

Multidisciplinary rehabilitation communication and referral

for patients diagnosed with, or recovering from COVID-19

Virtual care clinics and services

This document provides guidance to virtual care clinics and services for referring people who are diagnosed with, or are recovering from COVID-19 to multidisciplinary rehabilitation management.

Scope

This document provides information for virtual care clinics and services (e.g. telerehabilitation) for referring people diagnosed with, or recovering from COVID-19, for assessment by rehabilitation medicine and multidisciplinary rehabilitation management.

What is multidisciplinary rehabilitation?

Rehabilitation medicine can offer a wide range of services that have been shown to improve patient outcomes. Rehabilitation medicine can offer outpatient rehabilitation, telerehabilitation and rehabilitation in the home for patients with moderate or severe COVID-19. Those who experience ongoing symptoms or impairments following recovery from COVID-19 may benefit from referral to a rehabilitation team.

Multidisciplinary rehabilitation teams are led by rehabilitation medicine physicians who prioritise and coordinate a process of care by nurses, doctors and allied health therapists and medical liaison with clinical teams (respiratory, intensive care specialists, neurology, vascular, cardiac etc.) as well as oversee ongoing management of other comorbidities if required.

Timely referral of community patients to rehabilitation has shown to improve patient outcomes and mitigate the chronicity of symptoms.^{1,2}

Outpatient telerehabilitation services and rehabilitation in the home services regularly and easily integrate with existing single therapy disciplines available in virtual care teams, such as exercise-based therapy for those with cardiac or respiratory illness or disability.³

Applicability

- For people diagnosed with, or recovering from extra-pulmonary complications of COVID-19, or those with persistent symptoms who are being managed in the community.
- For those with disabilities and/or multiple comorbidities living in the community under lockdown or quarantine conditions who have high risk factors for development moderate to severe COVID-19 should they become infected. This is the concept of prehabilitation.⁴⁻⁷

Referrals

Criteria for referring a virtual care clinic managed COVID-19 patient for a multidisciplinary telerehabilitation assessment include, but are not limited to:

- on-site face-to-face requirements for stair practice, home modifications, equipment prescription, etc.⁸
- when single discipline therapists request more intensity or diversity of therapy services to improve patient outcomes
- when clinic staff perceive rehabilitation needs may not be sufficiently addressed by current care plan, such as immobility, dependence in self-care, cognitive impairment, fatigue, dysphagia, weight loss, depression and anxiety, etc.
- when a virtual care physician identifies that there is a need for introducing coordinated multidisciplinary telerehabilitation interventions, which may include allied health, nursing and medical services
- when there are a number of simultaneous rehabilitation needs including, but not limited to, dysphagia, weight loss, fatigue, new onset dyspnoea, chronic pain, anxiety, depression, cognitive impairment and difficulty obtaining government financial support, which require or would benefit from coordinated multidisciplinary rehabilitation physician-led care.

Ongoing communication

Rehabilitation medicine services include ongoing communication strategies with the referring acute teams and the preparation of virtual care teams and community services to continue care in the home for those with ongoing symptoms.

Types of communication include:

- written discharge summaries
- phone contact with GPs including case conferencing
- email and online communication with virtual care clinics
- direct phone or online contact with rehabilitation in the home teams and telerehabilitation teams for the purposes of transfer of care.

How to refer

Processes for referral by a virtual care clinic treating moderate or severe COVID-19 patients for a rehabilitation medicine assessment will vary between and from LHD to LHD but will include referrals to rehabilitation medicine team members made by phone, text, email, online, face to face etc.

If your hospital does not have a rehabilitation medicine service on site, contact can be made to the ACI Rehabilitation Community of Practice secretariat Ms Louise Sellars on 0409 382 268, to identify the closest local services.

Methodology

This document was developed in consultation with directors of rehabilitation services, rehabilitation physicians and other rehabilitation clinicians working in both the public and private sectors. The rationale for the communications and referral documents comes from five key sources:

- existing international guidelines on rehabilitation for those suffering from COVID-19⁹⁻¹⁵
- research regarding early rehabilitation for a variety of conditions that cause temporary or permanent disability¹⁶⁻¹⁸
- existing Agency for Clinical Innovation documents regarding models of care for rehabilitation¹⁹⁻²⁰
- limited evidence for early rehabilitation following COVID-19²¹⁻¹⁷
- research on the use of early rehabilitation for patients in ICU.^{9,32-43}

References

1. Australian Government National Health and Medical Research Council. Australian Clinical Practice Guidelines: Acute Pain Management: Scientific Evidence. Canberra: NHMRC; 2015. Available from: <https://www.clinicalguidelines.gov.au/portal/2505/acute-pain-management-scientific-evidence>.
2. Stroke Foundation. Clinical Guidelines for Stroke Management. Melbourne: Stroke Foundation; 2020. Available from: <https://informme.org.au/Guidelines/Clinical-Guidelines-for-Stroke-Management>.
3. Flinders University Telehealth in the Home. Tool Kit for Providing Home Based Tele-rehabilitation Services Using an iPad. Adelaide: Telehealth in the Home; 2014.
4. Durrand J, Singh S, Danjoux G. Prehabilitation. Clin Med (Lond). 2019;19(6):458-464. doi: 10.7861/clinmed.2019-0257.
5. Silver JK. Prehabilitation May Help Mitigate an Increase in COVID-19 Peripandemic Surgical Morbidity and Mortality. Am J Phys Med Rehabil. 2020;99(6):459-463. doi:10.1097/PHM.0000000000001452.
6. Zimmerman, A. Prehabilitation: Decreasing our chances of COVID-19 related complications? [Internet]. New Jersey: Christopher and Dana Reeve Foundation; 2020. [cited 31 March 2020]. Available from: <https://www.christopherreeve.org/blog/research-news/prehabilitation-decreasing-our-chances-of-covid-19-related-complications>.
7. NSW Agency for Clinical Innovation. Critical Intelligence Unit, Evidence check - Resuming elective surgery – the evidence for prehabilitation [Internet]. Sydney: ACI; 2020. Available from: https://www.aci.health.nsw.gov.au/_data/assets/pdf_file/0009/595071/20200716-Evidence-check-for-prehabilitation.pdf.
8. NSW Health. Restoration of rehabilitation services - advice for NSW health services. Sydney: NSW Health; 2020. Available from: <https://www.health.nsw.gov.au/Infectious/covid-19/communities-of-practice/Pages/guide-restoration-rehabilitation.aspx>.
9. Liang T, Yu L. Handbook of COVID-19 Prevention and Treatment. Hangzhou: Zhejiang University School of Medicine; 2020. Available from: https://www.researchgate.net/publication/339998871-Handbook_of_COVID-19_Prevention_and_Treatment.
10. Boldrini P, Bernetti A, Fiore P; SIMFER Executive Committee, SIMFER Committee for International Affairs. Impact of COVID-19 outbreak on rehabilitation services and Physical and Rehabilitation Medicine physicians' activities in Italy. An official document of the Italian PRM Society (SIMFER). Eur J Phys Rehabil Med. 2020;56(3):316-318. doi: 10.23736/S1973-9087.20.06256-5.
11. World Health Organization. Disability considerations during the COVID-19 outbreak [Internet]. Geneva: WHO; 2020. Available from: <https://www.who.int/publications/i/item/WHO-2019-nCoV-Disability-2020-1>.
12. Faux SG, Eagar K, Cameron ID, et al. COVID-19: planning for the aftermath to manage the after-shocks. Med J Aust. 2020;213(2):60-61.e1. doi: 10.5694/mja2.50685.
13. Koh G, Hoenig H. How Should the Rehabilitation Community Prepare for 2019-nCoV? Arch Phys Med Rehabil. 2020;101(6):1068-1071. doi: 10.1016/j.apmr.2020.03.003.
14. Lew HL, Oh-Park M, Cifu DX. The War on COVID-19 Pandemic: Role of Rehabilitation Professionals and Hospitals. Am J Phys Med Rehabil. 2020;99(7):571-572. doi:10.1097/PHM.0000000000001460.
15. Royal College of Anaesthetists. Clinical Guide for the prevention, detection and management of thromboembolic disease in patients with COVID-19. London: RCoA; 2020. Available from: <https://static1.squarespace.com/static/5e6613a1dc75b87df82b78e1/t/5eecb11fd-d1e0249e31904a/1592570129615/VTE-Patients-with-COVID19.pdf>.
16. Stroke Unit Trialists' Collaboration. Organised inpatient (stroke unit) care for stroke. Cochrane Database Syst Rev. 2013(9):CD000197. doi: 10.1002/14651858.CD000197.pub3.

17. Mak J, Wong E, Cameron I. Australian and New Zealand Society for Geriatric Medicine: Position Statement – Orthogeriatric Care*. Australasian journal on ageing. 30. 162-9. doi: 10.1111/j.1741-6612.2011.00557.x.
18. Ahmed NN, Pearce SE. Acute care for the elderly: a literature review. Popul Health Manag. 2010 Aug;13(4):219-25. doi: 10.1089/pop.2009.0058. PMID: 20735247.
19. NSW Agency for Clinical Innovation. NSW Rehabilitation Model of Care Principles. Sydney: ACI; 2015. Available from: <https://www.aci.health.nsw.gov.au/resources/rehabilitation/rehabilitation-model-of-care/rehabilitation-moc>.
20. NSW Agency for Clinical Innovation. Principles to Support Rehabilitation Care. Sydney: ACI; 2020. Available from: https://www.aci.health.nsw.gov.au/_data/assets/pdf_file/0014/500900/rehabilitation-principles.pdf.
21. Grasselli G, Zangrillo A, Zanella A, et al. Baseline Characteristics and Outcomes of 1591 Patients Infected With SARS-CoV-2 Admitted to ICUs of the Lombardy Region, Italy. JAMA. 2020 Apr 28;323(16):1574-1581. doi: 10.1001/jama.2020.5394.
22. Khan F, Bhasker A. Medical rehabilitation in pandemics: towards a new perspective. J Rehabil Med. 2020;52(4):jrm00043. doi: 10.2340/16501977-2676.
23. Guidon AC, Amato AA. COVID-19 and neuromuscular disorders. Neurology. 2020;94(22) 959-969. doi: 10.1212/WNL.00000000000009566.
24. NSW Agency for Clinical Innovation. Rapid evidence check: rehabilitation needs of post-acute COVID-19 patients. Sydney: ACI; 2020. Available from: https://www.aci.health.nsw.gov.au/_data/assets/pdf_file/0006/581676/20200504-Evidence-Check-Rehabilitation.pdf.
25. Li X, Guan B, Su T, et al. Impact of cardiovascular disease and cardiac injury on in-hospital mortality in patients with COVID-19: a systematic review and meta-analysis. Heart. 2020;106:1142-1147. doi: 10.1136/heartjnl-2020-317062.
26. Kipps C, Hamer M, Hill N, et al. Enforced inactivity in the elderly and diabetes risk: initial estimates of the burden of an intended consequence of COVID-19 lockdown. medRxiv. 2020.06.06.20124065; doi: <https://doi.org/10.1101/2020.06.06.20124065>. Epub ahead of print.
27. Hosey MM, Needham DM. Survivorship after COVID-19 ICU stay. Nat Rev Dis Primers. 2020;6(1). 60. doi: 10.1038/s41572-020-0201-1.
28. Taito S, Yamauchi K, Tsujimoto Y, et al. Does enhanced physical rehabilitation following intensive care unit discharge improve outcomes in patients who received mechanical ventilation? A systematic review and meta-analysis. BMJ Open. 2019;9:e026075. doi: 10.1136/bmjopen-2018-026075.
29. Chang R, Elhusseiny KM, Yeh Y, et al. COVID-19 and mechanical ventilation patient characteristics and outcomes – A systematic review and meta-analysis. medRxiv. 2020.08.16.20035691. doi: 10.1101/2020.08.16.20035691. Epub ahead of print.
30. van der Schaaf M, Beelen A, Dongelmans DA, Vroom MB, Nollet F. Functional status after intensive care: a challenge for rehabilitation professionals to improve outcome. J Rehabil Med. 2009;41(5):360-6. doi: 10.2340/16501977-0333.
31. Centre for Clinical Practice at NICE (UK). Rehabilitation After Critical Illness [Internet]. London: NICE (UK); 2009.
32. Schweickert WD, Pohlman MC, Pohlman AS, et al. Early physical and occupational therapy in mechanically ventilated, critically ill patients: a randomised controlled trial. Lancet. 2009;373(9678):1874-82. doi: 10.1016/S0140-6736(09)60658-9.
33. Calvo-Ayala E, Khan BA, Farber MO, et al. Interventions to improve the physical function of ICU survivors: a systematic review. Chest. 2013;144(5):1469-1480. doi: 10.1378/chest.13-0779.
34. Kayambu G, Boots R, Paratz J. Physical therapy for the critically ill in the ICU: a systematic review and meta-analysis. Crit Care Med. 2013;41(6):1543-54. doi: 10.1097/CCM.0b013e31827ca637.

35. Li Z, Peng X, Zhu B, Zhang Y, Xi X. Active mobilization for mechanically ventilated patients: a systematic review. *Arch Phys Med Rehabil.* 2013;94(3):551-61. doi: 10.1016/j.apmr.2012.10.023.
36. Stiller K. Physiotherapy in intensive care: an updated systematic review. *Chest.* 2013;144(3):825-847. doi: 10.1378/chest.12-2930.
37. Devlin JW, Skrobik Y, Gélinas C, et al. Clinical Practice Guidelines for the Prevention and Management of Pain, Agitation/Sedation, Delirium, Immobility, and Sleep Disruption in Adult Patients in the ICU. *Crit Care Med.* 2018;46(9):e825-e873. doi: 10.1097/CCM.0000000000003299.
38. NSW Agency for Clinical Innovation. Physical Activity and Movement: a Guideline for Critically Ill Adults. Sydney: ACI; 2017. Available from: https://www.aci.health.nsw.gov.au/_data/assets/pdf_file/0005/239783/ACI17131_PAM_Guideline.pdf.
39. Mehlhorn J, Freytag A, Schmidt K, et al. Rehabilitation interventions for postintensive care syndrome: a systematic review. *Crit Care Med.* 2014;42(5):1263-71. doi: 10.1097/CCM.0000000000000148.

Feedback on this document can be provided to
ACI-Rehab@health.nsw.gov.au.

Document information	
Version number	1
Original publication date	7 October 2020
Developed by	Members of the Rehabilitation Community of Practice Executive group with consultation from COP members
Consultation	The Intensive Care, ED, Virtual Care, Respiratory, Primary Care, Community Health and Aged Health COPs reviewed draft versions of this document. Feedback received has been incorporated
Endorsed by	Nigel Lyons
Review date	
Reviewed by	
For use by	Acute care physicians, including those working in intensive care and respiratory wards, and allied health clinicians working in acute facilities



© State of New South Wales (Agency for Clinical Innovation) 2020.

[Creative Commons Attribution-NoDerivatives 4.0 licence](https://creativecommons.org/licenses/by-nd/4.0/).

For current information go to: aci.health.nsw.gov.au

The ACI logo is excluded from the Creative Commons licence and may only be used with express permission.