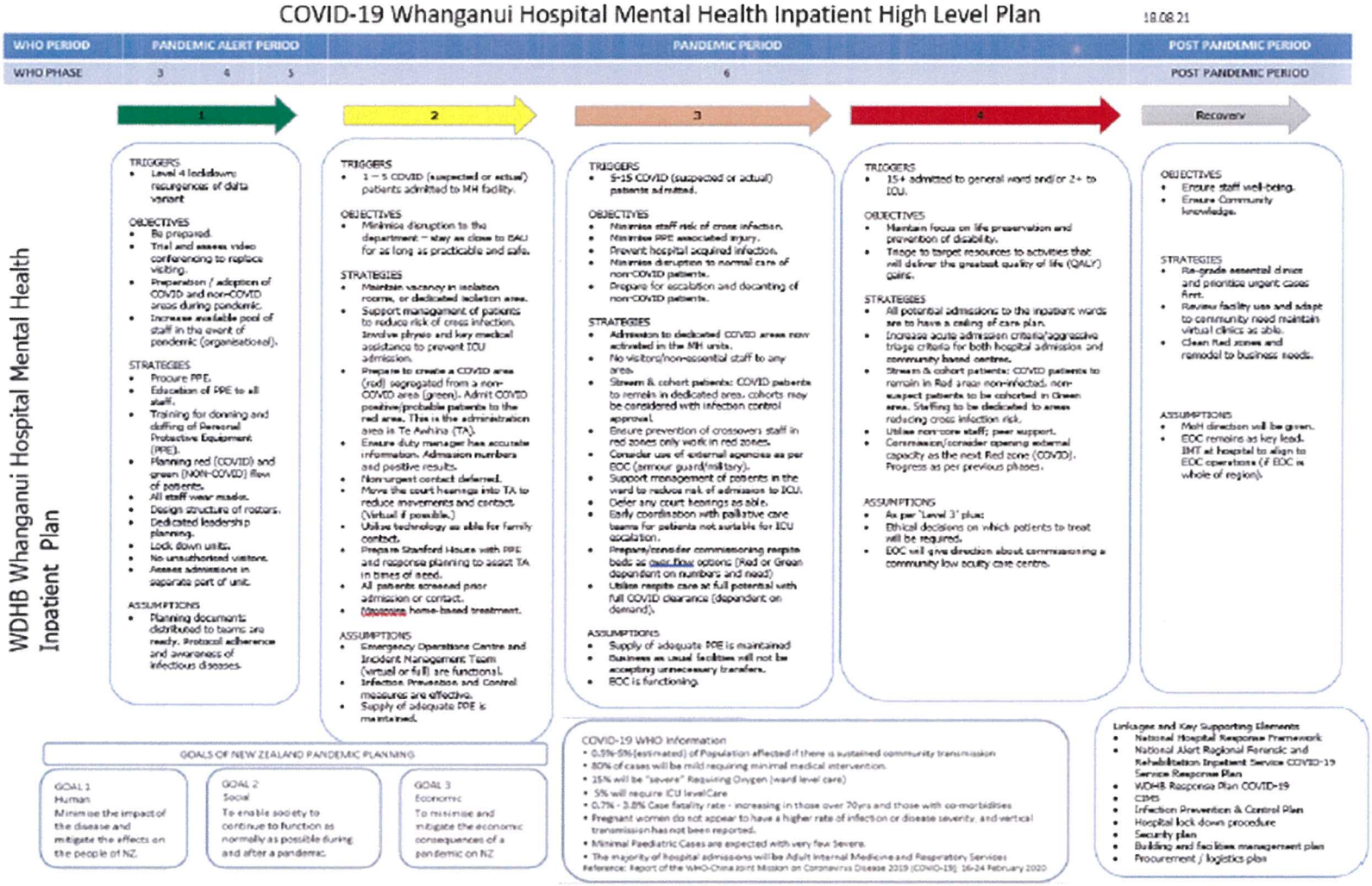
Appendix 6. WDHB COVID-19 Whanganui Hospital ED High Level Plan



Appendix 7. WDHB COVID-19 Whanganui Hospital Inpatient High Level Plan



Appendix 8. WDHB COVID-19 Whanganui Hospital Mental Health High Level Plan



Appendix 9. WDHB Whanganui Hospital Inpatient Maternity/Delivery & Paeds/SCBU high-level plan

COVID-19 Whanganui Hospital Inpatient Maternity/Delivery & Paediatrics/SCBU High Level Plan

18 August 2021

WHO PERIOD	PANDEMIC ALERT PERIOD			PANDEMIC PERIOD	POST PANDEMIC PERIOD
WHO PHASE	3	4	5	6	POST PANDEMIC PERIOD

WDHB Whanganui Hospital Inpatient Plan

1

TRIGGERS
- Level 4 lockdown; resurgence of delta variant

OBJECTIVES
- Be prepared.
- Confirm workforce Health Assessments.
- Implement visiting policy for Level 4 lockdown
- Preparation / adoption of COVID and non-COVID areas during pandemic.
- Increase available pool of staff in the event of pandemic.

STRATEGIES
- Procure PPE.
- Education/indications of PPE use to all staff.
- Training for donning and doffing of Personal Protective Equipment (PPE).
- All staff in clinical areas wear disposable masks.
- Planning red (COVID) and green (NON-COVID) flow of patients.
- Design structure of rosters.
- Dedicated leadership planning.
- Lock down wards.

ASSUMPTIONS
- Planning documents distributed to teams are ready. Protocol adherence and awareness of infectious diseases.

2

TRIGGERS
- 1 – 5 COVID (suspected or actual) patients admitted to general ward area with potential to require ICU.

OBJECTIVES
- Minimise disruption to hospital / ICU services – stay as close to BAU for as long as practicable and safe.

STRATEGIES
- Maintain vacancy in isolation rooms.
- Identify red and green zones in paediatric and maternity wards
- Support management of pregnant or postnatal women to reduce risk of admission to ICU.
- Support management of paediatric patients to reduce risk of deterioration requiring transfer to tertiary center
- Consider admitting COVID positive children and families to Medical Ward (COVID Ward)
- Assess suitability of pregnant or postnatal women remaining on maternity or transfer to Medical Ward
- Ensure SCBU has no COVID breeches.
- Ensure duty nurse manager (DNM) has accurate information. Admission numbers and positive results.

ASSUMPTIONS
- Emergency Operations Centre (EOC) and Incident Management Team (virtual/ full) are functional.

3

TRIGGERS
- 5-15 COVID (suspected or actual) patients admitted to general ward area and/or 2 ICU.

OBJECTIVES
- Minimise staff risk of cross infection.
- Minimise PPE associated injury.
- Prevent hospital acquired infection.
- Minimise disruption to normal care of non-COVID patients.
- Prepare for escalation and decanting of non-COVID patients.

STRATEGIES
- DNM must be informed of all admissions to Maternity and Paediatrics
- Stream & cohort COVID patients into red zones
- Ensure prevention of crossover; staff in red zones only work in red zones.
- No visitors/non-essential staff to any ward.
- Utilize technology as able for family contact.
- Support management of patients in the ward to reduce risk of admission to ICU.
- Early discharge planning following normal birth and no complications
- Early discharge as many paediatric patients as safely possible
- Maintain SCBU as a green Zone

ASSUMPTIONS
- Supply of adequate PPE is maintained.
- Other health facilities will not be accepting unnecessary transfers.
- EOC functioning.

4

TRIGGERS
- 15+ admitted to general ward and/or 2+ to ICU.

OBJECTIVES
- Maintain focus on life preservation and prevention of disability.
- Triage to target resources to activities that will deliver the greatest quality of life (QALY) gains.

STRATEGIES
- All admissions to Maternity and Paediatric wards are to have a clearly documented care plan.
- Increase acute admission criteria/aggressive triage criteria (e.g. Red Cross) for both hospital admission and Community Based Assessment Centre.
- Stream & cohort patients: COVID patients to remain in ICU; non-infected, non-suspect patients to be cohorted in PACU & theatre
- Utilise non-core staff.
- EOC Commission/consider opening OPD as the next Red zone (COVID). Progress as per previous phases.

ASSUMPTIONS
- As per 'Level 3' plus:
- Ethical decisions on which patients to treat will be required.
- EOC will give direction about commissioning a community low acuity care centre.

Recovery

OBJECTIVES
- Ensure staff well-being.
- Ensure Community knowledge.

STRATEGIES
- Re-grade essential theatre and prioritise urgent cases first.
- Review OPD use and adapt to community need maintain virtual clinics as able.
- Clean Red zones and remodel to business needs.

ASSUMPTIONS
- MoH direction will be given.
- EOC remains as key lead. IMT at hospital would align to EOC operations (if EOC is whole of region).

GOALS OF NEW ZEALAND PANDEMIC PLANNING

GOAL 1
Human
Minimise the impact of the disease and mitigate the effects on the people of NZ.

GOAL 2
Social
To enable society to continue to function as normally as possible during and after a pandemic.

GOAL 3
Economic
To minimise and mitigate the economic consequences of a pandemic on NZ

COVID-19 WHO Information
- 0.5%-5% (estimated) of Population affected if there is sustained community transmission
- 80% of cases will be mild requiring minimal medical intervention.
- 15% will be "severe" Requiring Oxygen (ward level care)
- 5% will require ICU levelCare
- 0.7% - 3.8% Case fatality rate - increasing in those over 70yrs and those with co-morbidities
- Pregnant women do not appear to have a higher rate of infection or disease severity, and vertical transmission has not been reported.
- Minimal Paediatric Cases are expected with very few Severe.
- The majority of hospital admissions will be Adult Internal Medicine and Respiratory Services

Reference: Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19): 16-24 February 2020

Linkages and Key Supporting Elements
- National Hospital Response Framework
- National Alert Regional Forensic and Rehabilitation Inpatient Service COVID-19 Service Response Plan
- WDHB Response Plan COVID-19
- CIMS
- Infection Prevention & Control Plan
- Hospital lock down procedure
- Security plan
- Building and facilities management plan
- Procurement / logistics plan

Appendix 10. Clinical Algorithm

COVID-19

Clinical Algorithm

- This algorithm requires specified PPE with Donning/Doffing via Buddy/Runner system that maintains dirty/clean (red/green) zones within the larger dirty ED.
- This algorithm also requires that COVID19+ patients will be covered with masks within the ED/Hospital as part of the overall PPE plan.
- Green and red patient streams shall be meticulously cultivated and maintained via hospital protocol.
- All potential aerosol generating procedures (intubation, nebulizer therapy, manual ventilation prior to intubation) require N95 masked PPE in negative air pressure room if available.
- Usual care or other non-aerosol generating procedures require a surgical/medical mask.
- This algorithm applies for all COVID patients per the current (16 April 2020) Case Definition.

MILD

Tolerable/treatable symptoms at home:

- Hemodynamic stability/oxygen saturation at baseline:
  - No respiratory condition: O2 sats > 95%
  - Pre-existing underlying conditions: O2 sats 88-92%
- No oral/airway compromise
- No neurovascular instability
- No signs of compromised perfusion or hydration status
- No decreased urine output
- No intolerance of adequate oral intake
- No changes in ambulation or mental status from baseline
- No significant dynamic changes in symptoms or physical exam prior to discharge
- No compelling psychosocial indication for admission/observation

If swab indicated per case definition:

- order swab
- confirm swab results and/or completion with nurse/doctor
- complete and submit epidemiologic paperwork
- clinically reassess patient and if Mild/Stable:
  - discharge patient with paracetamol antipyretic/analgesic treatment and other medications as indicated
  - mask and transmission prevention guidance
  - and telephone follow up by Public Health.

MODERATE

Treatable symptoms in hospital:

- Hypotension
- Hypoxia/ shortness of breath
- Fever
- Pulmonary oedema

If swab indicated per case definition:

- order swab
- confirm swab results and/or completion with nurse /doctor
- complete and submit epidemiologic paperwork
- clinically reassess patient and if found to be Moderate:
  - admit patient to Medical Ward or Low Demand Unit pending swab results/observation admission
  - transfer to hospital as direct admission to CCU or Medical Ward or other high demand unit vs ED admission for higher acuity care if patient is clinically deteriorating and if ethically indicated.

SEVERE

Any combination of intolerable symptomatology or work of breathing

- Hemodynamic instability and/or relative hypoxia (see attachment)
- Oral/airway compromise
- Neurovascular instability
- Signs of compromised perfusion or hydration status
- Decreased urine output
- Intolerance of adequate oral intake
- Altered mental status or neurologic exam from baseline
- Significant hyperdynamic changes in symptoms or physical exam findings prior to disposition from ED.

If swab indicated per case definition:

- order swab
- confirm swab results and/or completion with nurse /doctor
- complete and submit epidemiologic paperwork
- clinically reassess patient and if found to be Severe:
  - admit patient to CCU or Medical Ward depending on bed availability
  - Transfer to hospital from community or from low dependency unit as direct admission to CCU or Medical Ward or other high demand unit vs ED admission for higher acuity care if patient is clinically deteriorating and if ethically indicated.

Admission form:

WDHB COVID-19 Admission Form.pdf

Case notification form:

nhcc-case-notification-form-23mar2020

COVID-19 RMO management plan:

COVID-19 R&AO Management Plan.p

COVID-19 Medical treatment plan:

COVID-19 Medical Treatment Plan.pdf

Treatment Algorithm for Moderate/ Severe COVID-19 Patients