

Rehabilitation in Pandemics is an integral component of a comprehensive management

In some cases, the pandemic led to a reduction of rehabilitation services due to cancellation of elective surgeries, reallocation of resources to critical items such as personal protective equipment and intensive care unit equipment, as well as the redistribution of staff.

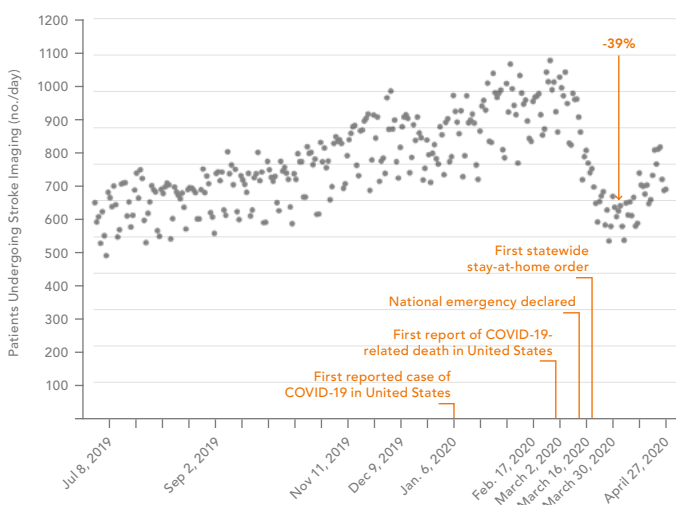
However, patients recovering from COVID-19 need rehabilitation and many facilities are now seeing an increased demand for services. Providers are challenged to satisfy the rehabilitation needs for large numbers of patients while ensuring high standards of care, maintaining social distancing and other restrictions.

Massive Drop in Stroke Evaluations

A study titled Collateral Effects of COVID-19 on Stroke, published May 8, 2020 in the New England Journal of Medicine, showed that the number of **people evaluated for acute stroke in the U.S. has dropped by 39% during COVID-19.**¹

This health emergency and the resulting adaptation of health-care facilities has also influenced the rehabilitation treatments of non-COVID-19 pathologies. Early rehabilitation is strongly correlated with optimal clinical and functional recovery and the delay of post-stroke rehabilitation is related to poor functional recovery.¹

During a pandemic, immediate care for people who experience a stroke is of critical importance to allow access to treatments and effectively reduce death and disability.



Stroke in COVID-19 Patients under 50

Five cases of large-vessel stroke in patients younger than 50 years were reported from New York in the New England Journal of Medicine. All five patients tested positive for Covid-19. Two of the patients delayed calling an ambulance because they were concerned about going to a hospital during the pandemic.²

Awareness seems advisable that social distancing, isolation, and reluctance to present to the hospital may contribute to poor outcomes after stroke.

Post Intensive Care Syndrome (PICS)

There are grounds for concern that a significant number of people will emerge from intensive care with Post Intensive Care Syndrome (PICS) and that being on a ventilator battling through COVID-19 in intensive care for more than a week may result in disability.³

During a stay in the intensive care unit (ICU) the most common form of physical impairment acquired is neuromuscular weakness, with more than 25% of individuals having poor mobility, recurrent falls, or paresis.⁴

A study in survivors of severe critical illness shows that early physical and occupational therapy during critical illness are the best evidence-based target interventions for reducing the long-term physical complications.⁴

Recent experience from Italy already reveals that especially patients with serious COVID-19 illness need a tailored neuro-motor and respiratory rehabilitation program.⁵

“Early rehabilitation of the COVID-19 patients can enhance pulmonary, respiratory function, reduce complications, improve function, cognitive impairments and quality of life.”⁶

Optimizing outcomes

Rehabilitation may reduce complications associated with admission to an ICU, such as post intensive care syndrome (PICS); it aims to optimize a patient’s recovery and reduce the extent of disability. Rehabilitation interventions can help to address many consequences of severe COVID-19, including physical, cognitive, and swallowing impairments, and provide psychosocial support. Older patients, and those with pre-existing health conditions, may be more vulnerable to the effects of severe illness, and rehabilitation can be particularly beneficial for maintaining their prior levels of independence.⁶

Rehabilitation improves the health outcomes of patients with severe cases of COVID-19 and benefits health services through.⁷

By using powerful novel technologies in rehabilitation such as robotics, sensor technology, virtual reality and gamification, Tyromotion makes it possible to guide patients through the rehabilitation process with more motivation, increased intensity and dosage of therapies.

Rehabilitation technology and robotics can help with individually tailored and highly intensive therapy as well as with providing therapy to more patients.^{8,9}

“As in any disaster, the role of medical rehabilitation in pandemics is an integral component of comprehensive management.”⁶



TYROMOTION

Tyromotion GmbH
Bahnhofgürtel 59
8020 Graz, AUSTRIA

+43 316 908 909
office@tyromotion.com

OMEGO® Plus may help with rehab during COVID-19 by supporting early rehabilitation & a comprehensive therapy program within one device.

- Reduce number of times a patient moves between different devices.
- OMEGO® Plus addresses endurance, strength and coordination all in one device.
- Disinfection once per session and not after every device.
- Software guided goal-oriented therapy sequences can reduce the number of physical interactions between patients and therapists.
- Multiple OMEGO®s can be safely spaced apart and allow the treatment of several patients at once by a single therapist. This facilitates continuous indirect supervision of all patients with minimal direct contact.



This is why we believe OMEGO® Plus can help on the pathway to recovery during a pandemic.

References

- ¹ Kansagra AP, Goyal MS, Hamilton S, Albers GW. Collateral Effect of Covid-19 on Stroke Evaluation in the United States. N Engl J Med. 2020 May 8.
- ² Oxley TJ, Mocco J, Majidi S, et al. COVID-19 Cases. Large-Vessel Stroke as a Presenting Feature of Covid-19 in the Young. N Eng J Med. 2020 May 13.
- ³ https://www.rehabpub.com/conditions/fear-of-post-intensive-care-syndrome/?campaign_type=newsletter
- ⁴ Fan E, Dowdy DW, Colantouni E, et al. Physical Complications in Acute Lung Injury Survivors: A 2-Year Longitudinal Prospective Study. Crit Care Med. 2014;42(4):849–859.
- ⁵ Brugliera L, Spina A, Paola Castellazzi P, et al. Department of Rehabilitation and Functional Recovery, I.R.C.C.S. San Raffaele Scientific Institute, Vita-Salute University, Milan. Rehabilitation of COVID-19 patients. J Rehabil Med 2020; 52:4.
- ⁶ Khan F, Amatya B. Medical Rehabilitation in Pandemics: Towards a new perspective. J Rehabil Med. 2020 Apr 9.
- ⁷ Pan American Health Organization (PAHO). Rehabilitation considerations during the COVID-19 outbreak. 2020.
- ⁸ Aprile I, Germanotta M, Cruciani A, Loreti S, Pecchioli C, Cecchi F, Montesano A, Galeri S, Diverio M, Falsini C, Speranza G, Langone E, Papadopoulou D, Padua L, Carozza M. Upper Limb Robotic Rehabilitation after Stroke: A Multi-center, Randomized Clinical Trial. J Neurol Phys Ther. 2020 Jan; 44(1): 3-14.
- ⁹ Calabrò RS, Accorinti M, Porcari B, Carioti L, Ciatto L, Billeri L, Andronaco VA, Galletti F, Filoni S, Naro A. Does hand robotic rehabilitation improve motor function by rebalancing interhemispheric connectivity after chronic stroke? Encouraging data from a randomised-clinical-trial. Clin Neurophysiol. 2019 May; 130(5):767-780.