Long COVID: The Pandemic’s Undocumented Long-Term Sequelae

By Christine Kilgore

Amidst a dearth of research on long COVID in post-acute and long-term care (PALTC), leaders and clinicians in the field have been taking note of worsening or new heart and lung problems, accelerated frailty and functional decline, prolonged delirium, unusual skin manifestations, and other symptoms and changes in individuals in skilled nursing facilities after SARS-CoV-2 infection.

Diane Sanders-Cepeda, DO, CMD, senior medical director for UnitedHealthcare (UHC) Retiree Solutions and a member of the AMDA – The Society for Post-Acute and Long-Term Care Medicine Board of Directors, is one of these leaders. Early in the pandemic, she noticed that patients and residents who survived COVID-19 were “not rehabbing as expected” and were not faring as well as would be expected after other acute illnesses.

Dr. Sanders-Cepeda began tracking published research about long COVID, social media discussions, and the experiences of her UHC members — and then speaking at state-level Society meetings and other forums about the importance of understanding post-acute sequelae of COVID (PASC), her favored term used to describe post-COVID conditions seen in PALTC.

“We need to have a high level of suspicion that post-acute sequelae of COVID can be occurring in our population; we need to be documenting it, and we need to be coding what we’re seeing as well as using the post-COVID language,” Sanders-Cepeda said.

Behavioral Health Integration and Training — A Model to Extend the Reach of Psychiatry

By Lea Watson, MD, MPH

A majority (60% to 80%) of nursing home residents have one or more psychiatric diagnoses, including dementia (Med Care Res Rev 2010;67:627–656). And post-acute and long-term care (PALTC) residents take an astonishing number of psychoactive medications, most prescribed by nonpsychiatrists for a variety of indications (J Gerontol Soc Work 2012;55:444–461). Finding the best model to provide meaningful psychiatric services in PALTC, however, is a perennial struggle (Psychiatr Serv 2002;53:1390–1396).

Psychiatric symptoms and requests for help to manage them with medications are widespread in the industry, yet practical solutions are seldom available due to the shortage of psychiatry-trained prescribers and the scarcity of geriatric psychiatrists working in the PALTC space.

The traditional model of sending patients out to limited community resources is fraught with barriers and prone to miscommunication, and still the current model of psychiatric care is not sustainable.

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[ICD-10] condition code,” she told Caring.

Such attention is important, she says, for driving anticipatory care planning and conversations with families, collaborating with other care team members, pushing for coverage from payors of needed care, and advocating for future research.

Ultimately, Dr. Sanders-Cepeda says, teams need management guidance that offers steps for looking at this condition and for being proactive in our engagement of individuals who may have this condition.”

Early Assessments After COVID

A few published studies have quantified the risk of PASC or long COVID in mainly community-based people aged 65 and older. A Centers for Disease Control and Prevention study of electronic medical records for almost 2 million people with a COVID-19 diagnosis in the first 18 months of the pandemic found that 45.4% of those aged 65 and older had one or more of 26 conditions often attributable to post-COVID, compared with 19% of uninfected individuals. This translates to one in four older survivors having potential post-COVID conditions. (One in five of younger patients experienced such incident conditions.)


In her population, the worsening of physical and occupational therapy—respiratory failure, dementia, and post-viral fatigue — had increased risk differences.

Dr. Sanders-Cepeda said her experience does not at all echo this second finding of the BMJ study, but she shares the data and praises the CDC’s recommendation for routine assessment after COVID infection.

“We should be at the point where [skilled nursing facility] teams are proactively looking for [post-COVID] symptoms,” she said. “We need early assessments, and they need to be interdisciplinary. The pharmacists, the nurses on the floor, the nursing administration, and the physical and occupational therapists — we need them all at the table. And our health systems need to understand that [SARS-CoV-2] is something different.”

Dr. Sanders-Cepeda advises using the ICD-10 code U09.9 for Post COVID-19 Condition. Unspecific, whenever residents/patients “have any symptoms consistent with the World Health Organization’s [WHO] definition of PASC.” WHO defines a “post-COVID condition” as one that occurs in individuals “with a history of probable or confirmed 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.”

One should bill first for the conditions seen, such as fatigue, then use the new code, she said. (The code became effective in October 2021.)

For Ozioma Erondu, DNP, CRNP, AGNP-C, who specializes in PALTG, more frequent visits and closer monitoring, with more frequent laboratory tests that include a look at electrolytes and albumin, have become routine after COVID-19.

Her experiential picture of long COVID in nursing homes has been one of “worsening, decompensated lungs,” suboptimal oxygen saturation, dementia that progresses more rapidly than in those without a history of COVID-19, chronically poor appetite and weight loss, worsening heart problems, and a more rapid progression of cognitive decline in those without previously diagnosed dementia.

Months out from COVID-19, “we’re seeing more dyspnea on exertion, and those [without a history] of murmurs now having murmurs,” said Dr. Erondu, who works for Personal Physicians Care in Columbia, MD, and until recently worked with Personalized Health Partners. “Also more wheezing and coughing, shortness of breath ... and [persistent] pleural effusion without cough in patients who never had asthma, never smoked or had a diagnosis of chronic obstructive pulmonary disease.”

Anecdotally, clotting issues and deep vein thrombosis, which she saw with the delta variant, have not been significant issues more recently, she noted.

Regarding management, Dr. Erondu notes, “in [residents who are] approaching cachexia, we are treating immediately, with more use of medications and more nutritional supplements.”

At Johns Hopkins Bayview Medical Center in Baltimore, the post-COVID approach is “what the approach should be for any significant condition, which is following up on how the illness has impacted the functional status, cognitive status, and quality of life” of the individual, said Michele Bellantoni, MD, CMD, the center’s associate director of PALTG. “Good geriatric care serves us well,” she said.

In her population, the worsening of heart failure, emphysema, and other chronic conditions — worsening that “might not have occurred otherwise” — is the main challenge. “The chronic conditions become more difficult to manage,” she said.

Rehabilitation Needs

Research underway in Canada is expected to document how long COVID “presents differently” in long-term care than it does in younger populations in the community, said Akher Mithani, MD, regional medical director of long-term care/assisted living for the Fraser Health Authority in Surrey, BC.

Dr. Mithani is the principal investigator of a multipronged retrospective cohort study there on long-term sequelae of COVID-19 in long-term care residents. The Fraser Health Authority has more than 9,800 long-term care beds.

In a letter to the editor published in May 2022 in the Journal of the American Geriatrics Society, Dr. Mithani and colleagues appealed to the research community to “rapidly address the dearth of research about long COVID among residents in LTC homes” in order to inform guidelines for long COVID management [May 14, 2022, doi: 10.1111/jgs.17889]. “COVID-19 survivors in LTC have been found to have poorer outcomes related to malnutrition, weight loss, and frailty compared to the non-infected,” they wrote.

And in an interview in June, Dr. Mithani, who is also on the faculty of the University of British Columbia’s CARINGFORTHAGES.COM

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Department of Psychiatry, said that across the Fraser system, he has seen “a huge amount of functional deterioration” in the months after COVID infection, rapid trajectories of dementia — “almost as if COVID has acted as a catalyst” — and depressive symptoms that are not fully attributable to isolation.

Thus far, there appear to be two categories of LTC residents with long COVID, he said: Those who are “detiorating functionally and/or cognitively at a much faster rate than one would expect otherwise” — and for whom a palliative approach becomes key to management — and those for whom there is potential for rehabilitation. What sets individuals down one path or the other is one of the questions he hopes to answer through the cohort study. The study will compare symptom profiles, course of illness, and care of COVID-19 survivors with or without long COVID.

Dr. Sanders-Cepeda, whose role at UHC Retiree Solutions includes designing and developing clinical programs that span the geriatric continuum (home, hospital, skilled nursing facility, etc.), said that PASC often necessitates a “longer runway” for rehabilitation.

“Payors need to understand you may not have a simple two-week rehab,” she said. “Clinicians need to anticipate this and write it into the care plan.”

(UHC Retiree Solutions designs and administers employer group-sponsored Medicare Advantage plans. Dr. Sanders-Cepeda notes that she has been pushing for the collection of more data on medication utilization patterns, worsening of conditions, rehospitalization, and more.)

She believes that physical and occupational therapists are ahead of the curve in documenting post-COVID conditions and rehabilitation challenges. They’re “doing more anticipatory thinking,” she noted, about what services may be needed in the context of acute, post-acute, and long-term symptoms of COVID-19, given that the infection can affect multiple organ systems.

At Johns Hopkins Bayview Medical Center, an inpatient Cognitive Behavioral Consult Service developed before the pandemic to manage delirium in patients with baseline dementia is proving useful in the wake of COVID-19. One of its hallmarks — the inclusion of recreational therapists in delirium management plans and protocols, which extend after hospitalization into PALTC — is filling the need for longer-term therapy for COVID-19 patients with baseline dementia who develop delirium, said Dr. Bellantoni, who is also an associate professor of medicine at the Johns Hopkins University School of Medicine.

“What we’re seeing in patients with baseline delirium is that delirium is prolonged and may not clear,” Dr. Bellantoni said. “We need an ongoing plan for physical recovery and cognitive recovery, and we look to our recreational therapists.” Into recovery, “once you take the patient over the hump,” some activities recommended by the recreational therapist can be continued by sisters and family members, noted Shaista Ahmed, MBBS, MPH, assistant professor of medicine at Johns Hopkins University, who directs the service.

COVID-19 and Skin
COVID-19 skin manifestations may mimic deep tissue pressure injuries (DTPI) and should be considered in the differential diagnosis, said Vycki Nalls, PhD, GNP-BC, CWS, ACHPN, a certified wound specialist based in McLean, VA, who has been networking and educating about new skin presentations during the pandemic.

“On first glance they look very similar,” she said. “But on close examination you can tell that the COVID skin manifestation, over theascrum (for instance), has a more diffuse and superficial look to it, even though it’s a purple red, whereas the deep tissue injury really has the dark deep red and is more localized over a bony prominence.”

The National Pressure Injury Advisory Panel (https://npipam.org) issued a white paper early in the pandemic detailing cases and advising providers to label skin lesions not consistent with DTPI as potential skin manifestations from COVID-19. And Dr. Nalls and wound specialist Pamela Scarborough, PT, DPT, CWS, vice president of clinical affairs at American Medica Technologies, are among those who have been trying to get the word out in PALTC.

Another of their messages is to carefully document wounds because some of them may be unavoidable, stemming from the sometimes critical nature of COVID-19 and potentially from PASC. COVID skin damage likely involves coagulopathy or microvascular occlusions, which in turn can leave underlying soft tissue less tolerant of pressure, shear, and stress.

Hypoxia may also affect the skin, presenting DTPI risks that may not be possible to overcome with reasonable pressure injury prevention. “A big question is, how will the long sequelae of COVID, if there are coagulopathy issues or [persistent] hypoxia issues, impact wound healing?” said Dr. Nalls, who has provided hospice care during the pandemic and is now the director of clinical training and development for Aledade Care Solutions, which supports primary care practices.

Asking about COVID, the severity and length of symptoms, the finding of hypoxia, and weight loss are among the data that should be collected to help determine etiology of a wound, she said.

Eyes on Broader Research
“There’s no workable and widely accepted definition,” said Steven Deeks, MD, a professor of medicine at the University of California–San Francisco, in a RECOVER (Researching COVID to Enhance Recovery) review seminar held by the National Institutes of Health (NIH) in March (see https://bit.ly/3xN0b7X or https://youtu.be/dhLTTW17lfg).

With PASC overall, differentiating which symptoms are long COVID–related and which are related to multi-morbidities or anticipated declines after acute illnesses can be challenging. As Dr. Mithani and colleagues wrote, there are “intersecting mechanisms of advanced aging, pre-existing conditions, and long COVID.”

There’s also a lack of consensus on the definition of long COVID and its onset, duration, and symptoms. The CDC speaks of both “long COVID or post-COVID conditions” on its website and uses an onset of 24 weeks (compared with 3 months by WHO) in describing the long-term effects of SARS-CoV-2 infection.

Dr. Deeks is one of more than 100 researchers leading studies through the NIH RECOVER initiative looking at “PASC and Long COVID.” Although RECOVER has no age cutoffs, its adult studies have enrolled mainly people younger than 65.

In an email interview with Caring, Dr. Deeks said that the long-term impact of COVID-19 includes but is not limited to what’s broadly been coined “long COVID.” It is already known that after COVID people are at higher risk for many comorbidities associated with aging, including cardiovascular disease and diabetes, he said.

And nearly 20 years of research on the impact of human immunodeficiency virus (HIV) on aging has shown, he notes, that virus-associated chronic inflammation can cause “accelerated aging” — a “vague concept characterized by excess risk of a number of age-associated diseases,” especially cancer and cardiovascular disease, but also frailty and other geriatric syndromes.

Like HIV, COVID’s long-term impacts appear to be associated with chronic inflammation and immune dysfunction, so “I suspect that the very old who have less resilience will be at high risk of frailty and all the geriatric syndromes,” Dr. Deeks said. “Research on this topic is very much needed.”

The epidemiology and natural history of PASC are poorly understood, Dr. Deeks said in the RECOVER seminar. More research is also needed on the biologic predictors and mechanisms for PASC (and other postinfectious syndromes), but “many targetable pathways have been identified,” he said.
Medical Cannabis: What Clinicians in Long-Term Care Should Know

By Alexandria Hill, MSN, GERON RN-BC, RAC-CT, QCP, CMDFD

To date, older adults are consuming cannabis at a higher (no pun intended) rate than ever before. Chronic pain, cancer-related pain, back and neck issues, arthritis, insomnia, post-traumatic stress disorder, and anxiety are the most common conditions that tend to the use of medical cannabis — and all are common conditions among the older adult population. It is likely that the prevalence of post-acute and long-term care (PALTG) resi-
dents who desire to continue, restart, or initiate cannabinoid use will continue to rise. The aging of the baby boomer genera-
tion, public opinion shifting toward normalization, expansion of state-based medical programs, and the growing availability of over-the-counter canna-
binoid products make this trend unsur-
prising, yet still unsettling, for many PALTG providers.

Assessing the Current Laws
State-regulated programs that permit primary or comprehensive cannabinoid care exist in every state except Nebraska and Kansas. Publicly available medi-

Despite a growing body of evidence surrounding the therapeutic benefits of cannabis products, at the federal level the cannabis plant and most prod-
ucts produced from it remain sched-
ule I controlled substances, subject to the U.S. Controlled Substances Act. Consequently, PALTG providers who receive Medicare or Medicaid funding cannot store or permit direct care staff to assist in the administration of medicines that meet schedule I criteria.

However, several states do allow assisted living providers to aide resi-
dents in obtaining medical certification, storing the product, and assisting the resident to administer it. So medical cannabis may become an integral part of a resident’s assisted living plan of care, but only if there are the personnel and skills necessary for skilled nursing care becomes warranted. Federally legal products also are becoming widely available for over-the-
counter sales in retail outlets, dispensa-
ries, or online stores. Two cannabinoids exempt from the Controlled Substances Act include cannabidiol (CBD) and hemp-sourced products with a delta-
9-tetrahydrocannabinol (THC) concentra-
tion of less than 0.3% on a dry weight basis [21 C.F.R. § 1308.11(d)(2)].

Understanding the Next Steps
Most clinicians theoretically support medical cannabis use, and popular opinion on the subject continues to improve. Unfortunately, the confidence to promote cannabinoids as a therapeutic intervention is often overridden by knowledge gaps, conflicting evidence, regulatory citation concerns, societal stigmas, and other barriers. Approaches may range from “just say no” or “don’t ask, don’t tell” to “giving the green light.” However, whether clinicians feel ready or not, cannabis is here to stay. So it is essential to obtain the basic knowl-
edge needed to aid residents in making informed choices about using or abstaining from cannabinoids for symptom relief or pleasure.

The variability in qualifying condi-
tions, provider–patient relationships, patient certification, and more make understanding the laws within your state a great place to start. The previously mentioned resource from the National Conference of State Legislatures is comprehensive and routinely updated.

If your organization does not already have an established policy, consider curating one that addresses medical cannabis use and the therapeutic or recrea-
tional use of cannabinoids that are not included in a state cannabis program. Regardless of organizational policy, cli-

nicians should include assessment ques-
tions about the current and historical use of cannabinoids to evaluate their safety and provide comprehensive care.

Evaluating Available Products
It is easy to assume that all of the more than 100 cannabinoids are equivalent in legality and euphoric effects to the mainstream perception of “marijuana” or “pot,” but this is far from accurate. Unlike many pharmaceuticals, cannabis is a whole-plant medicine that can simul-
taneously have a positive impact on more than one body system or target symp-
toms. Each cannabinoid has a terpene and flavonoid profile that uniquely inter-
acts with the human endocannabinoid system — the body’s largest neuroregula-
tory system — to maintain homeostasis.

For example, both CBD and THC have analgesic, antiemetic, anxiolytic, and antipsychomimetic benefits. But, unlike THC, CBD does not induce intoxication or euphoria. In fact, CBD is able to mitigate the euphoria while improving the therapeutic effects associated with THC. Other cannabinoids gaining prev-
ance for therapeutic use include canna-
binol (CBN), cannabigerol (CBG), and tetrahydrocannabinolic acid (THC-A).

As normalization progresses from taboo to mainstream, the products con-
tinue to evolve in both creativity and the complexity of cannabinoid profile. The most commonly known route of administration is still inhalation, but topical, sublingual tinctures, edibles, and suppositories make one’s choice to use cannabinoids more discrete than ever. If nothing else, both consumers and PALTG providers must be aware of the need to evaluate a product’s label and Certificate of Analysis (CoA). The product should be clearly labeled and contain recommended dosing instruc-
tions. The CoA is proof of third-party testing and defines the cannabinoid profile and purity.

Understanding the cannabinoid com-
position will inform the clinician and resident of the cannabinoid profile’s intended effects, their duration, and potential side effects. Unless otherwise approved in your state, the concentra-
tion of delta-9-tetrahydrocannabinol listed in the CoA should be validated as less than 0.3%. And if the CoA does not confirm the absence or presence of solvents, pesticides, heavy metals, and microbials, this may indicate a product to steer clear of.

Starting Low, Going Slow
Cannabinoids are biphasic, meaning what is therapeutic at a certain quantity may not achieve the desired effect in a different quantity. Luckily, therapeutic effects may be achieved through various routes of administration and titration of quantities that are unique to each individual. Dosing should “start low, go slow, and stay low.” Why? Higher doses may have diminishing returns with increased risks or unintended effects, such as the symp-
toms of paranoia, anxiety, or experiencing more commonly associated with being too “high.” Conversely, the product may be unsuccessful in palliating the targeted condition if attention to the cannabinoid profile and its related evidence are not taken into consideration.

Because cannabinoid care is individu-
alized, target symptom and side-effect monitoring should be recorded to evalu-
te the product’s effectiveness. These evaluations should occur at routine intervals as it may take time to achieve the intended effects or find the right product.

Anticipating Drug Interactions
Drug interactions with cannabinoids are still being studied, but there are a few known interactions that provid-
ers should be aware of. For instance, CYP3A4 inhibitors (macrolides and verapamil) and CYP2C9 inhibitors (corticosteroids, fluoxetine, and amio-
darone) may increase the psychoactive effects (CMAJ 2020;192:E206, https://bit.ly/3OiP7WM). Other flagged drugs include warfarin, clozapam, central ner-
vous system depressants and sympatho-
mimetics, theophylline, clozapine, and olanzapine.

Key Recommendations
The National Council of State Boards of Nursing recommends these elements to consider when performing a clinical encounter to evaluate cannabinoid treatment (“Nurs Regul 2018;9[Suppl]:S1–S60, https://bit.ly/3ABBLaA):
• Scientific evidence related to the qualifying condition
• Current treatment plan and the resident’s response
• Medication reconciliation and prescription drug program re-
view
• Health history and risk factors
• Current and previous use of can-
nabinoids
• Knowledge level about risks and benefits
• Potential side effects

Further Information
Several organizations offer information about cannabinoids in healthcare:
• American Cannabis Nurses Association: https://www.cannabis-
nurses.org/
• Center for Medical Cannabis Research: https://www.cmcr.ucsd.edu/
• Doctors for Cannabis Regulation: https://www.dfc.org/
• Society of Cannabis Clinicians: https://www.cannabisclinicians.org/

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