

DATA SPEAKS



Part I: COVID-19 Long Haul, Data Trends and Evidenced Based Practice

Speakers:

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Faculty Disclosure

- We have no financial relationships to disclose
- We have no conflicts of interests to disclose
- We will not promote any commercial products or services

Requirements for Successful Completion

- 1.5 contact hours will be awarded for this continuing professional development activity and administrator activity (NAB via BRR)
- Criteria for successful completion includes attendance for at least 80% of the entire event. Partial credit may not be awarded
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What is DATA SPEAKS?

- A collaborative learning series between AAPACN, ACHCA, and Broad River Rehab.
- **Course 1:** CMS Claims Data 101: COVID-19 Long Haul Complexities and Impacts.
- **Course 2:** Trauma Informed Care
- **Course 3:** Social Determinants of Health
- **Course 4:** Demonstrating Community Value

Agenda

- Overview of the CMS Quality Strategy
- COVID-19- Clinical presentation, long term impacts, evidenced based approaches to care
- CMS Research Data Assistance Center (ResDAC) Overview
- Pandemic Data Review

CMS Quality Strategy



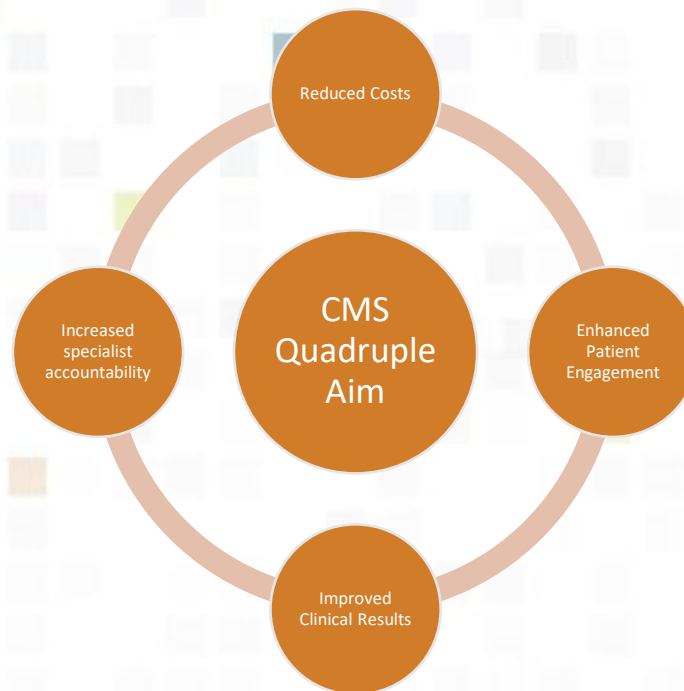
Better Care: Improve the overall quality of care by making health care more person-centered, reliable, accessible, and safe.

Smarter Spending: Reduce the cost of quality health care for individuals, families, employers, government, and communities.

Healthier People, Healthier Communities: Improve the health of Americans by supporting proven interventions to address behavioral, social, and environmental determinants of health, and deliver higher-quality care.

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CMS Quadruple Aim



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National Quality Strategy Priorities

- To advance its aims, the National Quality Strategy identified six priorities:
- 1. Making care safer by reducing harm caused in the delivery of care;
- **2. Ensuring that each person and family is engaged as partners in their care;**
- 3. Promoting effective communication and coordination of care;
- 4. Promoting the most effective prevention and treatment practices for the leading causes of mortality, starting with cardiovascular disease;
- 5. Working with communities to promote wide use of best practices to enable healthy living; and
- 6. Making quality care more affordable for individuals, families, employers, governments, and communities by developing and spreading new health care delivery models.

Person Centered Engagement

- A person-centered approach considers the individual as multifaceted, not merely as a “receiver” of services.
- This approach demands that providers and individuals share power and responsibility in goal setting, decision-making, and care management.
- It also requires giving people access to understandable information and decision support tools to equip them and their families with the information to manage their health and wellness, navigate the full span of the health care delivery system, and make their own informed choices about care.

Person Centered Engagement

- SOM Appendix PP

FACILITY ASSESSMENT:

Pursuant to §483.70(e) (F838), the facility must conduct and document a facility-wide assessment to determine what resources are necessary to care for its residents competently during both day-to-day operations and emergencies. The facility must review and update that assessment, as necessary, and at least annually. The facility must also review and update this assessment whenever there is, or the facility plans for, any change that would require a substantial modification to any part of this assessment.

Person Centered Engagement

- SOM Appendix PP

F655

§483.21(a) *Baseline Care Plans*

Nursing homes are required to develop a baseline care plan within the first 48 hours of admission which provides instructions for the provision of effective and person-centered care to each resident.

- *Person-centered care means the facility focuses on the resident as the center of control and supports each resident in making his or her own choices. Person-centered care includes making an effort to understand what each resident is communicating, verbally and nonverbally, identifying what is important to each resident with regard to daily routines and preferred activities, and having an understanding of the resident's life before coming to reside in the nursing home.*

Person Centered Engagement

- SOM Appendix PP

F656

INTENT §483.21(b)

Each resident will have a person-centered comprehensive care plan developed and implemented to meet his other preferences and goals, and address the resident's medical, physical, mental and psychosocial needs.

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Person Centered Engagement

General Critical Element Pathway

Staff Interviews (Nursing Aides, Nurse, DON, Therapist, Attending Practitioner):

- Will you describe specific interventions for the resident, including facility-specific guidelines/protocols?
- How, what, when, and to whom do you report changes in condition?
- How does the interdisciplinary team monitor for the implementation of the care plan and changes in condition?
- How is information passed across shifts, and between all disciplines?
- How are revisions to the comprehensive care plan communicated to staff?
- How was it determined that the chosen interventions were appropriate?
- Did the resident have a change in condition that may justify additional or different interventions?
- How does staff validate the effectiveness of current interventions?

Record Review:

- Review relevant information such as medication and treatment administration records, interdisciplinary progress notes, and any facility-required assessments that may have been completed. Does the information accurately and comprehensively reflect the resident's condition? If not, describe.
- Are federally required RAI/MDS assessments completed according to required time frames?
- For newly admitted residents, is there a baseline care plan, and does it describe the instructions necessary to meet the resident's immediate needs? Does it address the resident's clinical and safety risks?
- Is the care plan comprehensive? Is it consistent with the resident's specific conditions, risks, needs, preferences, and behaviors? Does it include goals for admission, measurable objectives, timetables, and desired outcomes? How did the resident respond to care planned interventions? Was the care plan revised if interventions weren't effective, the desired outcome was achieved, or if there was a change in condition?
- Is there evidence of resident or resident representative participation in developing resident-specific, measurable objectives, and interventions? If not, is there an explanation as to why the resident or representative did not participate?
- Is there evidence that the resident has refused any care or services that would otherwise be required, but are not provided due to the resident's exercise of rights, including the right to refuse treatment? If so, does the care plan reflect this refusal, and how has the facility addressed this refusal?
- Was there a "significant change" in the resident's condition (i.e., will not resolve itself without intervention by staff or by implementing standard disease-related clinical interventions; impacts more than one area of health; requires IDT review or revision of the care plan)? If so, was a significant change comprehensive assessment conducted within 14 days?

Administrator Takeaways

- Dr. Brune: Person Centered engagement and Practical RTM Example.



Medicare Population & Chronic Conditions

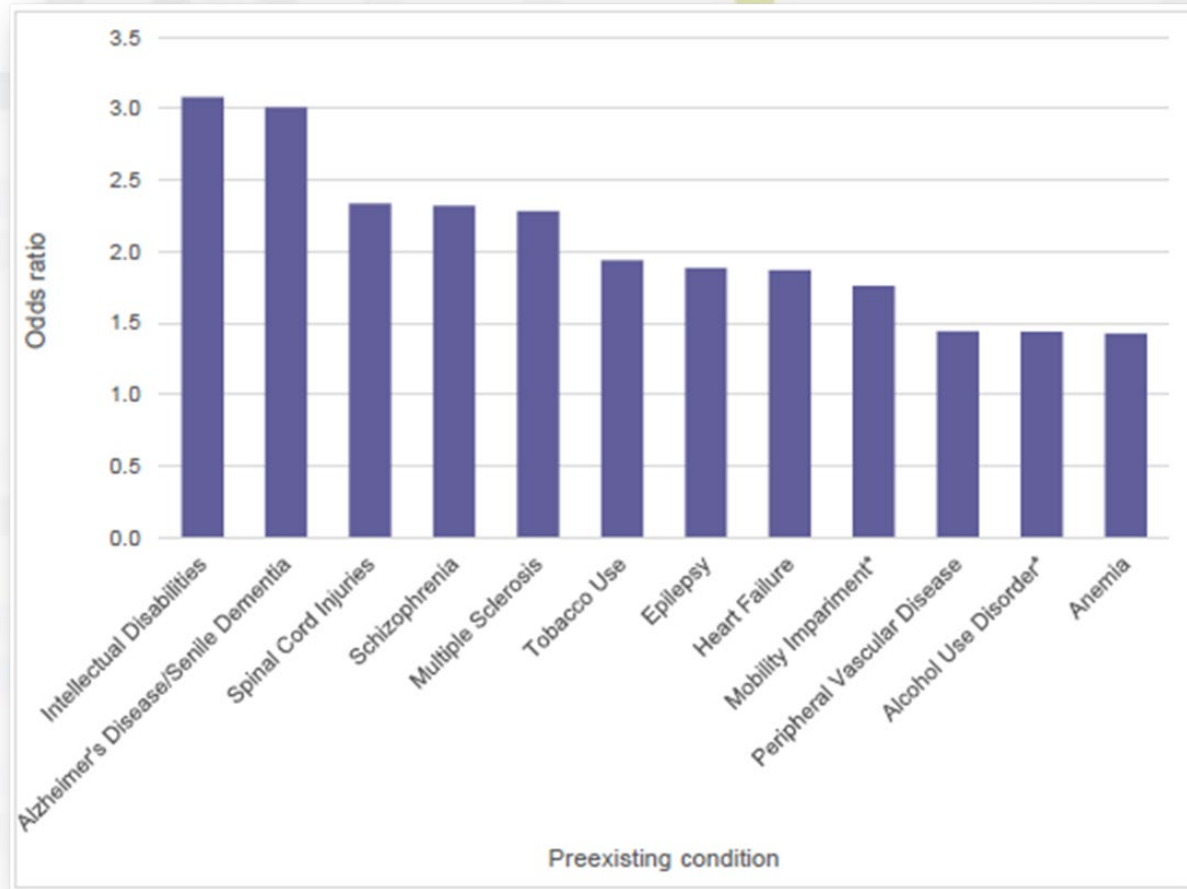
- Medicare covers a large population of patients with multiple chronic conditions.
- In 2010, approximately 21.4 million Medicare beneficiaries had at least 2 chronic conditions and accounted for the bulk of healthcare services provided under Medicare.³
- There are multiple chronic conditions that require not only management by specialty and primary care physicians, but also data exchange and a common understanding between patients and physicians of treatment goals and monitoring

Impact of Multiple Chronic Conditions

- MCCs are associated with approximately 66 percent of the total health care spending in the United States.
- As many as three out of four Americans aged 65 or older have MCC and approximately two out of three Medicare beneficiaries have MCC.
- Approximately one in four Americans in any age group has MCC, including one in 15 children.
- People with MCCs are also at increased risk for mortality and poorer day-to-day functioning

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Top preexisting conditions associated with death of COVID-19 patients 30 days or more after index date, March 2020-February 2021



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Administrator Takeaways

- Bob Lane: Comments on current issues related to staffing and MCC's

COVID-19: Risk Factors for Severe Disease (CDC)

- People of any age with the following conditions are more likely to get severely ill from COVID-19. Severe illness means that a person with COVID-19 may: Be hospitalized, Need intensive care, Require a ventilator to help them breathe or Die
 - Cancer,
 - **Chronic kidney disease,**
 - Chronic liver disease,
 - **Chronic lung diseases (Asthma, Bronchiectasis, Bronchopulmonary dysplasia, Chronic obstructive pulmonary disease (COPD), including emphysema and chronic bronchitis,**
 - Having damaged or scarred lung tissue,
 - **Cystic fibrosis,**
 - Pulmonary embolism Pulmonary hypertension),
 - **Dementia or other neurological conditions,**
 - Diabetes (type 1 or type 2),
 - **Down syndrome,**
 - Heart conditions,
 - **HIV infection,**
 - Immunocompromised state,
 - **Mental health conditions,**
 - Overweight and obesity,
 - **Pregnancy,**
 - Sickle cell disease or thalassemia,
 - Smoking, current or former,
 - **Solid organ or blood stem cell transplant,**
 - Stroke or cerebrovascular disease,
 - **Substance use disorders,**
 - Tuberculosis.

COVID-19: Risk Factors for Severe Disease (CDC)

- Older adults are more likely to get severely ill from COVID-19. More than 81% of COVID-19 deaths occur in people over age 65. The number of deaths among people over age 65 is 80 times higher than the number of deaths among people aged 18-29.
- The risk of severe COVID-19 increases as the number of underlying medical conditions increases in a person.
- Long-standing systemic health and social inequities have put various groups of people at increased risk of getting sick and dying from COVID-19, including many people from certain racial and ethnic minority groups and people with disabilities.

Post acute COVID syndrome (PACS)

- The problem has several names. The National Institutes of Health refer to long-term COVID-19 symptoms as PASC, which stands for post-acute sequelae of SARS-CoV-2. More common terms are post-COVID syndrome, long COVID or long-term COVID. People living with post-COVID syndrome are sometimes known as “long haulers.”
- **Postacute COVID syndrome (PACS)**, an ongoing inflammatory state following infection with SARS-CoV-2, includes symptoms that affect various organ systems, with neurocognitive, autonomic, gastrointestinal, respiratory, musculoskeletal, psychological, sensory, and dermatologic clusters. An estimated 50%-80% of COVID-19 patients experience one or more clusters of symptoms 3 months after leaving the hospital.
- In one study, researchers retrospectively identified 235 patients hospitalized with COVID-19 between July 2020 and April 2021. Overall, ...19.2% underwent mechanical ventilation and the mean duration of hospitalization was 11.7 days. They were seen for PACS symptoms a median 143 days after COVID-19 symptoms began, with 77.5% having symptoms of at least one PACS cluster. Of these clusters, 34.9% were neurocognitive, 53.2% were respiratory, 26.4% were musculoskeletal, 29.4% were psychological, 25.1% were dermatologic, and 17.5% were sensory.

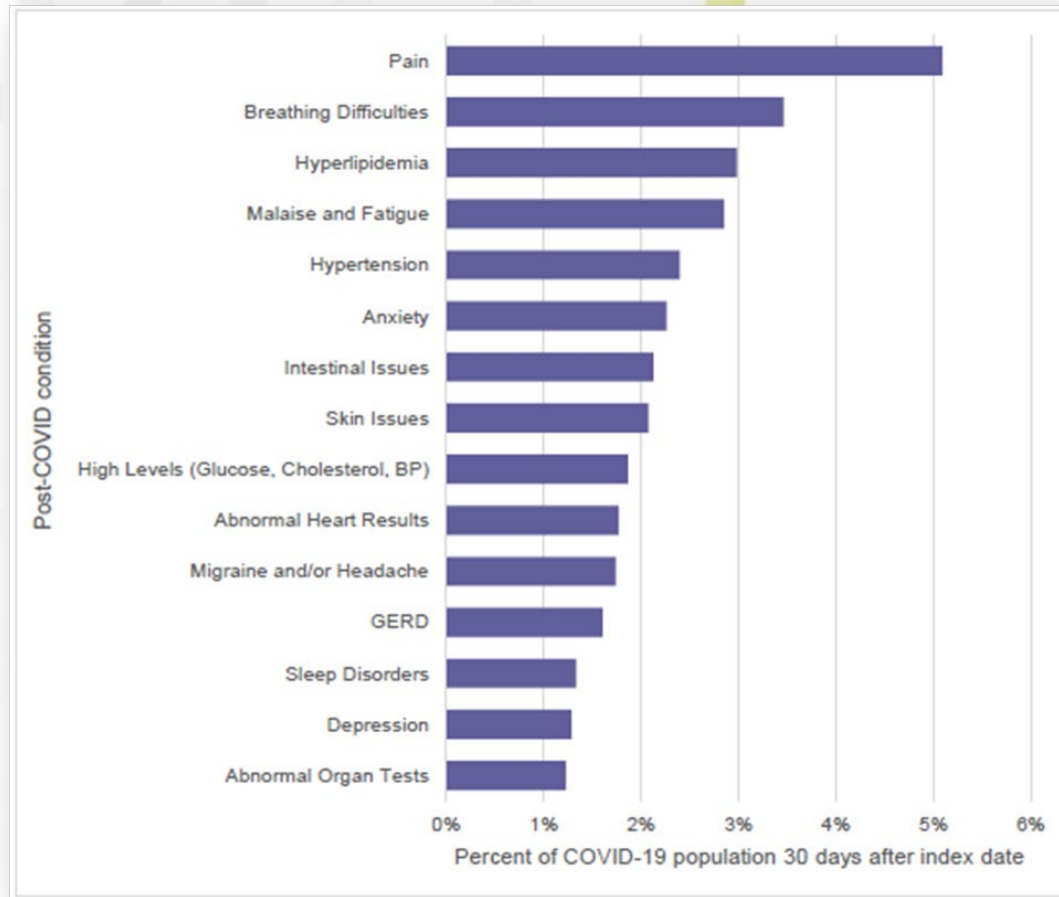
What causes post-COVID syndrome?

- While it's clear that people with certain risk factors (including high blood pressure, smoking, diabetes, obesity and other conditions) are more likely to have a serious bout of COVID-19, there isn't a clear link between these risk factors and long-term problems. In fact, long COVID can happen in people who have mild symptoms.
- More studies will shed light on why these stubborn health problems persist in some people. They could be due to organ damage, a persistent inflammatory or autoimmune response or another reason.
- Post-COVID-19 syndrome is not just afflicting people who were very sick with the coronavirus. Patients who were never severely ill are coming to clinic and saying that their lives are different now.

Mayo Clinic Findings

- Common signs and symptoms that linger over time include:
 - Fatigue
 - Shortness of breath or difficulty breathing
 - Cough
 - Joint pain
 - Chest pain
 - Memory, concentration or sleep problems
 - Muscle pain or headache
 - Fast or pounding heartbeat
 - Loss of smell or taste
 - Depression or anxiety
 - Fever
 - Dizziness when you stand
 - Worsened symptoms after physical or mental activities

Top 15 post-COVID conditions by percent of COVID-19 population 30 days or more after index date, all ages, March 2020-February 2021





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Long Haul Clinical Care Considerations

COVID-19 Future thinking, an Interdisciplinary approach

- Covid-19 has created new norms
- Specific risk factors and conditions contribute to and result from this disease.
- In the present crisis facilities are treating specific Covid-19 related issues
- Future thinking requires us to evaluate our capacity as interdisciplinary teams as we leverage the RAI to provide care (RAI – MDS, CAAs, Care Planning), be paid appropriately (PDPM) and achieve desired outcomes (Quality Measurement).

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Pain

- In one study, pain was the top post-COVID condition, affecting 5.1 percent of COVID-19 patients 30 days or more after their initial diagnosis. Pain includes ICD-10-CM diagnoses such as M79.2, neuralgia and neuritis, unspecified, and M79.1, myalgia. Pain is frequently cited by other researchers as a common post-COVID condition,
- Patients who had been hospitalized had the highest odds of reporting post-COVID pain and symptomatic individuals also had high odds of reporting the condition.

Pain

- The overall prevalence of post-COVID myalgia, joint pain, and chest pain ranged from 5.65% to 18.15%, 4.6% to 12.1%, and 7.8% to 23.6%, respectively, at different follow-up periods during the first year post infection. Time trend analysis showed a decrease prevalence of musculoskeletal post-COVID pain from the symptom's onset to 30 days after, an increase 60 days after, but with a second decrease ≥ 180 days after. This study indicated that 10% of individuals infected by SARS-CoV-2 will suffer from musculoskeletal post-COVID pain symptomatology at some time during the first year after the infection.

Breathing Difficulties

- Breathing difficulties were the second most common post-COVID condition, affecting 3.5 percent of the total population after COVID-19. This includes diagnoses such as R06.00, dyspnea, unspecified, and R06.02, shortness of breath. Difficulty breathing, like pain, is often cited by other researchers as a common post-COVID condition.
- As with pain, patients who were hospitalized had the highest odds of reporting post-COVID breathing difficulties. Those with symptoms also had higher odds for breathing difficulties than asymptomatic patients.

Breathing Difficulties

- A bad case of COVID-19 can produce scarring and other permanent problems in the lungs, but even mild infections can cause persistent shortness of breath — getting winded easily after even light exertion.
- Lung recovery after COVID-19 is possible, but takes time. Experts say it can take months for a person's lung function to return to pre-COVID-19 levels. Breathing exercises and respiratory therapy can help.

Hyperlipidemia and hypertension

- Of particular interest were hyperlipidemia and hypertension, which appeared as, respectively, the third and fifth most common post-COVID diagnoses—even though these diagnoses had never been reported before in these patients' history. Hyperlipidemia occurred in 3 percent of COVID-19 patients, hypertension in 2.4 percent. Other researchers have observed these as post-COVID conditions, though it is possible that patients may have had the conditions before and not had them detected by providers.

Malaise and fatigue

- Malaise and fatigue, which are commonly reported in the literature, were the fourth most common condition, affecting 2.9 percent of COVID-19 patients 30 days or more after their index date. As with pain and breathing difficulties, patients who had been hospitalized had higher odds of reporting this condition and symptomatic patients also had higher odds.

Other Body Systems: Cardiac

- Complications can include hypotension, arrhythmia, reduced ejection fraction, and myocarditis.
- Left ventricular dysfunction in the acute phase may be attributed to markedly increased cytokine levels.
- Activation or enhanced release of inflammatory cytokines can lead to necrosis of myocardial cells and exacerbations of coronary atherosclerotic plaques, making them prone to rupture.
- An intense inflammatory response superimposed on preexisting cardiovascular disease may precipitate cardiac injury.
- **Myocardial damage might result in long-term dysfunction and must be taken into consideration for patients entering rehabilitation.**
- Although most patients develop persistent tachycardia, it has been found to be relatively benign and self-limiting.

Other Body Systems: Cardiac

- SARS-CoV-2 infection can leave some people with heart problems, including inflammation of the heart muscle. In fact, one study showed that 60% of people who recovered from COVID-19 had signs of ongoing heart inflammation, which could lead to the common symptoms of shortness of breath, palpitations and rapid heartbeat. This inflammation appeared even in those who had had a mild case of COVID-19 and who had no medical issues before they got sick.

Other Body Systems: Neurologic

- Acutely, 36% of patients with COVID-19 develop neurologic symptoms, including headaches, altered consciousness, seizures, absence of smell and taste, paresthesias, and stroke.
- A small study may help explain the cause of "brain fog," the lingering mental confusion reported in some people who've had COVID. Researchers at the University of California, San Francisco, found abnormalities in the cerebrospinal fluid of 10 of 13 people who were infected with COVID and had thinking problems.
- Posterior reversible encephalopathy syndrome, which causes headache, confusion, seizures, and visual loss can be a complication.
- COVID-19 has been associated viral encephalitis has also been rarely reported.
- Patients are found to have very high D-dimer levels and hypercoagulability, in turn potentially increasing the risk of acute cerebrovascular events.
- As with many viral syndromes, Guillain-Barre´ syndrome, acute demyelinating encephalopathy, acute necrotizing hemorrhagic encephalopathy, and acute transverse myelitis have also been rarely reported.
- Myopathy with severe muscular symptoms is commonly observed among moderate and severe cases.

Other Body Systems: Hematologic

- Patients severely affected by COVID-19 are at high risk for a hypercoagulable state, characterized by very high D-dimer levels, thrombo-embolism, and stroke.
- In one review, thromboembolism was documented in as many as 1 in 5 patients and strokes occurred in 3%.
- Thromboembolic events occur despite prophylactic use of anticoagulants, and both venous and arterial thrombosis occurs.
- In addition, severe COVID-19 infection appears to be associated with bleeding complications, an increased risk for intracranial hemorrhage, and, in some instances, disseminated intravascular coagulation.

Other Body Systems: Renal

- Patients severely affected by COVID-19 are more likely to have acute kidney injury.
- Studies have shown that among those with normal creatinine levels on admission, most will recover from an acute kidney injury. However, proteinuria and hematuria can be prolonged.
- It is recommended that patients with acute kidney injury be regularly assessed for 3-6 months after discharge.

Other Body Systems: Endocrine

- The world is currently grappling with a dual pandemic of diabetes and coronavirus disease 2019 (COVID-19).” Current research, “...has raised concerns about a bi-directional relationship between these two health conditions. It is now undoubtedly proven that diabetes is associated with a poor prognosis of COVID-19. On the other hand, COVID-19 patients with diabetes frequently experience uncontrolled hyperglycemia and episodes of acute hyperglycemic crisis, requiring exceptionally high doses of insulin. More intriguingly, recent reports show that newly diagnosed diabetes is commonly observed in COVID-19 patients.
- The relationship between COVID-19 and diabetes, especially type 2 diabetes, is complex. Type 2 diabetes is a risk factor for serious cases of COVID-19, and some survivors of the illness seem to be developing type 2 diabetes signs after they recover from COVID-19.

Other Body Systems: Skin

- COVID-19 has been associated skin lesions include (from most common to least common) maculopapular eruptions, urticarial, acral erythema with vesicles or pustules (pseudo-chilblains), vesicular eruptions, and livedo reticularis.
- Frank necrosis, secondary to vasculopathy, can also occur and may result in limb loss.
- Because of prone positioning, facial wounds may occur among survivors and could be problematic because of secondary infections and necrosis.

Other Body Systems: Liver

- COVID-19 related liver dysfunction with abnormal liver enzymes (mainly elevated serum prominences in those patients who spend significant amounts of time in prone position).
- Postacute COVID syndrome is associated with greater risk of metabolic-associated fatty liver disease (MAFLD)

Administrator Takeaways

- Dr. Brune: Diet issues related to inflammation. How communities can thrive.

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Mental health issues after COVID-19

- After surviving COVID-19, some people are left with lingering anxiety, depression and other mental health issues. Physical changes such as pain and weakness can be complicated by long periods of isolation, stress from job loss and financial difficulties, and grief from the deaths of loved ones and the loss of good health.
- Patients who were hospitalized have a particularly challenging recovery. “Post-intensive care syndrome, or PICS, puts COVID-19 survivors and other people who have spent time in the ICU at a higher risk for problems with mental health, cognition and physical recovery.”
- Prolonged time in the ICU can cause delirium. The strange surroundings, multiple mind-altering medications, isolation and loss of control can leave patients with lasting and recurrent sensations of terror or dread, including post-traumatic stress disorder (PTSD).

ICU Issues

- **Ventilation:** Survivors of acute respiratory distress syndrome with mechanical ventilation are reported to have complications such as laryngeal injury, tracheal stenosis, heterotopic ossification, contractures, adhesive capsulitis, decubitus ulcers, dysphonia, dysphagia, sensorineural hearing loss, brachial plexus injuries, and peripheral neuropathies (peroneal and ulnar).

ICU Issues

- **ICU Weakness:** Weakness and decreased exercise capacity are the most common symptoms after prolonged ICU stay and immobility.
 - Critical illness polyneuropathy (CIP), critical illness myopathy (CIM), and muscle atrophy are major causes of functional impairment related to COVID-19. CIP and CIM are characterized by generalized and symmetrical weakness, atrophy, and decreased or absent deep tendon reflexes and can cause difficulty weaning from mechanical ventilation because of associated respiratory muscle weakness.
 - CIP and/or CIM co-occur with other symptoms or complications, including pain, reduced range of motion, fatigue, incontinence, and dysphagia.
 - Many of these secondary complications are preventable if appropriate rehabilitation is provided early in the disease course

ICU Issues

- **Cognition:** COVID-19 can produce prolonged hypoxia that may lead to both acute and long-term neuropsychological dysfunction.
 - The further elements of prolonged ventilation, use of sedatives, prone positioning, human isolation, and extended time away from social contacts may contribute to severe delirium.
 - All components of cognition can be affected, including attention, visual-spatial abilities, memory, and higher order executive functions.
 - Common adverse psychological effects include posttraumatic stress disorder, insomnia, depression, and general anxiety, and they can be exacerbated by fear, stigma, and isolation.

Mobility and the IDT

- **Interdisciplinary collaboration between the rehabilitation team, nursing, and respiratory therapy is crucial to provide frequent pressure relief. Prone teams that include physical or occupational therapists and are available 24 hours per day 7 days per week may be helpful in reinforcing proper technique to minimize injuries.**
 - For noncritically ill inpatients, daily out-of-bed mobility and participation in activities of daily living (ADL) helps to promote functional recovery and improve delirium.
 - Interdisciplinary collaboration between the rehabilitation team, nursing team, and physicians to bundle care and promote mobility activities is recommended to reduce immobility-related harm while ensuring efficient use of resources.
 - Rehabilitation team members play a crucial role in educating nursing and other team members on the safe progression of patient mobility. Education about engaging patients in daily therapeutic exercises, ADLs, and cognitive stimulation tasks is recommended for carry over from therapy sessions to amplify functional recovery.

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The 6 “M’s” Managing COVID Long Term

- In particular, the 5 M’s approach may be helpful for COVID-19 survivors:
 - Mind (Cognition),
 - Mobility (Function),
 - Medications (Optimizing simplifying Medications),
 - Multicomplexity (managing the complex medical/social issues of a given patient),
 - and Matters Most (what patients value most for their care).
- For geriatric rehabilitation and in our COVID-19 survivors, it is also important to consider a 6th “M”, Motivation (factors affecting behavior change and/or health) as being critical factors in our rehabilitative care.

Administrator Takeaways

- Bob Lane: managing and merging systems tie back to facility assessment.

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Data Review

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ResDAC offers a number of services for researchers with all levels of experience using or planning to use CMS data. Services include technical data assistance, information on available data resources, and training

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Nationwide - Q2 2021



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QUESTIONS?

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