

# **Persistent Symptoms in Long-Haul COVID Patients Emphasize Need for Specialty Hospital Care**

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## About the Author

**Dr. John Votto** is a pulmonary physician who was CEO of Hospital for Special Care, a long term acute care hospital, for approximately 20 years. He was a Professor of Clinical Medicine at University of Connecticut with extensive publications in the areas of pulmonary rehab and prolonged medical ventilation. He is now Chief Medical Officer of the National Association of Long Term Care Hospitals (NALTH). He has participated in many technical expert panels for Medicare in the areas of quality of care and long term acute care hospitals.

## Introduction

As the nation enters its 18<sup>th</sup> month since the declaration of the COVID-19 Public Health Emergency (PHE), vaccination rates are increasing, effectively controlling severe illness for the vaccinated population. Although health systems are continuing to operate under heightened levels of patient complexity and volume (somewhat stemmed by the return of patients who deferred care during the pandemic), relief from the surges experienced during the past year and a half has enabled some space for public and private health constituents to analyze the effects—both physical and mental—of the pandemic.

To date there has been a significant focus on the symptoms present during COVID-19, but increasingly researchers are releasing studies that have analyzed symptoms and conditions that persist after recovery from COVID-19. Pain, fatigue, and breathing difficulties have thus far been among the most common symptoms during the post-COVID recovery period (generally 30-60 days post-onset of the virus, though persistent conditions have started to extend this period to longer than 12 weeks).<sup>1</sup> Mental health conditions such as anxiety and depression have also increased in prevalence.

Patients with these symptoms have been commonly referred to as “long-haul” or “long-COVID” patients. The research varies in terms of the specific timing in order to diagnose long COVID, but clinicians have suggested that long-haul patients are those who are post-viral with symptoms that persist after 12 weeks of inception of the virus.<sup>2</sup> This is compared to patients who have experienced relief from symptoms by or before four weeks.

Understanding the key symptoms of the long-haul patient population is important not only for appropriate treatment in the short-term acute-care hospital (STACH)—or more particularly, the Intensive Care Unit (ICU)—but also for subsequent discharge to post-acute specialty care hospitals such as long-term acute-care hospitals (LTCHs). LTCHs are hospitals that care for medically complex patients who require acute-care hospital services for an extended period.

There is clearly a difference between those defined as long-haul patients and those who have a long hospital course. Some overlap exists in that many patients who have prolonged hospitalization also have prolonged symptoms after discharge from acute care, as well as post-acute care. The conditions that have been identified with long-stay and long-haul patients are part of the core competencies within LTCHs, meaning that these hospitals were prepared to admit and treat patients at the onset of the pandemic and in the depths of the pandemic as patient mix became more complex. LTCH care complexity increased during the pandemic, as did all levels of the health care continuum; however, the LTCHs seemed to do it more seamlessly as veterans of that level of care. Therefore, they only needed to expand numbers and not learn ‘new tricks.’

This brief paper is a preliminary exploration of the long-haul patient and a discussion of the integral role LTCHs have and continue to play in the treatment and recovery of this patient population. The paper concludes with key learnings and recommendations for the post-COVID health care landscape.

## Long-haul Patient Population Defined

In one of the broadest studies performed to date of COVID-19 patients (nearly two million patients),<sup>3</sup> almost a quarter of patients were identified as having a post-COVID condition 30 days or more after their index date of first diagnosis with COVID-19. Notably, this includes patients who were asymptomatic. This statistic is doubled when evaluating only hospitalized patients; almost half of patients hospitalized for COVID-19 experienced at least one post-COVID condition 30 days or more after their index date and after discharge from the STACH.

The five most common post-COVID conditions across all ages, in order from most to least common, were pain, breathing difficulties, hyperlipidemia (abnormally high concentration of fats or lipids in the blood), malaise and fatigue, and hypertension. One key limitation of this study is that it only included patients with commercial/private insurance or Medicare Advantage. Clinicians have said that those without insurance or with Medicaid are often “more likely to have worse outcomes,” suggesting the findings could understate the prevalence of some post-Covid health conditions.<sup>4</sup>

Indeed, additional studies have demonstrated a significantly increased risk of post-COVID conditions. For example, one study<sup>5</sup> performed in Italy reported that 87% of hospitalized patients still had symptoms 60 days after inception of the virus; meaning that just 13% of the participants were symptom free two months after their COVID diagnosis. Primary symptoms included fatigue and dyspnea (difficult/labored breathing), with more than 40% of patients reporting the latter. Joint and chest pain were reported in 27% and 22% of the patients, respectively. Although respiratory and pain conditions have thus far been among the most



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prevalent conditions reported, symptoms vary across studies and can include a diverse range of issues beyond the top reported conditions, including anxiety, intestinal issues, and skin issues. The “long tail” of symptoms—including physical as well as mental health conditions—“drives home the point that long Covid can affect nearly every organ system,” commented Dr. Ziyad Al-Aly, chief of the research and development service at the VA St. Louis Health Care System.<sup>6</sup>

Together these studies urge the importance of access to and monitoring by hospital levels of care. As licensed hospitals, LTCHs have the same capabilities as STACHs, and this expertise has become increasingly valuable towards appropriately managing the long-term needs of the patient with persistent symptoms, as well as improving assimilation back into the community.

## The Role of LTCHs during the PHE

- The critical role LTCHs have played during the PHE has been documented.<sup>7</sup> Viruses such as COVID-19 that are spread through droplets tend to manifest in pulmonary-related conditions, which match the clinical focus and strengths of LTCHs.<sup>8</sup> The emergence of the long-haul patient has made the unique capabilities that LTCHs possess even more pertinent. Their key clinical competencies support the perspective that “COVID patients fit into what [LTCHs] are familiar with”<sup>9</sup> and include the following: Advanced staffing competencies (including a high ratio of respiratory therapists, pulmonologists, and specialized teams that focus on the chronically critically ill) that enable close medical monitoring to treat ICU-level patients transferred from general acute-care hospitals. RML Specialty Hospital, an LTCH system in Chicago with 184 beds, demonstrated this capability in practice, stating that 90% of all their patient admissions in 2020 were discharged directly from the ICU.<sup>10</sup> These skilled staff members perform services that include mechanical ventilation, noninvasive ventilator assistance, high-flow oxygen therapy, and weaning that are especially relevant to severely respiratory compromised patients such as those battling COVID-19.
- LTCHs have an unmatched clinical expertise in the specific area of respiratory care that is demonstrated through their daily practices, with some systems “operating 100 ventilators on any given day.”<sup>11</sup> As licensed hospitals, LTCH settings are appropriately configured to manage the critically ill. This was made apparent in their ability to safely separate patients, treat them in negative-pressure rooms, and quickly convert their existing settings to COVID-focused hospitals depending on the need of their referral partners. The operational focus and care delivery model LTCHs possess mean they were able to ramp up quickly to assist their partner STACHs, whether through admitting surge patients that allowed referring hospitals to maintain throughput in their ICUs or admitting COVID-19 patients into their own specialized units.
- LTCHs are focused not only on treatment but recovery, and therefore utilize physical and occupational therapists, speech language pathologists, and psychologists. These specialists are well-versed in post critical care syndrome, which COVID long-haul conditions seem to mimic. Delirium, a common condition in post critical care syndrome, typically presents in over half of patients discharged from the ICU,<sup>12</sup> underscoring the importance of possessing not just medical but behavioral health capabilities onsite.
- Clinicians have recognized the diverse needs of COVID-19 patients, stating, “People with long Covid need multidisciplinary care ... and our health systems should adapt to this reality and develop capacity to deal with these patients.”<sup>13</sup> Specialty hospitals such as LTCHs already house a range of competencies that align with COVID-19 patient conditions and support integrated care models that address physical, as well as behavioral, conditions. Importantly, [since] delays in care can have significant implications for a patient’s path to recovery,<sup>14</sup> it is vital that the services LTCHs provide continue to play an important role in STACH discharge planning.

## Conclusion

### *Learnings*

The ongoing challenges related to treating COVID-19 patients can remind health systems, payers, and patients of the clinical capabilities that exist in an LTCH. Prior to the COVID-19 PHE, these key constituents may have held outdated views of LTCHs. The ability to admit and treat, ICU-level patients must be considered by states and local governments in their ongoing clinical and emergency planning. As noted in this work, LTCHs are licensed hospitals and, therefore, can manage acute hospital levels of care, including patients who require care immediately after life-threatening situations.

Due to more restrictive reimbursement policies, the number of LTCHs in the nation has decreased dramatically, from ~430 in 2015 to ~360 LTCHs today.<sup>15</sup> This trend is worrisome given the contributions LTCHs have made, and calls into question the continued access for this level of care. The expertise, clinical capabilities, and infrastructure LTCHs possess underscore that they are an essential part of the strategic reserve from a community perspective and must be viewed as such, suggesting that policymakers should look at LTCHs as a different type of institution than how they were viewed a few years ago.<sup>16</sup>

### *Recommendations*

The pandemic disrupted an antiquated post-acute care system. Typical care pathways were shifted to better fit the needs of a more acute, complex patient mix. Now, the nation is dealing with the repercussions of a virus that is showing more longitudinal effects than previously believed. There is a public health imperative to codify what we have learned during and after the pandemic, not only so



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we can better prepare for the next public health emergency, but so we can start building a more adaptable health care system that can flex with the needs of patients and, importantly, ensure appropriate access to post-acute care resources, especially specialty hospitals.

The recommendations below can be used to foster new discussions among providers, payers, and other key health care constituents at local and national levels.

- 1) **Actively engage LTCHs to inform future research.** Meaningful research is underway regarding treatment and long-term recovery of COVID-19 patients. This research should be continued, but it is important that LTCHs participate and share their on-the-ground learnings. Their contributions will ensure that research considers not just the theory, but also the practice of treating complex patients in a pandemic environment.
- 2) **Improve support for COVID-recovering patients assimilating back into communities.** The clinical effects of long COVID are just as important as the symptoms during the acute phase of COVID-19, since they impact the patient, as well as local communities. For example, 69% of long-haul COVID patients have reported they are working reduced hours, with nearly a quarter of these respondents not working at all due to their health conditions.<sup>17</sup>

Just as there are specific protocols for the institutional treatment of COVID-19, there is a need to develop an accessible post-acute care pathway that has both physical and behavioral monitoring and support. New post-discharge care pathways should consider the discharge options that were available to the patient, how there might be difficulties in the future with these options, and how to engage in effective follow-up care. Clinicians have floated the idea of post-COVID clinics that would address the multidisciplinary needs of COVID-recovering patients, including psychological requirements. Indeed, some have already formed, and there is already momentum regarding these clinics, including unique ways in which to finance and, importantly, staff them. For example, at University of California-San Francisco, a select group of faculty members staff their post-COVID clinics, and some mental health professionals volunteer their time. Mount Sinai has had success in recruiting members and support staff from departments where elective patient caseloads have dropped.<sup>18</sup> LTCHs should be a part of these models since they treated the longest-staying hospitalized patients who will need the most support when returning home.

- 3) **Enhance access to and quality of health care for people of color.** The COVID-19 pandemic underscored the need for improved equality in terms of access to health care services. Studies showed that racial minorities were three times as likely to be hospitalized with COVID-19 as white populations,<sup>19</sup> making it even more important that barriers to care are eliminated for these populations. This trend was apparent not only for COVID-19 patients, but also for non-COVID patients who deferred care due



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to economic pressures during the pandemic. For example, a poll conducted in February 2021 showed that African Americans were almost twice as likely to not be able to afford care compared to white adults.<sup>20</sup>

Some health care systems are already taking steps to address these gaps. For example, during the pandemic, RML Specialty Hospital “admitted over 200 COVID-positive ventilated patients, 75% of [whom] were from Black and Brown communities, and 75% of [them] were weaned from the ventilator,”—an outcome that was better than the control group.<sup>21</sup> Improvements start with providers themselves, who must promote and value a diverse employee base and engage with local communities to increase awareness and establish trust and transparency. In areas where LTCHs are not as accessible, these hospitals can evaluate how their services could be extended virtually to serve more communities, perhaps via telehealth or other partnerships.

- 4) **Reduce legislation that preserves unnecessary barriers to care.** States can support the needs of their local communities by introducing new flexibilities that enable the health care system to adapt to the current needs of the population. For example, state Certificate of Need (CON) protocols could be more flexible during a PHE to allow for rapid use of reserve of formant beds. As part of this

process, LTCHs could educate local constituents and articulate the ways in which they uniquely serve the community.

**5) Support LTCHs with resources that can be quickly deployed during an emergency.**

Acute care hospitals must not be hamstrung by lack of resources. Before a new PHE, local and national governments must ensure there are sufficient resources to manage the many demands of a pandemic. That way, at the inception of a new PHE, these entities could quickly target funds to help LTCHs rapidly expand capacity to support their referring hospitals, e.g., via more high-flow

oxygen services and the addition of negative pressure rooms. Importantly, these funds could also be used to retain and add staff such as critical-care nurses and respiratory therapists. The CARES Act-Section 3711 waivers and other flexibilities enacted during the COVID-19 PHE are examples of the types of funding and resources that could be used to assist LTCHs during times of emergency. Given the timely response by LTCHs in admitting and treating patients, these waivers should be part of the emergency response going forward.



# Endnotes

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## About HCFI

The McCourt School established the Health Care Financing Initiative (HCFI) in June 2018 with the generous support of the Institute for Critical Care Foundation (ICCF). ICCF is a 501(c)(3) private operating foundation that promotes academic research related to the delivery of healthcare to critically ill or injured patients ([www.instituteforcriticalcare.org](http://www.instituteforcriticalcare.org)).

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