



**Te Kāwanatanga o Aotearoa**  
New Zealand Government



MINISTRY OF HEALTH



# **Guidance for the Acute Phase of Rehabilitation of People with or Recovering from COVID-19 in Aotearoa New Zealand**

May 2022

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Clinical Exercise Physiology New Zealand

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# Foreword

Dr Martin Chadwick, Chief Allied Health Professions Officer,  
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The outbreak of the COVID-19 virus has been challenging globally to manage and contain. Over the last two years allied health professionals have demonstrated their utility in the pandemic response. We continue to watch and learn from the rest of the world as we have pivoted to respond to events in the pandemic. It is timely to update the living document originally created in 2020.

Our continual learning about COVID-19 applies not only to the acute phase of the virus but also to the ongoing symptoms and post-acute sequelae. Again, these phases bring the allied health group of professions to the fore. While the advent of the virus itself is tragic, the response has been amazing to watch unfold, and the volume of information for post-COVID rehabilitation is just that, voluminous. Information in the following pages is an updated collaboration between the many allied health professions that will be directly involved in providing this rehabilitation. The fact that we are now able to gather many professions together and produce a document of this calibre is a testament to the focus and maturity of these groups, for which I pass on my thanks.

Lastly, this update of a living document permits us to update the information as new evidence on the longer-term effects of the virus, and the best treatments and management approaches emerge. We will update this document, so it remains of value. A separate programme of work is under way to develop a long COVID rehabilitation and service delivery guideline within an Aotearoa New Zealand context, which will be published later this year. Again, my thanks for the time, energy and effort from the individuals involved in pulling this document together for a second iteration in relatively short timeframes.

## Sandra Kirby, Co-Chair, Allied Health Association of Aotearoa New Zealand

New Zealand's experience of the COVID-19 virus was different to many other countries around the globe. As allied health professions, many of us watched our international colleagues and health systems being overwhelmed by the numbers and severity of the disease. Swift measures in New Zealand meant that, as described by our Prime Minister, the 'team of 5 million' was able to flatten the disease curve in New Zealand and we delayed widespread infections until most of the population was vaccinated.

While our rates of hospitalisation and death are low by international standards, we still have more than 1 million people living in our communities who have been infected with COVID-19. There is an important role for allied health professionals to be part of the team helping these people and others rehabilitate and recover from viruses. Our whole community is better served when the entire health sector work together for wellness.

Members of the Allied Health Association of Aotearoa New Zealand are united in their willingness to work with other professions. My thanks to the people who volunteered, at a busy time in their working lives, to bring this guidance together and to ensure it remains current. The allied health workforce plays a vital role in recovery and rehabilitation.

This document sets out some of the ways allied health can contribute to the health and wellbeing of New Zealanders who have been affected by COVID-19.

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# Section 1:

# Introduction

## Purpose

The purpose of this document is to highlight the complexity and potential long-term needs of people recovering from COVID-19 and to demonstrate the importance of the allied, scientific and technical workforce in reducing the short- and long-term health and wellbeing implications of COVID-19 infection.

## Problem definition

There is an emerging global body of research and guidance for the rehabilitation of people with COVID-19. However, New Zealand is in a fortunate position: the burden of disease is low compared to many countries. The lower burden of severe disease requires a different health and rehabilitation response compared to other jurisdictions, while being mindful of other variants specific impacts. This health response needs to be relevant to our health system and meet the needs of the Aotearoa New Zealand population, including our commitment to the Te Tiriti O Waitangi and Whakamaua: Māori Health Action Plan.

The Ministry of Health and health service providers have an obligation under Te Tiriti o Waitangi to ensure iwi, hapū, whānau and Māori communities and organisations are active partners in preventing and addressing potential impacts of COVID-19. The principles of Te Tiriti o Waitangi provide the framework to guide the health and disability system towards health equity for Māori. These principles include:

- **tino rangatiratanga**, which embodies Māori self-determination and mana motuhake. This means that Māori are key decision makers in the design, delivery, and monitoring of health and disability services and the response to COVID-19
- **equity**, which requires the Crown to commit to achieving equitable health outcomes for Māori and to eliminate health disparities resulting from COVID-19. This includes the active surveillance and monitoring of Māori health to ensure a proportionate and coordinated response to health need
- **active protection**, which requires the Crown to act, to the fullest extent practicable, to protect Māori health and achieve equitable health outcomes for Māori in the response to COVID-19. This requires the Crown to implement measures to equip whānau, hapū, iwi and Māori communities with the resources to undertake and respond to public health measures to prevent and/or manage the spread of COVID-19

- **options**, which requires the Crown to provide for and properly resource kaupapa Māori health and disability services in the response to COVID-19. Furthermore, the Crown is obliged to ensure that all health and disability services are provided in a culturally appropriate way that recognises and supports the expression of hauora Māori models of care
- **partnership**, which requires the Crown and Māori to work in partnership in the governance, design, delivery and monitoring of the response to COVID-19. This contributes to a shared responsibility for achieving health equity for Māori.

## Key health impacts of COVID-19

The key health impacts of COVID-19 are:

- breathing pattern disorder, autonomic dysfunction and musculoskeletal dysfunction
- post-intensive care syndrome and post-viral fatigue syndrome
- renal and hepatic injury
- delirium and other cognitive impairments
- communication impairments
- impaired swallow and malnutrition
- deterioration in mental health and psychosocial implications
- paediatric-specific impacts such as meningitis and multisystem inflammatory syndrome.

## Key social impacts of COVID-19

The key social impacts of COVID-19 are:

- social isolation
- reduced access to health care
- fear of accessing health care
- heightened anxiety, stigma or distress
- income loss or reduced work capacity
- increased responsibilities in terms of care of dependants/whānau
- reduced access to social services
- exacerbation of food insecurity
- limitations in employability, reduced occupational health, loss of role or loss of self-identity
- harm/impact to vulnerable or dependent communities
- poor access to rehabilitation following COVID-19.



# Clinical case definitions

For COVID-19, the clinical case is defined by the below timeframes, irrespective of a confirmed diagnosis by testing.

- **acute COVID-19** – signs and symptoms of COVID-19 for up to four weeks
- **ongoing symptomatic COVID-19** – signs and symptoms of COVID-19 after the acute/infectious period of the illness from 4 weeks up to 12 weeks
- **post-COVID-19 syndrome (also referred to as 'long COVID')** – signs and symptoms that develop during or after an infection consistent with COVID-19 that continue for more than 12 weeks and are not explained by an alternative diagnosis.

## Background and context

Most people with COVID-19 recover completely and return to normal health. However, some people who have been infected with COVID-19 report a diverse range of symptoms beyond the time of 'recovery' from the acute phase of COVID-19 illness. This is not remarkable: protracted symptoms are common following many viral and bacterial infections, including other coronaviruses.

Symptoms may last for weeks or months after the acute illness. The presence of lingering symptoms may have a significant impact on the daily lives of those who are affected, and their family and whānau.

There is no internationally agreed definition of the long COVID condition yet. However, the WHO published the following definition in October 2021:

Post COVID-19 condition occurs in individuals with a history of probable or confirmed SARS-CoV-2 infection, usually 3 months from the onset of COVID-19 with symptoms that last for at least 2 months and cannot be explained by an alternative diagnosis. Common symptoms include fatigue, shortness of breath, cognitive dysfunction but also others which generally have an impact on everyday functioning. Symptoms may be new onset, following initial recovery from an acute COVID-19 episode, or persist from the initial illness. Symptoms may also fluctuate or relapse over time. A separate definition may be applicable for children.

# Section 2:

# Rehabilitation

## Key principles for rehabilitation

The Ministry of Health has developed the following key principles for rehabilitation following COVID-19.

- **Whānau-centred care**

This approach aims to provide care to a person within the context of their whānau and the needs of the whānau group as a whole. The holistic wellbeing of the person and whānau is prioritised. The health system works for the person and their whānau and ensures transition between settings and providers is seamless.

- **Equity**

Equity and our commitment to the Te Tiriti O Waitangi are at the forefront of our health response to COVID-19. Rehabilitation considers bi-cultural and cultural practices; mana motuhake; and people's aspirations, values and beliefs to ensure that treatment and rehabilitation is culturally safe and appropriate and ensure all people receive beneficial rehabilitation.

People with co-morbidities are more likely to suffer life-threatening symptoms of COVID-19. The Māori population live with a higher burden of disease and are therefore more likely to be susceptible to COVID-19. Māori and other identified populations, such as Pacific peoples, people with disabilities, the elderly and people with reduced immunity, require extra attention.

- **Flexible workforce**

The health workforce has had to quickly adapt to new ways of working. Self-isolation, physical distancing and enhanced infection prevention control has required health care professionals to work in broader roles, to avoid numerous clinical contacts. The broad scopes of practice of the allied, scientific and technical workforce are well placed for transdisciplinary work, enabling a singular holistic assessment to determine and prioritise a person's needs.

- **Embracing new models of care**

New models of care that improve access to health care, such as virtual clinics, outreach services and streamlined processes, should be encouraged alongside interdisciplinary and transdisciplinary work.

- **Health and safety**

Health professionals and people should remain protected and safe. This requires training, the use and provision of appropriate personal protective equipment and infection control measures.

- **Health literacy**

Health professionals should be able to supply patients/whānau with appropriate information and suitable educational materials. Communication should ensure provision of equitable service. This may require translated materials, use of interpreters, visual prompting and/or apps.

## **Allied health, scientific and technical professionals' input into the rehabilitation of people with COVID-19**

Allied health, scientific and technical professionals are involved from the initial stages of recovery to the longer-term rehabilitation of people recovering from COVID-19. The allied health workforce entails approximately 50 qualified health professions, each with specialised expertise in preventing, diagnosing, treating or rehabilitating a range of conditions and illness. A broad scope of practice allows allied health professionals to work together in a transdisciplinary way while providing specialist care to New Zealanders.

Transdisciplinary team members value the specific knowledge and core skills of other team members whilst acknowledging the skills they share. These shared skills allow team members to collaborate across professionals' boundaries. Transdisciplinary team working requires mutual understanding, trust and respect of all professionals to enable the team to function efficiently, enabling whānau-centred care.

**Table 1: Ways health professionals can rehabilitate people recovering from COVID-19**

<b>Profession</b>	<b>Unique skills for rehabilitation of people recovering from COVID-19</b>
Clinical exercise physiologist	Clinical exercise physiologists use assessments to identify the causes of reduced functional capacity or exercise intolerance. They then develop individualised exercise-focused interventions based on their assessment to restore and mitigate loss of function.
Dietitian	Dietitians provide medical nutrition therapy, which involves assessing the nutritional needs of patients and together creating an individual nutritional plan to meet those needs as they recover, taking into account any other underlying conditions, swallowing difficulties, lifestyle, social and cultural factors.
Occupational therapist	Occupational therapists engage people and whānau in personally meaningful occupations (self-care, productivity, leisure) to empower them through rehabilitation that will optimise their recovery.
Physiotherapist	Physiotherapists are autonomous practitioners who work in partnership with the wider team to mitigate the physiological consequences of COVID-19. Physiotherapists may be involved in a person's rehabilitation from acute admission in an intensive care unit through to community, occupational and sporting environments. Physiotherapists interpret the findings of individualised assessments and prescribe a management plan supported by evidence to meet a person's needs and specific goals.
Psychologist	Psychologists are scientist practitioners who apply psychological knowledge, principles, methods and procedures to predict and influence behaviour and/or cognition to support people to achieve psychological and psychosocial wellbeing. Psychologists provide evidence-based psychological therapies to optimise wellbeing.
Social worker	Social workers assess and evaluate individual and whānau situations and needs, incorporating analysis of structural, cultural, social and economic issues to explore and identify strengths, needs, context and support networks. Social workers view rehabilitation from the client's perspective, working in partnership to determine and prioritise goals that will enhance people's wellbeing, resilience and ability to cope with life stressors such as grief, loss, trauma and other major events and challenges.
Speech and language therapist	Speech-language therapists are autonomous practitioners who work in partnership with the wider team to provide specialist assessment and rehabilitation for people of all ages with acute and chronic communication and swallowing difficulties.

# Providing rehabilitation to people recovering from COVID-19

The following table shows the phases of care for people recovering from COVID-19. It outlines the key principles and the requirements of specific health professional groups for each of the phases.

**Table 2: Key principles for and requirements of specific health professional groups when providing care to persons recovering from COVID-19**

Phase of care	Rehabilitation interventions	Possible locations
<b>Pre-rehabilitation</b>	<p>This phase entails identification of priority groups to support people’s health and wellbeing through a challenging time.</p> <p>Also community care plans, home exercise programmes and mental health support.</p> <p>These interventions may be delivered virtually.</p>	<p>Community outreach, primary care, kaupapa/kaumatua, mārae-based services</p>
<p><b>Acute</b> Assessment, initial treatment, early rehabilitation</p>	<p>A person may require some or all of these rehabilitation interventions, depending on the severity or presentation of their illness.</p> <p><b>Respiratory</b></p> <p>A respiratory assessment may be required that includes the person’s oxygen requirements, exercise capacity, mobility and lung clearance. Specific reliable outcome measures, both physiological and functional, should be used for assessment.</p> <p>Treatment should be tailored depending on the assessment, the person’s ventilation status and the person’s goals. The treatment may include: acute pulmonary rehabilitation, strength training for ventilator weaning, positioning for ventilation and perfusion matching or secretion clearance, secretion clearance (for example, through manual techniques, oscillatory techniques and positive expiratory pressure), and fatigue and energy conservation management, including conscious proning.</p>	<p>Intensive care unit, medical ward, acute assessment unit, primary care, community</p>

Phase of care	Rehabilitation interventions	Possible locations
<b>Acute</b> (continued)	<p><b>Physical</b></p> <p>Physical assessment may be required depending on the person’s medical status. An assessment may include analysis of: skeletal muscle and deconditioning, dysfunctional breathing patterns, post-viral fatigue response and cardio-respiratory fitness. Treatment may include fatigue and energy conservation management, assisted or active exercise plans, prescription of mobility aids and assessment of an appropriate level of care.</p> <p>Pressure needs to ensure skin integrity should be assessed in sedentary or limited mobility persons, and a positioning plan or mobility plan implemented when appropriate.</p> <p><b>Nutritional</b></p> <p>A nutritional assessment may be required, and may include malnutrition screening. Assessment and management of swallowing difficulties should be considered for persons with prolonged intubation, neurologic presentations and observed or reported difficulties in eating and drinking.</p> <p>Nutritional needs should be monitored twice weekly for high-risk patients and weekly for lower-risk patients. Nutrition support may include food fortification and prescription of texture modification, oral nutrition support supplements and enteral nutrition support. Swallowing difficulties should be re-assessed regularly.</p> <p><b>Communication</b></p> <p>An assessment may be required if the person has voice, speech, language and/or cognitive communication difficulties. A speech language therapist should work with the person and whānau to assess, educate and manage the bio-psychosocial issues related to communication difficulties.</p>	

Phase of care	Rehabilitation interventions	Possible locations
<p><b>Acute</b> (continued)</p>	<p><b>Mental health/psychosocial</b></p> <p>Diagnosis of COVID-19, is likely to cause distress alongside the physical symptoms, which can affect recovery. Screening of the person’s mental health and psychosocial functioning may be required, which may include a more in-depth psychological assessment involving the family, whānau and wider social network. Diagnosis of COVID-19 works to exacerbate existing and often immediate social stressors, and additional support may be required, particularly when usual access to social networks and support mechanisms has been disrupted. There is a need to identify and coordinate with relevant community service providers, including kaupapa Māori and iwi providers, to ensure people’s wider needs are met.</p> <p>Provision of evidenced-based psychological first aid to foster illness adjustment and adaptive coping may be recommended. Given the COVID-19 context, a wider assessment of risk to individual and vulnerable others (that is, dependants) may be warranted.</p> <p>People at risk of harm, individuals and families in crisis situations and those with multiple complex health and social needs should be identified and person-centred care plans implemented to respond to the immediate crisis and ongoing rehabilitation needs.</p> <p><b>Occupational participation</b></p> <p>A person receiving in-patient care may require an occupational assessment to decide if they can return home and resume their daily life roles, routines and occupations. This may cover how the person will cope in self-isolation. Rehabilitation may include management of the activities of daily living, including adaptive strategies such as assistive devices, and fatigue and energy conservation management, which encourages functional independence and/or enabling family to support the person, as well as health literacy and self-advocacy. Potential loss of function or disengagement in daily life may, in turn, affect psychological wellbeing, which can affect self-identity.</p>	
<p><b>Sub-acute</b> Initial stages of rehabilitation once medically stable</p>	<p><b>Respiratory</b></p> <p>Following an individualised assessment, rehabilitation may include management of oxygen requirements, altered breathing patterns, respiratory fatigue or secretion clearance.</p> <p>Exercise testing and exercise prescription may be utilised, depending on the person’s goals. Education may be provided to empower longer-term self-management and resilience.</p>	<p>Medical ward, rehabilitation unit, home</p>

Phase of care	Rehabilitation interventions	Possible locations
<b>Sub-acute</b> (continued)	<p data-bbox="461 248 1075 461"> <b>Physical</b>            The person may require a strategy to manage fatigue and reduced exercise tolerance, which may include a paced exercise or mobility plan. This will be dependent on their cardiorespiratory status and muscular deconditioning.         </p> <p data-bbox="461 483 1075 837"> <b>Nutritional</b>            Monitoring of nutritional needs may still be required. Monitoring progress of oral intake and of muscle function may continue. Nutrition support should be escalated if the person’s calorie intake remains under 50 percent over a five- to seven-day period. If the person is at home, local pathways to optimise nutrition provision, including Oral nutritional support (ONS) support, should be implemented. Swallow may need to be re-assessed and may require further rehabilitation.         </p> <p data-bbox="461 860 1075 1106"> <b>Communication</b>            People who have been intubated or continue to have voice, speech, language and/or cognitive communication difficulties may still need communication supports and rehabilitation, including communication aids. Voice disorders may be best managed in joint speech-language therapists-otolaryngologist clinics         </p> <p data-bbox="461 1128 1075 1308"> <b>Mental health/psychosocial</b>            Provision of evidenced-based interventions for identified psychosocial needs may need to continue. These interventions may begin in hospital, during transition or in the community.         </p> <p data-bbox="461 1330 1075 1823"> <b>Occupational participation</b>            The person and family/whānau may require reassessment of activities of daily living, which may include a home assessment. Support may be given to engage and empower the person and enable a graded return to central activities such as school or work. Rehabilitation may include management of the activities of daily living, including adaptive strategies such as assistive devices and fatigue and energy conservation management, which encourages functional independence and/or enabling family to support the person, as well as health literacy and self-advocacy. Potential loss of function or disengagement in daily life may, in turn, affect psychological wellbeing, which can affect self-identity.         </p>	



Phase of care	Rehabilitation interventions	Possible locations
<p><b>Long term</b> Longer-term functional rehabilitation</p>	<p><b>Respiratory</b></p> <p>Respiratory rehabilitation follows individually based assessments, and may include exercise testing, which informs appropriate rehabilitation prescription, focusing on functional staged rehabilitation goals. The interface to meet that need may be class-based, one on one or virtual, to meet needs specific to COVID 19.</p> <p>Poor sleep hygiene practices and subsequent poor sleep quality can affect regulation of immune function and compound the effects of COVID-19, thereby affecting physical recovery.</p> <p><b>Physical</b></p> <p>Cardiopulmonary functional capacity testing may be required, which may include a cardiopulmonary exercise test, including a 12-lead ECG and expired gas analysis, strength test and functional movement screen. Exercise is likely to be needed to overcome deconditioning; therefore, a person may require an individualised exercise plan.</p> <p>A consistent approach to individual-based assessment of need is important. There should be caution with graded exercise approach: some people may require a fatigue and energy conservation plan, to return to school, work or a sport exercise programme.</p> <p><b>Nutritional</b></p> <p>Some people may require increased calorie and protein intake, with or without texture modifications, for months to support preservation of muscle mass, function, swallowing and positive quality of life outcomes. Ongoing swallowing difficulties may need monitoring and rehabilitation. Mealtime anxiety and fear around choking may require further speech language therapy intervention.</p> <p><b>Communication</b></p> <p>Some people may require longer-term follow-up due to ongoing voice, speech, language and/or cognitive communication difficulties, and associated psychosocial impacts.</p> <p><b>Mental health/psychosocial</b></p> <p>Health professionals should consider continued support for people’s reintegration into their roles within their whānau, homes and communities.</p>	

Phase of care	Rehabilitation interventions	Possible locations
<b>Long term</b> (continued)	<p><b>Occupational participation</b></p> <p>People and their family/whānau may require support at home, such as specialist equipment, housing modifications, assistive devices and fatigue and energy conservation management, to encourage functional independence or interdependence with family. People may require extra support to return to their workplace. Rehabilitation may include management of the activities of daily living, to encourage functional independence and/or enabling family to support the person, as well as health literacy and self-advocacy. Potential loss of function or disengagement in daily life, may, in turn, affect psychological wellbeing, which affects self-identity.</p>	

## Long-term community rehabilitation for people recovering from COVID-19

The long-term physiological and psychosocial effects of COVID-19 are still emerging. Recovery from infection may require rehabilitation for extended periods of time. The long-term effects of intensive care unit and hospital stays are known, and those working in the allied health, scientific and technical sector are experienced and well placed to provide appropriate evidence-based interventions. People who have had mild symptoms during the acute phase of COVID-19 may still develop long-term effects, and health professionals should advise people to access support resources via Health Navigator online, Healthline or face to face at a health care provider to access appropriate supports for their identified needs. Individuals can self-refer to certain health professionals and should look for local providers.

COVID-19 may affect people and communities who are already more likely to have poorer health outcomes due to social determinants of health and socioeconomic status. Poor access to rehabilitation following COVID-19 may increase this inequity. The health system should strive to work in partnership with priority communities to address the longer-term physiological, psychosocial and social effects of COVID-19 and reduce inequity.

Sustained community-based access to rehabilitation professionals is required to support people to remain at home and optimise their independence and functioning. Prioritisation of early intervention based on relationship-building and frequent contact is essential. Telehealth can assist people who live a distance from their provider to access rehabilitation support.

## Wider implications of COVID-19 on communities

The wider implications of COVID-19 in Aotearoa New Zealand are unknown. The impact of lockdown on New Zealanders' health and wellbeing due to limited access to health services, social isolation, occupational disruption and negative economic situations is also unknown, but is likely to have been significant. These impacts have potential to increase pressure on the health system into the future. A consistent approach of personalised service provision should aim to empower New Zealanders to collaborate in their recovery and facilitate improved community resilience. An increase in demand for health services will require the health system to change to meet the demand. This may include better use of the health workforce.

The breadth of the professions in the allied health sector must focus on the population's health and wellbeing, to ensure that rehabilitation is appropriate to all New Zealanders' needs. Interdisciplinary working using all the health workforce in a range of settings, including primary, community, marae, church, workplace and leisure settings, will benefit the health system and all New Zealanders. The provision of a sufficiently agile and robust workforce is paramount in securing care to New Zealand communities at all levels of need.

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