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GW COVID-19 Intelligence Reports

GW Covid-19 Collection

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### GW Covid-19 Intelligence Reports: October 26, 2020

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### Epidemiology/Transmission

- A study funded by NIOSH and CDC reports the [efficacy of different face coverings](#) as follows: N95 respirator blocked 99% of the cough aerosol, a procedure mask blocked 59%, a 3-ply cloth face mask blocked 51%, and a polyester neck gaiter blocked 47% as a single layer and 60% when folded into a double layer. In contrast, the face shield blocked 2% of the cough aerosol.
- Under laboratory conditions, SARS-CoV-2 can [remain infectious](#) on some surfaces for significantly longer periods, up to 28 days, at colder temps (20 degrees Celsius) but survive less than 24 hours at 40 degrees Celsius.
- CDC has updated its primer on SARS-CoV-2 and [potential airborne transmission](#), underscoring the majority of infections are spread through close contact, not airborne transmission.
- Mild-to-moderate COVID-19 patients are [highly unlikely to be infectious](#) after day 10. Immunocompromised and severe-to-critical patients may be infectious for more than 10 days.

### Diagnostics

- The CDC has released guidance on [point-of-care tests](#), including regulatory requirements regarding who can administer the tests, what tests can be used, and specimen collection, handling, and reporting requirements. The NIH has launched the [Rapid Acceleration of Diagnostics \(RADx\) program](#) to support the development, production scale up, and deployment of accurate, rapid tests for COVID-19.
- A recent study of [SARS-CoV-2 diagnostics](#) found molecular tests showed excellent specificity (ranging from 95% to 100%) but significant differences in sensitivity, which ranged from 62.4% to 91.8%. However, there is [no significant difference in mortality rates](#) between infected patients who initially test positive or negative.

### Treatments: Positive Studies

- [FDA gave traditional approval \(as opposed to emergency use authorization\) for Veklury \(remdesivir\)](#) on October 22 for use in adults and pediatric patients (12 years of age and older) for the treatment of COVID-19 requiring hospitalization. Veklury should only be administered in a hospital or in a healthcare setting capable of providing acute care comparable to inpatient hospital care.
- A systematic [review of 4 clinical trials on remdesivir in patients with COVID-19](#) found that it may improve recovery and reduce serious adverse events and may reduce mortality and time to clinical improvement. For adults with moderate COVID-19, not receiving mechanical ventilation or ECMO, [a 5-day course of remdesivir](#) may provide similar benefits to and fewer harms than a 10-day course.
- A RCT showed remdesivir was superior to placebo in [shortening the time to recovery](#) in adults who were hospitalized with COVID-19 and had evidence of lower respiratory tract infection.
- In one study, hospitalized patients with [severe COVID-19 treated with methylprednisolone](#) had a significantly increased clinical improvement and lower mortality rate compared with patients in the standard care group. A second study found that [methylprednisolone administered within the second week](#) after the onset of symptoms improved the outcomes for patients with severe disease.

- [Therapeutic enoxaparin](#) improves gas exchange and decreases the need for mechanical ventilation in severe COVID-19.
- A pilot study found that a [high dose of Calcifediol or 25-hydroxyvitamin D](#) significantly reduced the need for ICU treatment of patients requiring hospitalization for COVID-19.
- Eli Lilly has reported preliminary results of a randomized placebo-controlled trial that its [combination of two monoclonal antibodies](#) was found to be effective in non-hospitalized patients in reducing levels of coronavirus and may reduce hospitalization.
- A prospective observational study on patients treated with oral antivirals (lopinavir/ritonavir and chloroquine) with or without [intramuscular administration of IFN- \$\alpha\$ 2b](#) suggests benefit for IFN treatment with respect to complete recovery and reduced mortality.

### **Treatments: Negative or inconclusive studies**

- A Cochrane review of 19 studies found [information too limited](#) to determine the benefit or safety of convalescent plasma therapy for patients with COVID-19. There are 138 ongoing studies, including 73 RCTs and so more data is forthcoming.
- [Leflunomide combined with IFN  \$\alpha\$ -2a](#) did not reduce the duration of viral shedding in COVID-19 patients beyond IFN  $\alpha$ -2a alone.
- In a recent RCT, [tocilizumab did not improve clinical status or mortality](#) for hospitalized COVID-19 patients.
- In a WHO-sponsored RCT, [remdesivir, hydroxychloroquine, lopinavir and interferon regimens](#) appeared to have little or no effect on hospitalized COVID-19, as indicated by overall mortality, initiation of ventilation and duration of hospital stay.
- A RCT of [lopinavir-ritonavir](#) was not associated with reductions in 28-day mortality, duration of hospital stay, or risk of progressing to invasive mechanical ventilation or death.
- Hospitalized patients with Covid-19 receiving [hydroxychloroquine did not have a lower incidence of death](#) at 28 days than those who received usual care. A systematic review and meta-analysis of [hydroxychloroquine or chloroquine with or without azithromycin](#) found that hydroxychloroquine or chloroquine alone did not decrease mortality and the combination with azithromycin significantly increased mortality. Further, hydroxychloroquine administered as a [pre-exposure prophylaxis](#) to health care workers offered no benefit.

### **Vaccines**

- The National Academies of Science, Engineering and Medicine released its framework and recommendations for [equitable allocation of vaccine for SARS-CoV-2](#) which propose criteria to be used to set priorities for equitable distribution among groups of potential vaccine recipients, taking into account factors such as population health disparities; individuals at higher risk because of health status, occupation, or living conditions; and geographic distribution of active virus spread.
- A study of the [mRNA-1273 vaccine](#) involving older adults found that adverse events were mainly mild or moderate and supported the use of the 100- $\mu$ g dose in a phase 3 vaccine trial.

### Clinical Updates

- Progression to respiratory failure within 24 hours of admission to the hospital can be predicted using bedside respiratory examinations within the [Quick COVID-19 Severity Index](#) scoring system.
- Using Hopkins' [COVID Inpatient Risk Calculator](#), the factors on hospital admission that are predictive of severe disease or death include: age, nursing home residence, comorbid conditions, obesity, respiratory symptoms, respiratory rate, fever, absolute lymphocyte count, hypoalbuminemia, troponin level, and C-reactive protein level and the interactions among these factors.
- Stanford researchers have compiled a summary report on what is known about the [impact of COVID-19 across disease states](#) and specialty areas including specific findings for cardiovascular, pulmonary, renal, hematologic, oncologic, traumatic, psychiatric, obstetric/gynecologic, operative, rheumatologic/immunologic, neurologic, gastrointestinal, ophthalmologic, and endocrine disorders.
- Despite limited evidence, researchers are trying to better understand [the long-term effects of COVID-19](#), also called “ongoing COVID-19” and “Long Covid,” and how many patients are affected.
- [Neurological manifestations of COVID-19 are not uncommon](#) and include myalgias, headaches, encephalopathy, dizziness, dysgeusia, and anosmia. Seizure, stroke and hypoxic/ischemic injury were seen, although less frequently. Severe COVID-19 [increased risk for developing neurologic symptoms](#).
- In one [global study of adults](#) hospitalized with COVID-19, compared with adults hospitalized with flu between 2014-2019, COVID-19 patients have more typically been male, younger, and with fewer comorbidities and lower medication use.
- [Acute kidney injury](#) (AKI) in hospitalized patients with COVID-19 was associated with significant risk of death. Among patients with AKI not on dialysis, 74.1% achieved kidney recovery by discharge.

### Disease Trends

- Compared to 18 other countries, the U.S. [experienced high COVID-19 associated mortality](#) and excess all-cause mortality into September 2020, higher than even countries with high COVID-19 mortality.
- A large study of [patients treated at the VA](#) found that Black and Hispanic individuals were more likely to be tested and to test positive for COVID-19 than Whites, even after adjustment for underlying health conditions, geography and other demographics.
- One [retrospective study](#) found that non-COVID-19 admissions were substantially lower for patients residing in majority-Hispanic neighborhoods (32% below baseline) and remained well below baseline for patients with pneumonia (-44%), COPD/asthma (-40%), sepsis (-25%), urinary tract infection (-24%) and acute ST-elevation myocardial infarction (-22%).

### Pediatrics

- Although the [majority of children with SARS-CoV-2 infection](#) have normal leukocyte counts, the most common hematological finding is leukopenia, followed by lymphopenia which may be a marker

of severe disease. In neonates and infants, the most common abnormality is lymphocytosis. Anemia and hypercoagulability is mainly present in children with MIS-C.

- The International Late Effects of Childhood Cancer Guideline Harmonization Group has released guidance on [caring for childhood, adolescent, and young adult cancer survivors](#), who may be at higher risk of a severe course of COVID-19.

### **Workforce**

- Family-centered care is widely regarded as best practice for ICU patients, and because of restricted visitation, [medical student “Family Engagement Navigators”](#) can be trained to fill the gap.
- An updated study on COVID-19 in [health care workers across 8 countries](#) found that goggles and face shield usage and infection control education reduced risk. The incidence of infection ranged from 0.4% to 49.6% and the prevalence of seropositivity ranged from 1.6% to 31.6%.

### **Influenza**

- The WHO Strategic Advisory Group of Experts (SAGE) has prioritized the following groups for [seasonal flu vaccination during the pandemic](#): Health workers, older adults (both at highest risk) and pregnant women, individuals with underlying health conditions, and children.

### **Regulatory**

- CMS has posted [requirements and an enforcement process](#) for reporting COVID-19 data elements for hospitals.

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This report was produced by Dora Hughes, MD, MPH; Himmelfarb Reference Librarians and the GW Covid-19 Intelligence Unit. If you have a question that the Intelligence Unit can assist you with, or if you would like to provide suggestions or feedback, please email Dr. Lawrence Deyton, lead for the Intelligence at [L.Deyton@gwu.edu](mailto:L.Deyton@gwu.edu).

NOTE: Intelligence Reports will be issued monthly with Special Intelligence Reports issued on topics of immediate interest on an as needed basis. Interim updates are available – see Dr. Hana Akselrod’s Department of Medicine weekly Infectious Disease Update available on the GW Covid-19 Intelligence Reports webpage at <https://guides.himmelfarb.gwu.edu/SituationReport>

Searchable GW Covid-19 resources can be found through the following links:

GW Covid-19 Research Guide: <https://guides.himmelfarb.gwu.edu/covid-19>

GW Covid-19 Intelligence Reports: <https://guides.himmelfarb.gwu.edu/SituationReport>