

**TITLE:** Decision Making: Physical Therapist Intervention for Patients With COVID-19 in a Geriatric Setting

**RUNNING HEAD:** Patients With COVID-19 in a Geriatric Setting

**TOC CATEGORY:** COVID-19

**ARTICLE TYPE:** Point of View

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**KEYWORDS:** Geriatrics, Decision Making, COVID-19, Physical Therapy Department: Hospital

**ACCEPTED:** June 14, 2020

**SUBMITTED:** May 24, 2020

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Amidst the global outbreak of the COVID-19 virus, in March 2020, there was a significant increase in the number of people diagnosed with COVID-19 in Israel, including a large number within the elderly population. As of the end of March 2020, the number of Israeli residents diagnosed with coronavirus approached 6000, of whom nearly 20% were 60 or older.<sup>1</sup> With this outbreak, and its repercussions for the geriatric population, the Israeli medical system acted quickly to create facilities that could admit patients with COVID-19.<sup>2</sup> One such COVID-19 unit was instituted at Shoham Geriatric Medical Center (SGMC), a 600-bed hospital in Israel, consisting of the following departments: rehabilitation, long-term skilled nursing, chronic mechanical ventilation, dementia, subacute inpatient, and palliative care. The treatment plan in a geriatric setting, such as SGMC, is focused on improving a patient's quality of life via a multidisciplinary team approach.

Concern over the outbreak of the COVID-19 virus among older adults and the introduction of specialized treatment units in SGMC to treat patients with COVID-19 required the physical therapy team to prepare for provision of tailored services to this unique patient population. Experience with acute respiratory physical therapy care in a subacute geriatric facility is limited as compared to in an acute hospital setting.

During the initial phase of the crisis, in March 2020, prior to admission of COVID-19 patients, steps were taken to prepare the SGMC physical therapy team for providing acute treatment. The first step was basic respiratory therapy training to all staff members. The second step was forming a working group that included a respiratory physical therapist, a rehabilitation physical therapist, and the director of physical therapy services. The working group's purpose was to develop COVID-19 treatment guidelines based on a review of current practices in Israel and worldwide.<sup>3, 4, 5, 6</sup> Based on this review, patients with COVID-19 were divided into three categories as defined in the initial proposed physical therapy guidelines in Israel: mild, moderate, and severe.<sup>4</sup> Mild respiratory symptoms include dyspnea with exertion and/or secretions. Moderate respiratory symptoms include one or more of the following: hypoxemia, dyspnea at rest or with light exertion, secretions, dry persistent cough, or anxiety affecting breathing pattern; similar to the three intermediate respiratory screening levels in other guidelines.<sup>6</sup> Severe respiratory symptoms include one or more of the following: ARDS, bilateral pneumonia, or severe dyspnea at rest; these patients are primarily sedated and mechanically ventilated.

On April 7, SGMC opened a COVID-19 unit with 32 beds. Patients admitted to the department were diverse, including transfers from acute hospitals, long term care facilities (LTC), and assisted living facilities (ALF). The patients were all characterized as mild and most were asymptomatic. However, several of the patients with a mild diagnosis for COVID-19 had a moderate to severe deficit in function in relation to their baseline functional status (Table). Based on the type of patients admitted to SGMC, the working group determined that the initial guidelines developed for acute care settings are not suitable for the COVID-19 unit in a subacute geriatric setting. The initial guidelines focused primarily on the effects of the respiratory condition and less on functional status and its impact on the hospitalized older adult.<sup>7</sup> While

COVID-19 guidelines commonly focused on limiting unnecessary contact between the staff and patients,<sup>5,6</sup> due to the fact that most of the patients were categorized as mild and asymptomatic with a risk of deterioration in functional status, it was necessary to develop guidelines to support physical therapy intervention in the geriatric setting.

The nature of the patients admitted to SGMC required a re-evaluation and development of a tailored intervention program that addressed their diverse functional needs. The revised SGMC COVID-19 Physical Therapy Treatment Guidelines partitioned the geriatric patients into mobility groups, based primarily on functional deterioration and secondarily on respiratory condition as a result of the COVID-19 virus. The three mobility groups are: Independent/ Modified Independent/ Supervision (I/ Mod I/ Sup); Minimal/Moderate Assistance (Min / Mod A); Maximal/ Total Assistance (Max / Total A). The decision-making process for each patient is thus designed to address both functional and respiratory impairments. See decision-making tree in the Figure.

Once the physical therapy team receives a referral for evaluation and treatment, the assigned therapist then assesses the patient's current functional status and assigns the patient to one of the three mobility groups. At this point, the therapist compares the patient's current status with baseline function. Concurrently, the therapist assesses the respiratory state which will influence the decision on the need for an intervention. The original national categories of mild, moderate, and severe respiratory state were preserved. If the patient is below baseline functional level of mobility and/or has any respiratory impairments, he will then be treated according to the severity of his illness. A patient who currently requires maximal to total assistance with mobility, must be evaluated according to his/her ability to tolerate therapy, follow orders, and overall responsiveness.

During the course of 5 weeks, using SGMC COVID-19 Physical Therapy Treatment Guidelines, we provided 108 treatments; 89 were direct contact treatment in the unit and 19 were conducted via tele-rehabilitation (Table). Direct contact treatment was preferred for Min / Mod A and Max / Total A patient groups. This treatment was provided by set personnel that work solely in the COVID-19 unit in two-hour shifts in negative pressure rooms. Treatment staff was required to use personal protective equipment (PPE) for airborne precautions, including a full-body suit, high filtration mask (N95), and eye protection (face shields). It is important to note that the PPE increases body heat and discomfort, while limiting free movement, therefore increasing the difficulty for treatment and exercise with the patients. While tele-rehabilitation has become a common and preferred treatment tool worldwide following the outbreak of COVID-19,<sup>8</sup> we found it to have limited efficacy for the geriatric patients in our COVID-19 unit. Tele-rehabilitation was a challenge for the elderly patient that is not technology savvy or for patients with cognitive impairments. For the physical therapy team, the lack of hands on assessment and considerations for patient safety also reduced use of tele-rehabilitation. Tele-rehabilitation was used for the I / Mod I / Sup patient group who were also cognitively intact and technology oriented patients. Tele-rehabilitation was also used for consultation with a respiratory physical therapist located outside of the COVID-19 unit. During treatment, symptoms such as respiratory distress at rest and change in cognitive status, serve as red flags to stop intervention.

The working group recognized that the treatment approach for geriatric patients should continue to promote improvement or preservation of existing functional capabilities in order to maintain quality of life. This is in line with recommendations for direct involvement of physical therapy services in both planning and delivery of treatment in order to avoid deterioration and a long-term negative impact on older adults during the COVID-19 pandemic.<sup>9</sup> However, because

of the patients' COVID-19 status, the treatment methods may be altered due to concern for the safety of the staff, as well as fear of the patient's potential respiratory deterioration. The decision-making tree helps to clarify which patients require and can tolerate treatment. In addition, it assists in selection of appropriate treatment, increasing efficacy and efficiency.

Our review demonstrates that the existing guidelines for treatment of COVID-19 patients primarily focused on respiratory status. Based on our experience with COVID-19 patients, however, we found that the role of physical therapy services in a geriatric setting is to treat the overall functional level of the patients while taking into consideration respiratory symptoms. In summary, we encourage physical therapists working in a geriatric setting to emphasize patient functional abilities and prioritize treatment to improve quality of life, even during a health emergency such as COVID-19. Therefore, we suggest adoption of criteria, such as those presented in the Figure.

### **Author Contributions:**

Concept / idea / research design: N. Levi, K. Ganchrow

Writing: N. Levi, K. Ganchrow, M. Gheva

Data collection: N. Levi

Data analysis: N. Levi

Project management: N. Levi

**Funding: There are no funders for this submission.**

### **Disclosures**

The authors completed the ICMJE Form for Disclosure of Potential Conflicts of Interest and reported no conflicts of interest.

### **References**

1. Ministry of Health Epidemiological Report: Novel Coronavirus (COVID-19), 2020. [https://www.health.gov.il/PublicationsFiles/covid-19\\_epi3.pdf](https://www.health.gov.il/PublicationsFiles/covid-19_epi3.pdf). Accessed June 14, 2020.
2. Protecting Fathers and Mothers: Field update, 2020. <https://govextra.gov.il/media/18059/magen-update-20042020.pdf>. Accessed June 14, 2020.
3. Cascella M, Rajnik M, Cuomo A, et al. Features, evaluation and treatment coronavirus (COVID-19), 2020. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020 Jan. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK554776/>. Accessed June 14, 2020.
4. Hofi D, Ginat E, Yosef- Brauner O, Lingo E, and Paiuk I. Proposed outline for physical therapy treatment of patients with COVID-19, 2020. [http://www.ipts.org.il/\\_Uploads/dbsAttachedFiles/77777.pdf](http://www.ipts.org.il/_Uploads/dbsAttachedFiles/77777.pdf). Accessed June 14, 2020.
5. The National Department of Physical Therapy and Ministry of Health: Standards of physical therapy care for patients with COVID-19, 2020. [http://www.ipts.org.il/\\_Uploads/dbsAttachedFiles/amot.pdf](http://www.ipts.org.il/_Uploads/dbsAttachedFiles/amot.pdf). Accessed June 14, 2020.
6. Thomas P, Baldwin C, Bissett B, et al. Physiotherapy management for COVID-19 in the acute hospital setting: clinical practice recommendations. *J Physiother.* 2020;66:73-82.
7. Brummel NE, Balas MC, Morandi A, Ferrante LE, Gill TM, Ely EW. Understanding and reducing disability in older adults following critical illness. *Crit Care Med.* 2015;43:1265-1275.
8. World Confederation for Physical Therapy. Report sets out future of digital physical therapy practice. <https://www.wcpt.org/news/report-sets-out-future-of-digitalphysical-therapy-practice>, 2020. Accessed April 23, 2020.
9. World Confederation for Physical Therapy. WCPT response to COVID-19: Briefing paper 2, 2020. <https://www.wcpt.org/sites/wcpt.org/files/files/wcptnews/COVID19-Briefing-paper-2-Rehab-PT-May2020.pdf>. Accessed June 14, 2020.

Table: Demographic Characteristics SGMC COVID-19 Unit<sup>a</sup>

<b>Characteristic</b>	<b>N = 47</b>
<b>Sex</b>	
Male	14
Female	33
<b>Age (y)</b>	
Age range	38-96
Average age	80.8
Median age	83.0
<b>Patient origin of admission</b>	
Acute hospital	8
Dementia care unit	13
Long term care facility	22
Skilled nursing facility	2
Assisted living facility	2
<b>Patient functional level on arrival</b>	
I / Mod I / Sup	16
Min / Mod A	12
Max / Total A	19
<b>Number of treatments</b>	
Direct contact treatment	89
Tele-rehabilitation	19
<b>Average hospitalization (Days)</b>	21.9

<sup>a</sup>April 6, 2020 – May 14, 2020.

**Figure Caption**



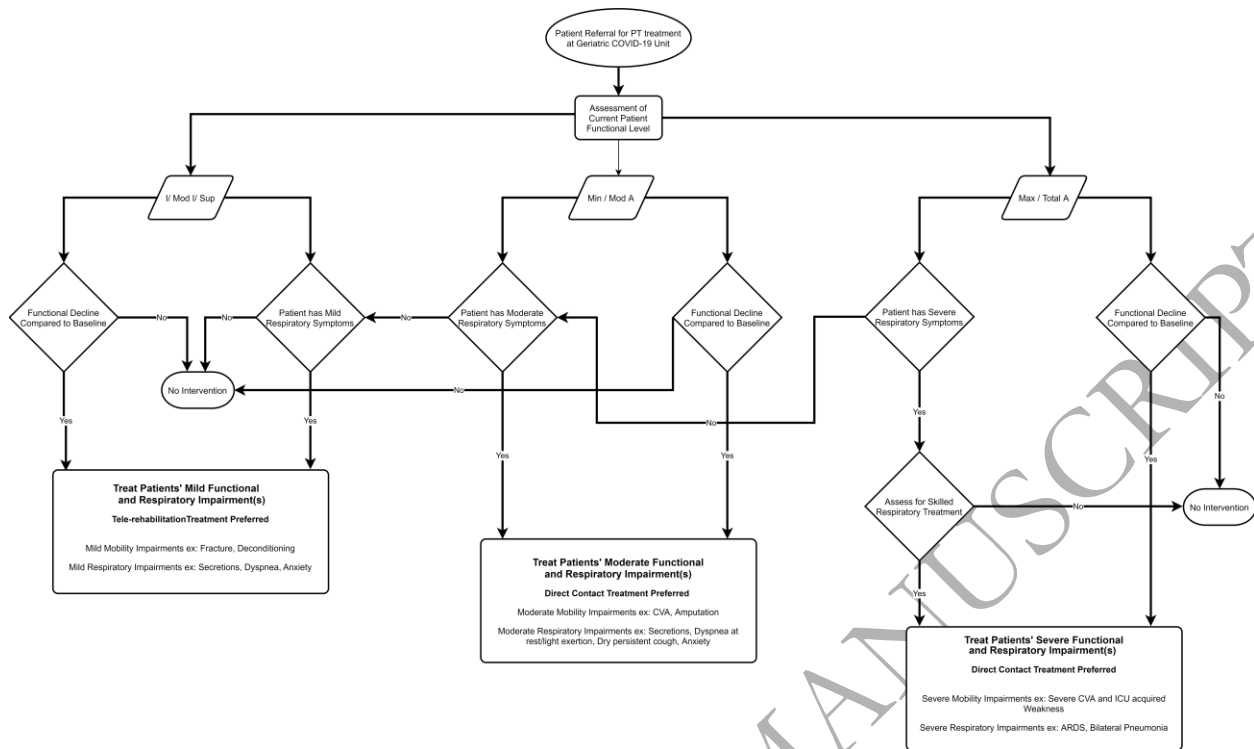


Figure 1 Decision making tree.