AAMC Novel Coronavirus Update
September 2, 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.

Today's Numbers

- World: 25,809,515 confirmed cases (858,381 deaths)
  - 1,865,000 new cases this week (1,754,000 new cases last week)
- United States: 6,082,260 (184,974)
  - 269,000 new cases this week (294,000 new cases last week)
  - 6,289 deaths this week (6,725 deaths last week)
  - 78,996,632 total tests
- U.S. Hot Spots
  - South Dakota: 2,178 new cases in the past week (123% increase in the past week)
  - Iowa: 7,378 (84%)
  - Delaware: 549 (67%)
  - Vermont: 58 (50%)
  - West Virginia: 967 (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

The Food and Drug Administration (FDA) issued an emergency use authorization (EUA)
for the Abbott BinaxNOW SARS-CoV-2 antigen detection system. The system uses a small lateral flow card, which means that the BinaxNOW needs no specialized equipment. A nasal swab from a patient is placed in the card with some wetting solution, and if antigen is present, it is detected by antibodies that then trigger a color change. The test will cost about $5, can be performed in around 10-15 minutes, and can be mass-produced. Its sensitivity was reported at 97.1%. [Editor’s comment: This new test is a major step forward in diagnostics. Quick COVID-19 evaluations can now move to the point of clinical care. The sensitivity figure appears to be much higher than other antigen tests, but the tested population was symptomatic individuals infected with SARS-CoV-2. It’s not yet clear what the sensitivity of the test will be during the asymptomatic phase of SARS-CoV-2 infection relative to polymerase chain reaction (PCR) tests currently in use — important information that needs to be investigated quickly.]

Treatment News

On Aug. 28, the FDA expanded the EUA for remdesivir to include all hospitalized patients. Previously, the EUA covered only severely ill patients — defined to include patients with low blood oxygen, needing supplemental oxygen, or requiring ventilatory support. [Editor’s comment: Notably, this expansion came with no new evidence to support benefit in this less-ill patient population. The evidence for remdesivir is marginal at best, consisting of data from a randomized, controlled trial in which treatment resulted in shorter hospital stays by a few days and no survival benefit. Once again, an announcement like this one provokes skeptical looks at the FDA’s use of the EUA standard. Authorizing the wider use of a drug without evidence to support its use is not sound practice.]

The National Institutes of Health (NIH) announced that Phase 3 clinical testing will begin on the COVID-19 vaccine from AstraZeneca as part of the administration’s Operation Warp Speed program. The AstraZeneca vaccine was developed by researchers at Oxford University in the United Kingdom and is based on the use of a nonreplicating chimpanzee adenovirus vector to deliver SARS-CoV-2 spike protein. This is the fourth vaccine to enter Phase 3 clinical testing.

An antibody treatment from Vir Biotechnology and GlaxoSmithKline (GSK) is beginning clinical trials with 1,300 patients with early symptomatic infections. The researchers are hoping that the treatment will reduce the number of hospitalizations, and if successful, they expect results by the end of 2020. Two other antibody treatments from Regeneron and Eli Lilly-AbCellera began clinical trials over the summer and hope to have results by October. [Editor’s comment: Many people question why Vir-GSK would pursue a “me-too” product like this monoclonal antibody when other research groups are already pursuing similar therapeutics. An examination of the drugs used to treat HIV today makes the case for working on me-too drugs, since nearly all currently used anti-HIV drugs were second-generation or later in their class.]

A study in the Journal of the American College of Cardiology has added to the evidence that blood thinners are effective in treating COVID-19. Data gathered from 4,389 adults with confirmed infections who were hospitalized in New York City from March through April showed that using anticoagulation drugs lowered the risk of intubation or death.

The Department of Veterans Affairs (VA) announced a new clinical trial of convalescent plasma for veterans with COVID-19. The study intends to enroll 700 hospitalized veterans in a randomized, controlled trial that will compare plasma to normal saline. This study will be one arm in the VA Coronavirus Research and Efficacy Studies (CURES), which are designed to reuse the same protocol with minor changes for each new treatment under consideration. [Editor’s comment: It’s good that the VA is stepping up to the plate to
answer the question that the 70,000-patient expanded access protocol run by the Mayo Clinic could not: whether a convalescent plasma treatment actually works. Convalescent plasma is another treatment released under an FDA EUA with no real evidence that it does anything. The CURES design resembles the British National Health Service’s Randomised Evaluation of COVID-19 Therapy (RECOVERY) protocol, which also reuses the same study design to more efficiently evaluate multiple treatment options.]

A poll by STAT and the Harris Poll found that **78% of Americans “worry the Covid-19 vaccine approval process is being driven more by politics than science.”** John Hopkins University released a report with recommendations on how to gain public trust so that they will take a vaccine once one has been approved. The report’s key recommendation is to “put people at the center of a revolutionary SARS-CoV-2 vaccine enterprise,” meaning that both bioscience and social and behavioral science must inform vaccine development. The report also recommends that a federal, nationwide plan of vaccine promotion be used in combination with local government working with community partners to understand and combat vaccine hesitancy in local communities. The National Academies of Sciences, Engineering, and Medicine is also tackling this issue — it is seeking public comment on its Preliminary Framework for Equitable Allocation of COVID-19 Vaccine by Sept. 4.

**Clinical News**

A study in *JAMA Pediatrics* reported “the **prevalence of positive SARS-CoV-2 test results in children without symptoms at 28 children’s hospitals across the US**” and found a low prevalence in pooled samples. Because the pooled prevalence was heterogeneous, the researchers suggest that site-specific prevalence data might be more useful than regional prevalence data.

The Centers for Disease Control and Prevention (CDC) reported on a SARS-CoV-2 seroprevalence study performed on front-line health care workers from 13 academic medical centers across the United States between April and June. The analysis of more than 3,200 health workers found that **approximately 6% of them tested positive for SARS-CoV-2 antibodies**, suggesting they had previously been infected. Of these seropositive individuals, 29% did not recall having any symptoms consistent with COVID-19 and nearly 1 in 2 had no suspicion they were infected. One piece of good news was that health care workers who said they wore face coverings during all interactions with patients were less likely to have SARS-CoV-2 antibodies than those who reported inconsistent mask use. [Editor’s comment: It is not surprising that 29% of the seropositive individuals had no symptoms, given the frequency of asymptomatic infection, but the study shows how important it is to wear face coverings for personal protection. There were widespread shortages of personal protective equipment at the time of this study, which meant that not all health care workers could consistently wear N95 masks. The finding that masks protected these health care workers is useful, as it shows that wearing masks is important to protect not only the people around mask-wearers but also the mask-wearers themselves. And given how many infected health care workers were apparently asymptomatic, the need for health care workers to wear masks becomes particularly clear.]

Survey data of 1,000 people published in *Pediatrics* found that more than a quarter of parents stated that their mental health has worsened since March and reported increasing behavioral issues with their children. Respondents also reported delaying well or behavioral health doctor visits during the pandemic. The authors suggest that policymakers should “consider the unique needs of families with children” while developing COVID-19 policies.
Following the report that a man in Hong Kong was infected with SARS-CoV-2 a second time with no symptoms during his second infection, as highlighted in last’s week Coronavirus Update, several other cases of second infections have been reported, including in Belgium, the Netherlands, and Nevada. Unlike the other cases, the man in Nevada had more severe symptoms during his second episode. But it is too early to tell how troubling this find was, as there have been too few cases to know how the greater population will respond to second infections and how frequently it will occur.

An interesting case report from JAMA Internal Medicine compared the risk of SARS-CoV-2 transmission in two buses in China in January 2020. Both buses were taking monks on a 100-minute ride to a religious ceremony. One bus had a person who turned out to be infected with SARS-CoV-2, while the other did not. All of the monks attended the same 150-minute worship service. On the bus with the infected index case, 35% of the riders were diagnosed with COVID-19. None of the 60 riders on the other bus were infected. The investigators propose that respiratory spread in the bus, which had poor air circulation, might have been the means of spread.

NIH Director’s Blog: Study Ties COVID-19-Related Syndrome in Kids to Altered Immune System

STAT: My Severe COVID-19: It Felt Like Dying in Solitary Confinement

Medpage Today: The Cost of Herd Immunity in the U.S.

Policy News

The CDC updated its guidance on travel during COVID-19.

Nature: Why the United States Is Having a Coronavirus Data Crisis

Bloomberg Businessweek: Covid Gag Rules at U.S. Companies Are Putting Everyone at Risk

Coronavirus and Health Equity

According to new research released this past week, Black patients in New York City were 40% less likely than White patients to access health care via telemedicine during the early part of the pandemic, and researchers in Massachusetts found that a 10% increase in a city’s or town’s Black population resulted in an increase of 312.3 COVID-19 cases per 100,000. For Latinx individuals, a 10% increase in population resulted in an increase of 258.2 cases per 100,000, though this relationship was attenuated after accounting for proportion foreign-born, mean household size, and share of food service workers.

A letter to the editor of the American Journal of Psychiatry, which was subsequently summarized in an NIH media advisory, detailed the myriad ways the COVID-10 pandemic has disproportionately impacted individuals with intellectual and developmental disabilities. Many have lost support of trained caregivers during the pandemic and do not benefit from screen-based supports, which also means telemedicine is often not an option for health care access. Further, suspension of classroom time hits this community particularly hard as many rely on special education and in-person specialized services.

The Health Affairs blog provided an explanation of three existing community-based site
types that policymakers and public health advocates should focus on as they consider ways to create access to a potential COVID-19 vaccine: mobile health clinics, drive-through testing and immunization sites, and school-based health centers.

**NIH-supported Study to Track Prevalence and Impact of SARS-CoV-2 Among Pregnant Women in Low- and Middle-Income Countries**

**AAMCNews: Prison Should Not Be a COVID-19 Death Sentence**

**Economic Policy Institute: Latinx Workers—Particularly Women—Face Devastating Job Losses in the COVID-19 Recession**

**New York Times: Why the Coronavirus More Often Strikes Children of Color**

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### Research News

An article in the *BMJ* examined the evidence that supports whether keeping six feet apart is adequate protection against SARS-CoV-2 infection. The authors argue that this rule is "based on an outdated, dichotomous notion of respiratory droplet size," saying that research shows that clouds of respiratory droplets of all sizes can move meters in a few seconds. They state, "After the cloud slows sufficiently, ventilation, specific patterns of airflow, and type of activity become important. Viral load of the emitter, duration of exposure, and susceptibility of an individual to infection are also important." Rather than a blanket rule of six feet, the authors propose graded recommendations that take all these factors into account.

Four new studies out of Europe, three of which are non-peer-reviewed preprints, have provided more evidence on the infection fatality rate (IFR) of the coronavirus, "which is the proportion of people infected with the virus, including those who didn’t get tested or show symptoms, who will die as a result." All four studies indicate that the IFR is close to zero in young people but increases sharply around the age of 50, when about 5 in 1,000 people will die. After the age of 70, about 116 in 1,000 people will die. The research also found that men are nearly twice as likely to die as women.

A study out of Iceland in the *New England Journal of Medicine* found that nearly everyone who tested positive for SARS-CoV-2 by PCR remained seropositive after 120 days, meaning that they still had antibodies against the coronavirus four months after infection. The study also found that the IFR in Iceland was 0.3 and that 44% of the people who were found to be seropositive had not been diagnosed by PCR. 33% of seropositive individuals never had symptoms consistent with COVID-19. It is still unknown if having antibodies means they will be protected against a second infection.

*Science: Structural Basis of a Shared Antibody Response to SARS-CoV-2*

*Atlantic: America Is Running Low on a Crucial Resource for COVID-19 Vaccines (The Country Is Facing a Monkey Shortage.)*

*Nature: How Many People Has the Coronavirus Killed?*

*Scientist: Modeling Study Flags Species Susceptible to SARS-CoV-2*

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### Testing News
The FDA created a new webpage that pulls together relevant resources and recommendations on pooled sample testing and screening of asymptomatic individuals.

Universities have been adding a new tool to their COVID-19 risk monitoring: screening wastewater that emerges from college dorms. A recent example from the University of Arizona was credited with possibly stopping an outbreak before it had a chance to grab a foothold.

Science explained the benefits of saliva testing.

Washington Post: White House Announces Deal to Provide 150 Million Rapid Coronavirus Tests

Other COVID-19 News

The Mayo Clinic provided COVID-19 safety tips for travel, restaurants, the gym, and more.

Modern Healthcare: St. Louis Area Sees 'Alarming' Spike in Virus Hospitalizations

Washington Post: Coronavirus Cases in Some European Countries Are Rising Again, but With Fewer Deaths. For Now.

New York Times: ‘Here We Go Again’: A Second Virus Wave Grips Spain


Washington Post: Maine Sleep-away Camps Prevented Coronavirus Spread Among More Than 1,000 People, CDC Report Finds

Boston Globe: How an Intimate Wedding in Rural Maine Led to the State’s Largest COVID Outbreak

AAMCNews: I’m a Contact Tracer in San Francisco. You Won’t Believe the Stories I Hear.

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