COVID-19 Impact: Long Haulers

This meeting will be recorded and will be available at www.fmda.org/journalclub.php
Agenda

• State of the State
• COVID Long Haulers: Research & Clinical Insights
• Case Reviews
• Open Discussion
COVID-19 Weekly Situation Report: State Overview

Previous week (June 11, 2021 - June 17, 2021)

Published June 18, 2021

All data are provisional and subject to change. Data include only Florida residents.

<table>
<thead>
<tr>
<th>Case data</th>
<th>Previous week</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>10,629</td>
<td>2,310,881</td>
</tr>
<tr>
<td>New case positivity</td>
<td>3.3%</td>
<td>16.9%</td>
</tr>
<tr>
<td>Deaths</td>
<td>43</td>
<td>37,555</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vaccine data</th>
<th>Previous week</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>People vaccinated</td>
<td>373,438</td>
<td>10,659,464</td>
</tr>
<tr>
<td>First dose</td>
<td>123,414</td>
<td>1,679,648</td>
</tr>
<tr>
<td>Series completed</td>
<td>250,024</td>
<td>8,979,816</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vaccine age groups</th>
<th>Population</th>
<th>Vaccinated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>19,119,043</td>
<td>56%</td>
</tr>
<tr>
<td>12-19</td>
<td>1,972,084</td>
<td>26%</td>
</tr>
<tr>
<td>20-29</td>
<td>2,744,987</td>
<td>35%</td>
</tr>
<tr>
<td>30-39</td>
<td>2,784,698</td>
<td>42%</td>
</tr>
<tr>
<td>40-49</td>
<td>2,669,253</td>
<td>52%</td>
</tr>
<tr>
<td>50-59</td>
<td>2,925,172</td>
<td>62%</td>
</tr>
<tr>
<td>60-64</td>
<td>1,438,783</td>
<td>72%</td>
</tr>
<tr>
<td>65+</td>
<td>4,584,066</td>
<td>83%</td>
</tr>
</tbody>
</table>

See additional notes at the end of this report for information on positivity rate, deaths, and vaccination status.
COVID-19 Vaccinations in the United States

Overall US COVID-19 Vaccine | Deliveries and Administration; Maps, charts, and data provided by CDC, updates daily by 8 pm ET†
Represents all vaccine partners including jurisdictional partner clinics, retail pharmacies, long-term care facilities, dialysis centers, Federal Emergency Management Agency and Health Resources and Services Administration partner sites, and federal entity facilities.

How Do I Find a COVID-19 Vaccine?

<table>
<thead>
<tr>
<th>People Vaccinated</th>
<th>At Least One Dose</th>
<th>Fully Vaccinated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>177,635,067</td>
<td>150,424,675</td>
</tr>
<tr>
<td>% of Total Population</td>
<td>53.5%</td>
<td>45.3%</td>
</tr>
<tr>
<td>Population ≥ 12 Years of Age</td>
<td>177,440,036</td>
<td>150,325,847</td>
</tr>
<tr>
<td>% of Population ≥ 12 Years of Age</td>
<td>62.6%</td>
<td>53%</td>
</tr>
<tr>
<td>Population ≥ 18 Years of Age</td>
<td>169,225,128</td>
<td>144,571,644</td>
</tr>
<tr>
<td>% of Population ≥ 18 Years of Age</td>
<td>65.5%</td>
<td>56%</td>
</tr>
<tr>
<td>Population ≥ 65 Years of Age</td>
<td>47,761,550</td>
<td>42,223,409</td>
</tr>
<tr>
<td>% of Population ≥ 65 Years of Age</td>
<td>87.3%</td>
<td>77.2%</td>
</tr>
</tbody>
</table>

Learn more about the distribution of vaccines.

150.4M People fully vaccinated

† Data as of: June 22, 2021 6:00am ET. Post: Tuesday, June 22, 2021 6:12 PM ET
COVID Long-Haulers

Research, Clinical Insights...
When COVID-19 Symptoms Linger

New NIH initiative seeks to understand why some people continue to have symptoms long after recovery.
6-month consequences of COVID-19 in patients discharged from hospital: a cohort study

Chaolin Huang, MD * • Lixue Huang, MD * • Yeming Wang, MD * • Xia Li, MD * • Lili Ren, PhD * • Xiaoying Gu, PhD *

et al.  Show all authors  Show footnotes

Published: January 08, 2021  •  DOI: https://doi.org/10.1016/S0140-6736(20)32656-8
SARS-CoV 2
COVID-19 infection
Epithelial cells
ROS
Cell death
NLRR3
NFKB
Immune invasion
Macrophages
Activated T cells
Neutrophils
Cytokines
PRR activation
PAMPs
DAMPs
Cytokine storm
Inflammatory cascade
Bacterial infection
Acute respiratory distress syndrome
Sepsis
Multi-organ dysfunction syndrome
Death
Neuro-COVID

Brain Fog
Dizziness
Inability to concentrate
Shortness of breath
Chronic Cough
Myocarditis - Palpitation

Gastrointestinal symptoms
Urinary bladder control
Skin rashes

Weeks to Months after COVID-19 Infection

Chronic COVID Syndrome
[Long- COVID / Long-Haulers]

Cell Death - Degeneration
Irreversible Damage

Vascular Effects - Inflammation

Possibly Reversible
Pathogenesis of Post COVID Syndrome – Multi-factorial

- Prolonged Inflammation
- Immune-mediated vascular dysfunction
- Thromboembolism
- Nervous system dysfunction
Research Letter | Infectious Diseases

Sequelea in Adults at 6 Months After COVID-19 Infection

Jennifer K. Logue, BS; Nicholas M. Franko, BS; Denise J. McCulloch, MD, MPH; Dylan McDonald, BA; Ariana Magedson, BS; Caitlin R. Wolf, BS; Helen Y. Chu, MD, MPH
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total recovered individuals (n = 177)</td>
</tr>
<tr>
<td>Post-COVID-19 follow-up characteristics</td>
<td></td>
</tr>
<tr>
<td>Time after illness onset, median (SD), d(^b)</td>
<td>169 (39.5)</td>
</tr>
<tr>
<td>Persistent symptoms(^c)</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>119 (67.2)</td>
</tr>
<tr>
<td>1-2</td>
<td>29 (16.4)</td>
</tr>
<tr>
<td>≥3</td>
<td>24 (13.6)</td>
</tr>
<tr>
<td>Missing</td>
<td>7 (4.0)</td>
</tr>
<tr>
<td>Worsened quality of life(^d)</td>
<td>53 (29.9)</td>
</tr>
</tbody>
</table>
Post-acute COVID-19 syndrome

Ani Nalbandian,1,2,4 Kartik Sehgal,2,3,4,24, Aakriti Gupta,1,5, Mahesh V. Madhavan,1,5 Claire McGroder,7 Jacob S. Stevens,8 Joshua R. Cook,9 Anna S. Nordvig,10 Daniel Shalev,11 Tejasav S. Sehrawat,12 Neha Ahluwalia,13 Behnood Bikdeli,4,5,6,14 Donald Dietz,15 Caroline Der-Nigoghossian,16 Nadia Liyanage-Don,17 Gregg F. Rosner,1 Elana J. Bernstein,18 Sumit Mohan,8 Akinpelumi A. Beckley,19 David S. Seres,20 Toni K. Choueiri,21,23, Nir Uriel,1 John C. Ausiello,9 Domenico Accili,9 Daniel E. Freedberg,21 Matthew Baldwin,7 Allan Schwartz,1 Daniel Brodie,7 Christine Kim Garcia,7 Mitchell S. V. Elkind,10,22 Jean M. Connors,4,23 John P. Bilezikian,9 Donald W. Landry,8 and Elaine Y. Wan,1
Symptom assessment through virtual/in-person follow-up at 4–8 weeks and at 12 weeks post-discharge.

Dyspnea/persistent oxygen requirement

Consider 6MWT, PFT, chest X-ray, PE work-up, echocardiogram and HRCT of the chest as indicated.

Hematology

Consider extended thrombophylaxis for high-risk survivors based on shared decision-making.

Renal

Early follow-up with nephrologists after discharge for patients with COVID-19 and AKI.

Primary care

Consideration of early rehabilitation
Patient education
Consider enrollment in clinical research studies
Active engagement with patient advocacy groups.

Neuropsychiatry

Screening for anxiety, depression, PTSD, sleep disturbances and cognitive impairment.

COVID-19 clinic


Original Investigation | Infectious Diseases

Assessment of the Frequency and Variety of Persistent Symptoms Among Patients With COVID-19
A Systematic Review

Tahmina Nasserie, MPH; Michael Hittle, BS; Steven N. Goodman, MD, MHS, PhD
Recovery from Coronavirus Disease 2019 among Older Adults in Post-Acute Skilled Nursing Facilities

Sandra Shi, MD  On-Yee Lo, PhD  Natalie Newmeyer, MS  Innokenty Bakaev, MD  Dae Hyun Kim, MD, ScD

Published: April 12, 2021  DOI: https://doi.org/10.1016/j.jamda.2021.04.003
Case Reviews in PALTC

Is this Post – COVID Syndrome?
52 y/o “Young Geriatric” outpatient with multiple comorbidities

• AA woman with pmhx of Morbid Obesity, Polycystic Kidney disease, ESRD on dialysis, HTN, COPD – admitted to hospital with SOB, Cough + COVID test

• Discharged home with mild SOB; and 1 month later she continues to have cough, SOB, and Fatigue. Requesting assistance at home due to weakness

• Hospitalized 2 months later after ”dizzy” episode resulted in a fall with ankle fracture

• Upon discharge from that hospital stay with home health care, she returned home with skin lesions and macular rash, persistent cough, confusion – she was readmitted to the hospital 16 hours later
62 y/o LTC Resident

African American Woman with pmhx of Diabetes, CVA, CKD 3, Morbid Obesity, HTN, Heart Failure, COPD, RA

Initially, was treated on COVID unit in facility until Acute Respiratory Failure

Upon discharge back to the facility she continued to have SOB, worsening renal function, and muscle weakness

Hospitalized Multiple times in the months following her initial COVID diagnosis
81 y/o LTC Resident

Female LTC resident

COPD, CHF, AFIB, HTN, s/p Stroke, Diabetes, PAD

At baseline – mild cognitive impairments, normal PO intake

Diagnosed with COVID – 19 with mild symptoms – mild SOB, no fever, no chest pain

1 month later – significant mental and functional decline, worsening renal function and poor oral intake
Defining Post COVID Syndrome
POST COVID Syndrome Symptoms

- Fatigue
- Difficulty thinking or concentrating
  - sometimes referred to as “brain fog”
- Difficulty breathing
  - with and without abnormal imaging and pulmonary function testing
- Cough
- Painful joints or muscles
- Chest pain
- Depression or anxiety
- Headache
- Fever
- Palpitations
- Loss of smell or taste
- Dizziness on standing
- Rashes
- Hair Loss
- Lesions on Toes “COVID TOES”
Post COVID – 19 Condition ICD-10 U09.9

WHO added new code to ICD-10

Proposal to add to ICD-10 CM made at the March 2021 Meeting

Implementation date – October 1, 2021
Open Discussion
Thank You!

Journal Club will return to our Monthly sessions starting July.
This meeting has been recorded and will be available at www.fmda.org/journalclub.php