AAMC Novel Coronavirus Update

May 8, 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 a new, science-focused newsletter. This limited-run newsletter will be issued every Monday, Wednesday, and Friday for the foreseeable future.

If you would like to opt-in to receive future updates, add your name, email, and institution to this survey.

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.

Please share/forward this newsletter freely.

Today's Numbers

- World: 3,864,696 (270,020 deaths)
  - 1.2 times the number of cases and 1.2 times the number of deaths over the past week
- United States: 1,256,972 (75,670)
  - 1.2 times the number of cases and 1.2 times the number of deaths over the past week
  - 8,105,513 total tests
- States with Most Confirmed Cases:
  - New York: 327,469 (26,144)
  - New Jersey: 133,991 (8,549)
  - Massachusetts: 73,721 (4,552)
  - Illinois: 70,871 (3,111)
  - California: 92,360 (2,546)

For the most up-to-date data, refer to the Johns Hopkins COVID-19 Map.

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.
As part of its approval process, Gilead Sciences donated around 100,000-200,000 courses of remdesivir to the federal government. There is no other distributor at present, so the federal government will allocate those courses. At present, its allocation process is not at all transparent. [Editor’s comment: The core issue is that there are approximately 25,000 new cases of COVID-19 every day in the United States and only about 150,000 courses of the drug available — a six-day supply. Normally, antiviral drugs are most effective when administered early so that they can attenuate the triggering of an inflammatory cascade. Because remdesivir is an intravenous drug, it’s inconvenient to administer to patients early in their disease, and, given the limited supply, it’s being limited to hospitalized patients with severe disease. Since the clinical studies suggest the drug isn’t a lifesaver, this allocation issue isn’t a critical problem, but it would be logical for the government to publish its allocation algorithm so that it can be critiqued and understood. The same transparency issue is also evident in how the federal government is allocating scarce testing supplies.]

Treatment News

An unrandomized observational study from Italy of the potent anti-inflammatory drug anakinra showed promise for patients with severe COVID-19. Randomized studies are ongoing.

Clinical News

A report from the Well Being Trust and the Robert Graham Center made projections about the numbers of deaths of despair (from suicide and substance abuse) that will result from the COVID-19 pandemic, estimating that 75,000 deaths is the most likely scenario. The report gives recommendations on mitigating these numbers, including providing work for people who become unemployed because of COVID-19 and increasing access to mental health care. The AAMC has a comprehensive collection of well-being, mental health, and related resources available here: Well-Being in Academic Medicine.

Policy News

Modeling the COVID-19 epidemic has been critical to public policy regarding disease management. The overdependence on one model has produced flawed reasoning and some affirmation bias in decision making. The authors of one policy piece in Science offer a modified Delphi approach to create an ensemble of models in order to better understand the range of possibilities that might be encountered and inform decision making.

The Infectious Diseases Society of America has provided guidelines with eight recommendations on protecting health care workers from infection while working with COVID-19 patients. As more is discovered about how the virus is transmitted, these recommendations may need to be updated.

Science Editorial: Combination Prevention for COVID-19

Science Editorial: Beat COVID-19 through Innovation

Coronavirus and Health Equity
After issuing a directive on May 3 that permitted doctors to test asymptomatic members of racial and ethnic minority groups disproportionately impacted by COVID-19, the Centers for Disease Control and Prevention (CDC) changed course just three days later. As of May 6, testing priority will be limited once again to persons with symptoms and all health care workers. All mentions of racial and ethnic minorities have been removed from the CDC’s guidance and website.

The reversal comes as national data continue to show that lower-income communities and communities of color are at higher risk of serious illness once infected with the novel coronavirus, and new polling data from California reveal that, in addition to disproportionate health risks, racial and ethnic minorities are more likely than white people to report they are at “major risk” financially and less able to physically distance from co-workers.

A new data brief from the Veterans Health Administration’s Office of Health Equity (link to data is unavailable) shows that a high proportion of positive COVID-19 tests are among black and Latinx veterans.

NEJM: Racial Health Disparities and COVID-19 — Caution and Context

Washington Post: Hispanics Are Almost Twice as Likely as Whites to Have Lost their Jobs Amid Pandemic, Poll Finds

Research News

The coronavirus requires two receptors, ACE2 and TMPRSS2, on the surface of the host cell to enter that cell and replicate. Researchers are using gene expression libraries, which give data on which cell types in the human body express certain proteins, to understand in which cells SARS-CoV-2 can replicate. This information has helped make the pathogenesis of the virus clearer, including its propensity to spread throughout the body by replicating in vascular endothelial cells (that have these two receptors) that line blood vessels. The ubiquity of the coronavirus spread in the entire body contrasts with influenza, which replicates largely in only the respiratory epithelial cells that it actively damages. The rest of the influenza syndrome is the result of the body’s immune reaction, not viral dissemination.

Related, the Wall Street Journal details what we know so far about how the coronavirus affects the various organ systems.

An observational study of 2,733 patients in the Journal of the American College of Cardiology indicates that blood thinners may improve COVID-19 patients’ chances of survival — 29% of patients on ventilators receiving blood thinners died, compared to 63% not receiving blood thinners. Mortality for patients not on ventilators was not significantly different between those on blood thinners and those that were not, but those on blood thinners survived longer. A clinical trial is being conducted to randomly assign patients to treatment and control for factors that may have confounded the observational study.

A study in JAMA used data from hospitalizations in Wuhan and Guangzhou, China, to determine the level of hospital capacity needed to respond to outbreaks in the United States. The two cities used different strategies — Wuhan had a “higher inpatient and intensive care unit utilization” while Guangzhou had a lower utilization and “implemented strict social distancing measures as well as contact tracing and quarantine protocols earlier than Wuhan.” The researchers suggest that “strict disease control strategies should
be implemented early" to mitigate hospitalization needs.

A viewpoint in JAMA is calling for the inclusion of children in COVID-19 clinical trials. [Editor’s comment: COVID-19 impacts children differently, so the inclusion of children in clinical trials would require stratification so that children did not dilute the power of the study for adults in whom the disease is generally more aggressive.]

*Lancet*: The Immune System of Children: The Key to Understanding SARS-CoV-2 Susceptibility?

National Institutes of Health (NIH): NIH-supported Research Survey to Examine Impact of COVID-19 on Rare Diseases Community

*Science*: Quantifying SARS-CoV-2 Transmission Suggests Epidemic Control with Digital Contact Tracing

*Nature*: How Do Children Spread the Coronavirus? The Science Still Isn’t Clear

### Testing News

NIH Director Francis Collins, MD, PhD, gives an excellent review of current research on serologic testing for SARS-CoV-2.

### Other COVID-19 News

The news from France that a patient had the virus in December was reported as a surprising find, but the World Health Organization says it is not surprised.

*The Atlantic*: The Problem with Stories about Dangerous Coronavirus Mutations


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