AAMC Novel Coronavirus Update
October 7, 2020

To help filter through the large volume of news about the novel coronavirus, Ross McKinney Jr., MD, AAMC chief scientific officer, with assistance from his team in the Scientific Affairs unit at the AAMC, has initiated this science-focused newsletter.

This newsletter will be published once per week on Wednesdays.

Opt-in to receive future updates.

Contact AAMC Senior Science Policy Specialist Amanda Field, PhD, with any other questions or requests.

To access the latest AAMC updates and resources on COVID-19, visit aamc.org/coronavirus. For resources on COVID-19 medical research, read more here.

Please share/forward this newsletter freely.

A note from Ross: This marks the last issue that will be shepherded by Amanda Field, PhD. Dr. Field is taking a new position in the Office of Science Policy at the National Institutes of Health — a well-earned promotion — and we will miss her tremendously here at the AAMC. I hope you’ll agree she’s done a superb job of organizing this newsletter and helped make it a useful weekly summary. Her role for this newsletter will be filled temporarily by Anu Dev, PhD, while we recruit a new science policy specialist. From the bottom of my heart, thank you, Amanda. Job well done.

Today's Numbers

- World: 35,958,084 confirmed cases (1,051,974 deaths)
  - 2,162,000 new cases this week (2,366,000 new cases last week)
- United States: 7,519,846 (211,343)
  - 309,000 new cases this week (294,000 new cases last week)
  - 4,872 deaths this week (5,132 deaths last week)
  - 109,646,837 total tests
- U.S. Hot Spots
  - Vermont: 75 new cases in the past week (175% increase in the past week)
  - New Hampshire: 465 (92%)
  - Rhode Island: 848 (82%)
  - Connecticut: 1,691 (55%)
  - Guam: 380 (50%)

For the most up-to-date data, refer to the Johns Hopkins COVID-19 Map. Details of other U.S. hot spots can be found at the Washington Post's coronavirus data webpage.
The Institute for Health Metrics and Evaluation at the University of Washington Medicine is projecting hospital resource use in the United States based on COVID-19 deaths.

Lead News

President Donald Trump and first lady Melania Trump were infected with SARS-CoV-2 last week. The president spent the weekend in the Walter Reed National Military Medical Center before being discharged on Oct. 5. He reportedly received several therapies, including supplemental oxygen, Regeneron’s experimental monoclonal antibody cocktail REGN-COV2, remdesivir, and dexamethasone. REGN-COV2 has been reported to be most effective in patients who are still anti-SARS-CoV-2 antibody-negative, since it probably accelerates virus neutralization in those cases. [Editor’s comment: The president’s situation obviously received a tremendous amount of media attention. The use of one of the monoclonal antibody preparations was not surprising, given preliminary results and the president’s status. There is another important lesson from the story, as COVID-19 spreads through the White House staff and guests — wear your masks.]

Treatment News

Regeneron used an investor and media webcast to announce preliminary results from their placebo-controlled study of their monoclonal antibody cocktail REGN-COV2 in patients with asymptomatic to moderate COVID-19. Importantly, the researchers evaluated whether or not the research volunteers had antibodies at the time of enrollment, since it is expected the drug would produce more of a response in patients who were seronegative (had not yet developed their own neutralizing antibodies). The report was based on data from 275 patients in a study that intends to enroll 2,100 patients total. The drug rapidly reduced viral load in patients who were seronegative at enrollment. The drug also reduced symptoms more quickly in seronegative patients, who often had higher viral loads at enrollment, compared to those who already had their own antibodies. [Editor’s comment: This summary, which preceded use of the drug in President Trump, shows promise and seems quite similar to the results that Eli Lilly presented two weeks ago. While full studies are pending, monoclonal antibodies will likely be most useful very early in SARS-CoV-2 infection and may not have much utility once patients have produced their own antibody responses.]

The Food and Drug Administration (FDA) issued guidance for industry regarding the use of emergency use authorizations (EUA) for vaccines to prevent COVID-19. Of note, the guidance states that the Vaccines and Related Biological Products Advisory Committee will review the clinical trials data as it would for a normal full approval process. The new guidance is expected to slow the process of EUA approval but is also likely to improve public confidence in the new vaccines. [Editor’s comment: The AAMC supported this arrangement in a public statement that was issued just as the guidance document was released.]

STAT: FDA Issues Rare Emergency Authorization for an Algorithm Used to Inform COVID-19 Care

AP: Push to Bring Coronavirus Vaccines to the Poor Faces Trouble
The Centers for Disease Control and Prevention (CDC) revised its webpage "How COVID-19 Spreads," and it also published a "Science Brief: SARS-CoV-2 and Potential Airborne Transmission." The issues regarding aerosol versus droplet transmission were presented well in a Science letter, which argues that the standard for categorizing a particle as a droplet should be that it is >100 μm, not >5 μm. [Editor’s comment: The critical characteristic to define is whether a particle of a certain size is able to spread SARS-CoV-2, as well as the distance over which spread can occur. The current method of categorization, droplet versus aerosol, has been focused on physical characteristics, but categorization should instead be focused on how the virus functions operationally — whether it spreads like influenza or like the measles. There are situations where the virus can spread over distances greater than 6 feet (e.g., poor ventilation, loud voices, prolonged contact), but distant spread is still uncommon — and strategies like masking and good air circulation can play a mitigating role.]

An article in JAMA reviewed the long-term health outcomes of COVID-19, dividing the post-infectious syndromes into "post-acute COVID-19" for symptoms beyond three weeks from the onset of symptoms, and "chronic COVID-19" for symptoms beyond 12 weeks. The authors note that long-term problems are present both in those who required hospital care and those who were treated as outpatients. The most common manifestations are cardiac, pulmonary, and neurologic.

Casting a wide net for neurological symptoms, investigators at Northwestern University Feinberg School of Medicine found that neurological symptoms were present at some point in the course of 419 out of 509 consecutive patients with COVID-19. The most common symptoms were myalgia (44.8%), headache (37.7%), encephalopathy (31.8%), dizziness (29.7%), dysgeusia (taste disturbance) (15.9%), and anosmia (11.4%). [Editor's comment: Compared to other series, the rate of encephalopathy seems high and the rate of anosmia seems strikingly low. The retrospective nature of the assessment may mean that anosmia was underrecognized. However, there seems to be little doubt that neurological complications of COVID-19 are common.]

A study in JAMA Network Open examined 1,685 COVID-19 patients hospitalized at a large hospital system and found that those with a previous psychiatric diagnosis had a higher risk of death. People with a psychiatric diagnosis are more likely to have comorbidities and less likely to have access to adequate health care and insurance.

The CDC described the challenges facing colleges and universities as they bring together students amid the COVID-19 pandemic. The article does not name the institution in the case being presented, but the list of contributing authors and the timing indicates that it is the University of North Carolina (UNC) at Chapel Hill. Despite a variety of policies and protocols put in place to limit spread once students began to gather, there were 670 known cases of COVID-19 tied to the campus between Aug. 3 and Aug. 25. There were 18 clusters of five or more epidemiologically linked cases, and 96% of cases were in individuals younger than 22 years old (i.e., undergraduate students). On Aug. 19, the school switched to 100% online classes. Students in on-campus housing were sent home and told to quarantine for 14 days. [Editor's comment: The UNC system chose a strategy with relatively little SARS-CoV-2 testing. They reduced the density of housing, required masks, banned large indoor groups, used takeout meals instead of cafeterias, and staggered the arrival of students on campus. Unfortunately, these precautions did not work.]

The CDC reported a recent increase in COVID-19 cases among young adults aged 18-22 over the summer that cannot be fully explained by an increase in testing. In August, cases increased 55% nationally, with the biggest increases in the Northeast (144%) and Midwest (123%). Additionally, cases in White people in this age group increased from 34% to 77% from June to September. The CDC notes that college and university students should take
precaution and that higher education institutions should promote healthy environments.

There has been controversy around whether patients with severe COVID-19 should be offered CPR. A collaborative study published in the "BMJ evaluated 5,019 critically ill patients admitted with COVID-19." 701 (14%) had an in-hospital cardiac arrest. 400 of these patients (57.1%) were given CPR. 48 of the 400 patients (12%) survived to hospital discharge with normal or mildly impaired neurological status. [Editor's comment: While 12% survival without severe neurological consequences sounds dire, the authors point out that it's comparable to the outcomes of in-hospital cardiac arrest and CPR for non-COVID-19 diagnoses.]

MMWR. COVID-19 Trends Among School-aged Children — United States, March 1–September 19, 2020

National Institutes of Health (NIH) Director’s Blog: COVID-19 Can Damage Hearts of Some College Athletes

World Health Organization (WHO): COVID-19 Disrupting Mental Health Services in Most Countries, WHO Survey

Policy News

The FDA Center for Devices and Radiological Health posted an infographic providing an overview of the FDA’s response to the pandemic from Jan. 1 to Sept. 18. The infographic covers several areas: regulatory flexibility, EUAs, shortage mitigation activities, U.S. Public Health Service Commissioned Corps deployment, and engagement with stakeholders.

In collaboration with the Congressional Academic Medicine Caucus, the AAMC held a virtual congressional briefing on Sept. 24 to discuss how the nation’s medical schools and teaching hospitals are actively responding on the front lines of the pandemic, including by adopting innovative methods to overcome challenges brought on by COVID-19. Panelists also discussed the path forward to mitigating COVID-19 and the immediate, evidence-based, commonsense steps that we can take as a nation to contain the virus and end the pandemic.

Science: FDA’s Own Documents Reveal Agency’s Lax, Slow, and Secretive Oversight of Clinical Research

Coronavirus and Health Equity

The U.S. Senate Committee on Health, Education, Labor, and Pensions released a report that identifies steps Congress can take to address COVID-19-related inequities, including ensuring access to high-quality affordable health care, making new financial investments in communities of color, and working to reduce bias and discrimination within the health care system.

As part of its economic reopening plan, California implemented a new health equity measure that requires large counties to ensure positivity rates in marginalized communities within the county’s borders do not significantly lag behind the county’s overall rate before reopening.
The AAMC and the American Hospital Association (AHA) released a joint statement on a National Academies of Sciences, Engineering, and Medicine report on the equitable distribution of a COVID-19 vaccine. “We commend NASEM on a thoughtful, thorough, and evidence-based report that recognizes that the implementation of the allocation strategy — as well as the ethical principles that support it — are as important as the framework itself. Given the significant health, social, and economic injustices laid bare by the pandemic, we are particularly pleased to see the emphasis on mitigating inequities in vaccine access and the related foundational principles of fairness, equity, and transparency,” AAMC President and CEO David J. Skorton, MD, and AHA President and CEO Rick Pollack said.

_Bloomberg: Mapping the Disparities That Bred an Unequal Pandemic_

_CNN: Coronavirus Worsens Food Insecurity in Puerto Rico—Amid a Looming Loss of Federal Funds_

_STAT: COVID-19 Long-Haulers and the Experience of ‘Hidden’ Disabilities_

_NPR: Getting Health Care Was Already Tough in Rural Areas, The Pandemic Has Made It Worse_

_New York Times: 'I Won't Be Used as a Guinea Pig for White People'_

**Research News**

To resolve some of the questions about why certain people have a more severe course with COVID-19 than others, a multi-institutional research group evaluated whether existing memory T CD4 cells, isolated from people from before the arrival of SARS-CoV-2, were able to recognize SARS-CoV-2 and other coronaviruses — and so might be able to respond more quickly to a new SARS-CoV-2 infection. In particular, the researchers asked whether there were cross-reactive CD4 responses to at least one of the four common respiratory coronaviruses and to SARS-CoV-2 in individuals who had never been infected with COVID-19. They found a range of CD4 cells that were reactive to both groups. [Editor’s comment: The memory CD4 cells were able to recognize SARS-CoV-2 despite the fact the individuals who donated the cells had never been infected with SARS-CoV-2. The authors speculated that preexisting cross-reactive immunity might explain some of the variability in clinical course — in other words, people with immunity to older coronaviruses might have milder symptoms from SARS-CoV-2.]

_Nature: Face Masks: What the Data Say_

**Testing News**

The AAMC released a Guide to COVID-19 Tests and Testing, led by Heather Pierce, JD, MPH, senior director for science policy and regulatory counsel at the AAMC, that addresses the most common questions about the different types of tests for COVID-19 and when each type should be used. AAMCNews also discussed issues surrounding COVID-19 testing.

The NIH's Rapid Acceleration of Diagnostics (RADx) program announced support for six new COVID-19 testing technologies based on RNA or virus antigen detection.
The CDC released updated guidance on testing at higher education institutions in the event of an outbreak, providing a tiered approach for how to prioritize which students and staff should be tested first based on exposure or symptoms. While the updated guidance does not go so far as to recommend entry and serial testing at every institution, it does say "a strategy of entry screening combined with regular serial testing might prevent or reduce SARS-CoV-2 transmission."

New York Times: Companies Ditch Plans for Rapid Coronavirus Spit Tests at Home

Science: One Number Could Help Reveal How Infectious a COVID-19 Patient Is. Should Test Results Include It?

Modern Healthcare: Labs Scramble to Fill New Information Systems Needs During COVID

Other COVID-19 News

The Wall Street Journal published an analysis of the long-standing failure of the United States to build a real-time data-sharing system that could allow hospitals to better manage epidemic-related surges. [Editor’s comment: The disappointing tale wanders through several administrations and Government Accountability Office reviews. And sadly, the problem persists.]

Reuters: COVID-19 Cases Surge in U.S. Midwest and Northeast

CNN: Only 3 States Are Reporting Declines in New Coronavirus Cases as the U.S. Hits its Highest Daily Rate in 2 Months

Medpage Today: How Arizona Squelched Its COVID-19 Surge

AP: WHO: 10% of World’s People May Have Been Infected with Virus

Closing with a piece of good news: Unlike with Zika, chikungunya, and malaria, mosquitoes don't promote the spread of SARS-CoV-2.

For questions, contact Amanda Field, PhD, AAMC senior science policy specialist.

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