

7-2-2020

Covid-19 Clinical Update 7/2/2020

George Washington University

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Recommended Citation

George Washington University, "Covid-19 Clinical Update 7/2/2020" (2020). *GW Infectious Disease Updates*. Paper 17.

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Blog > 2020 > June > How to Properly Wear A Face Mask and Why?

How to Properly Wear A Face Mask and Why?

6/26/20 • Health & Wellness

Wearing a mask slows the spread

We now know from recent studies that many people with coronavirus don't have any symptoms and that even those who eventually develop symptoms can transmit the virus to others before showing symptoms. That means the virus can spread between people who are close to each other when speaking, coughing, or sneezing, even if they aren't showing



COVID-19 UPDATE

HANA AKSELROD, MD, MPH

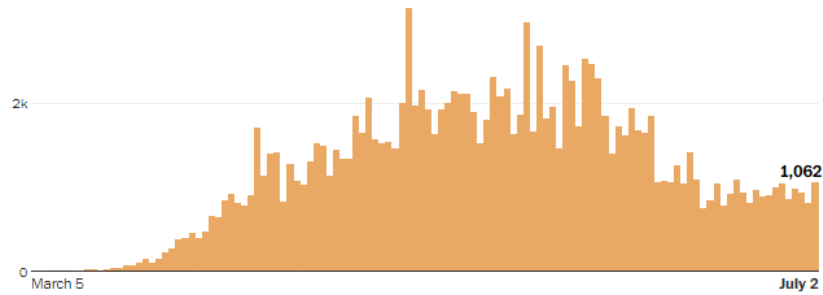
GW DIVISION OF INFECTIOUS DISEASES

7/2/2020

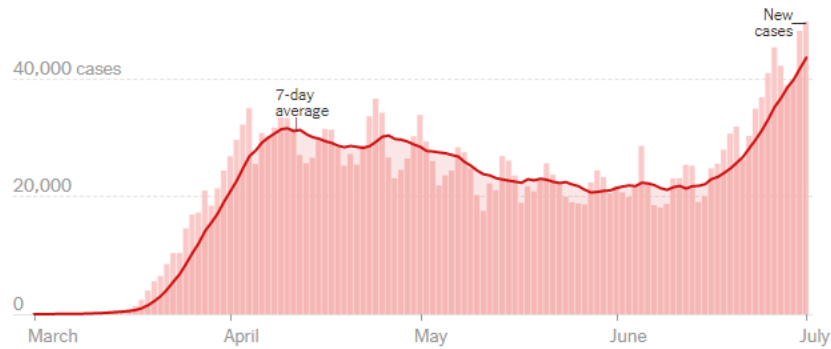
DISCLOSURES: NO FINANCIAL COI. NO STOCK IN MASKS.

<https://www.gwdocs.com/blog/2020/june/how-to-properly-wear-a-face-mask-and-why/>
<https://www.atlasobscura.com/articles/pets-during-1918-influenza-epidemic>

New daily cases reported in D.C., Maryland and Virginia

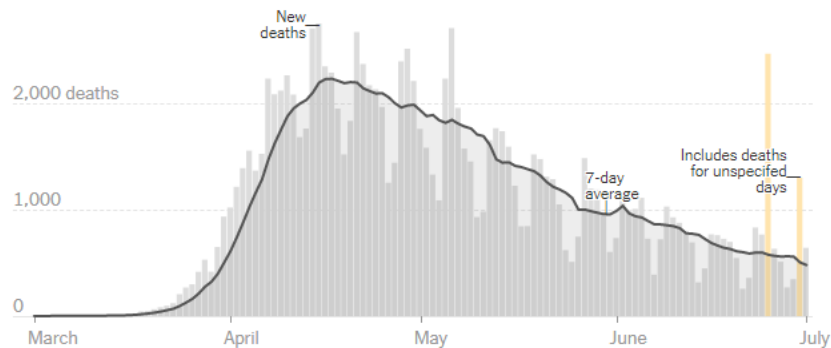


New reported cases by day in the United States



Note: The seven-day average is the average of a day and the previous six days of data.

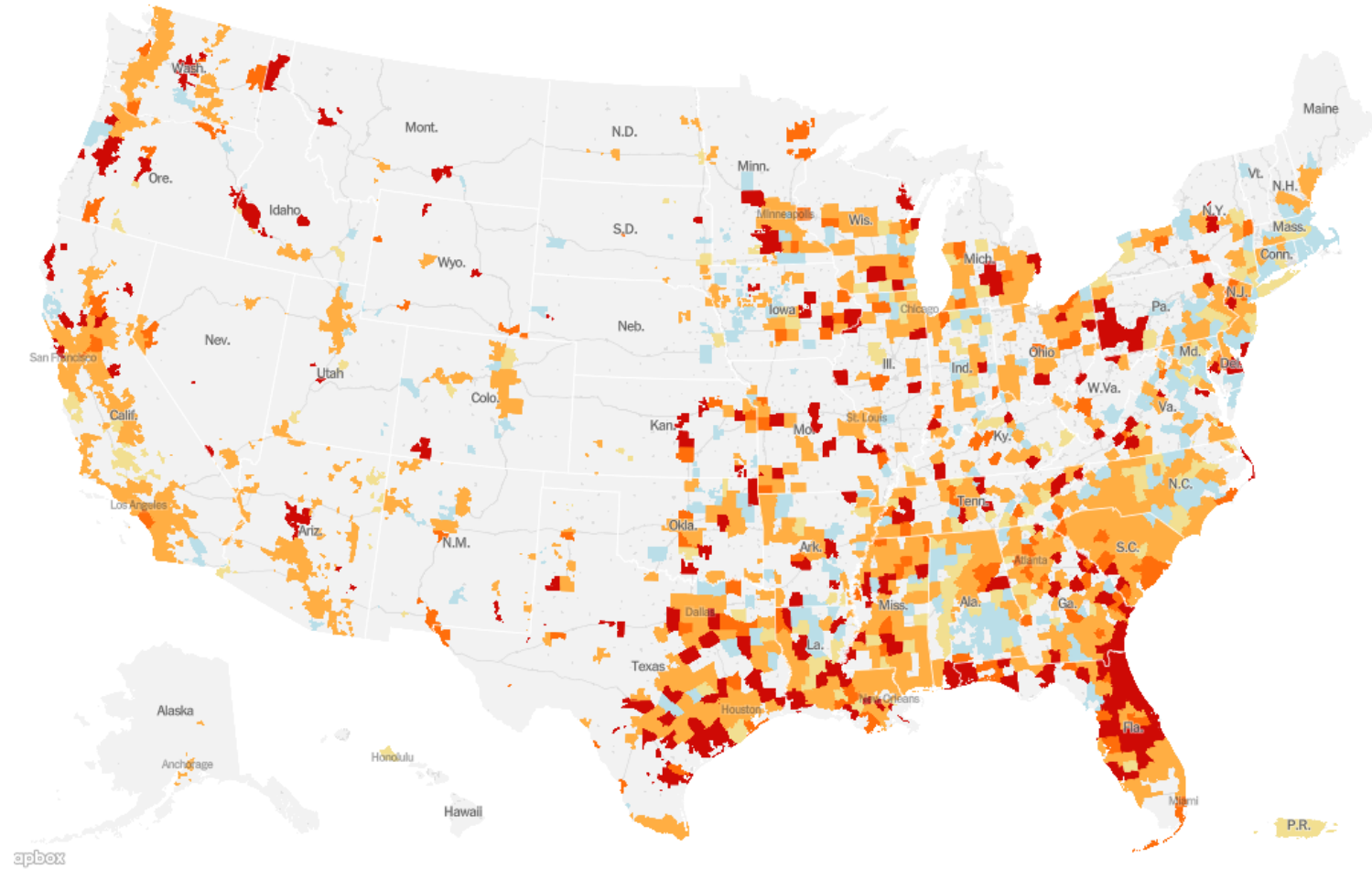
New reported deaths by day in the United States



How the number of new cases has changed in the last two weeks

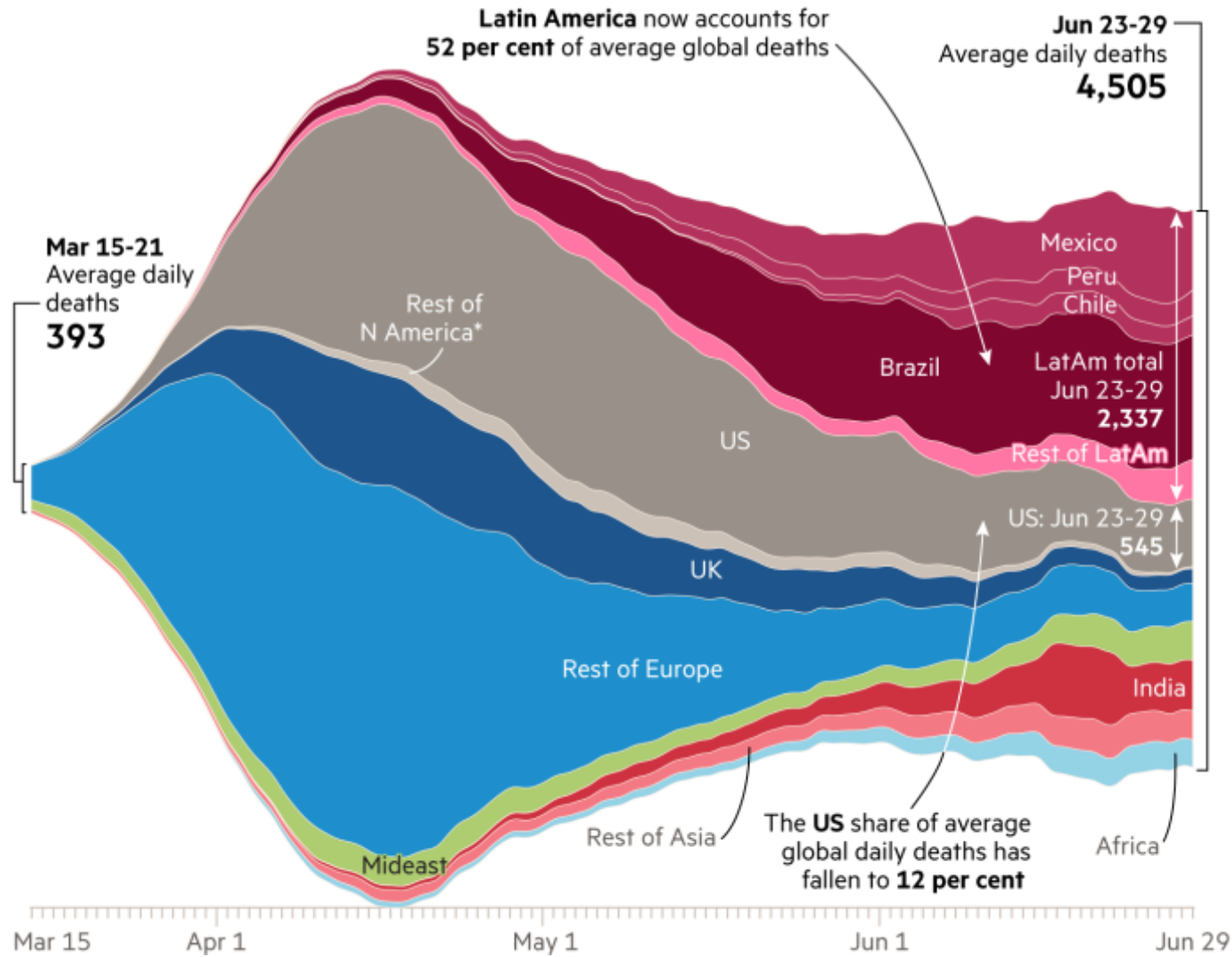


Double-click to zoom into the map.



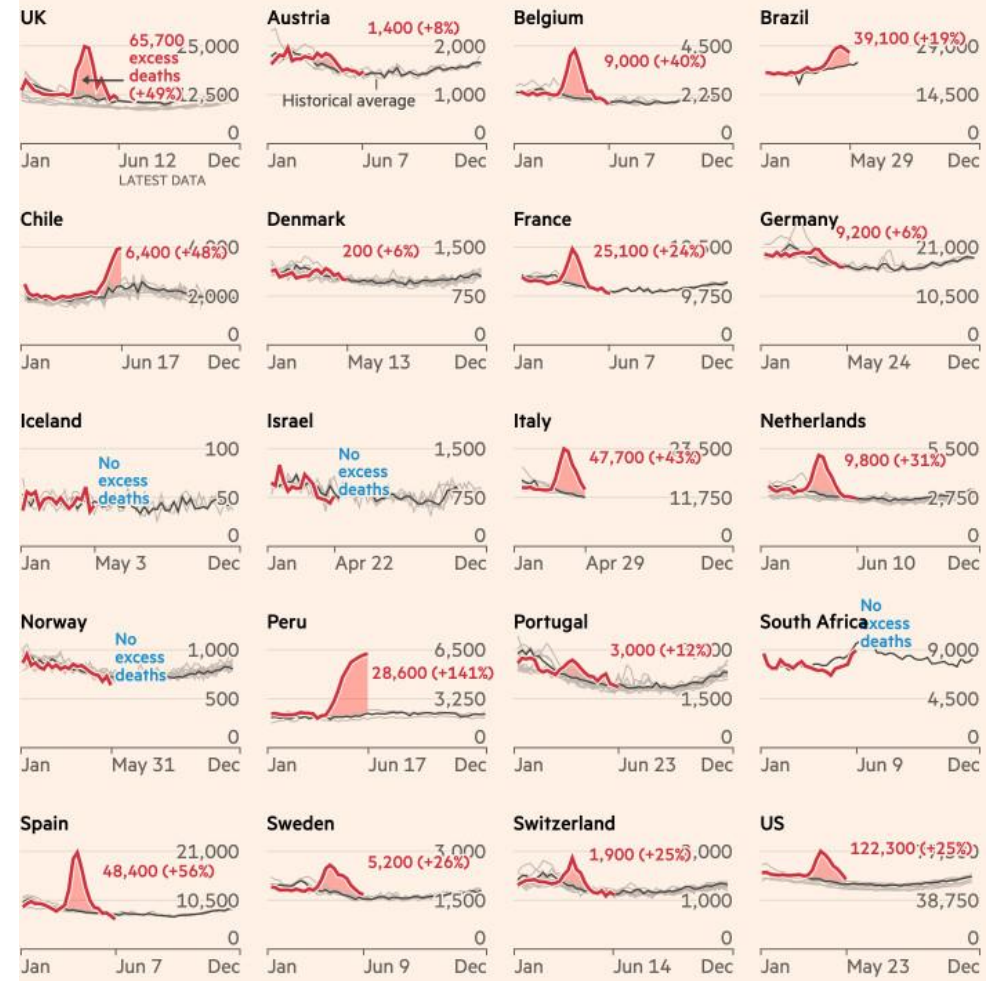
Surge in Latin America means global daily death toll on the rise once again

Daily deaths of patients diagnosed with coronavirus (7-day rolling average)



Death rates have climbed far above historical averages in many countries that have faced Covid-19 outbreaks

Number of deaths per week from all causes, 2020 vs recent years: Shading indicates total excess deaths during outbreak



Source: FT analysis of mortality data. Data updated June 23
 FT graphic: John Burn-Murdoch / @jburnmurdoch
 © FT

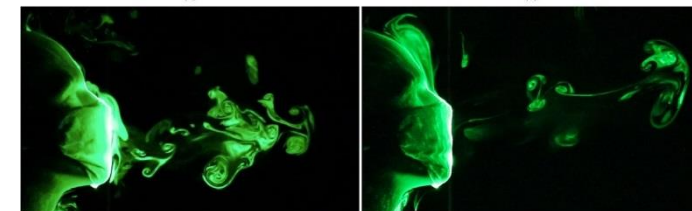
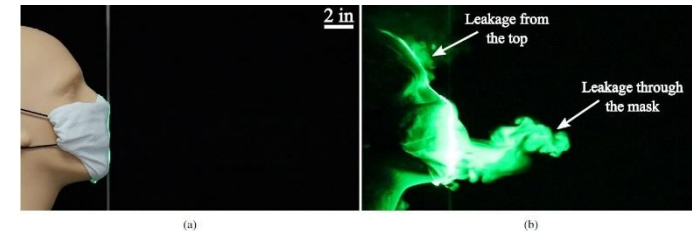
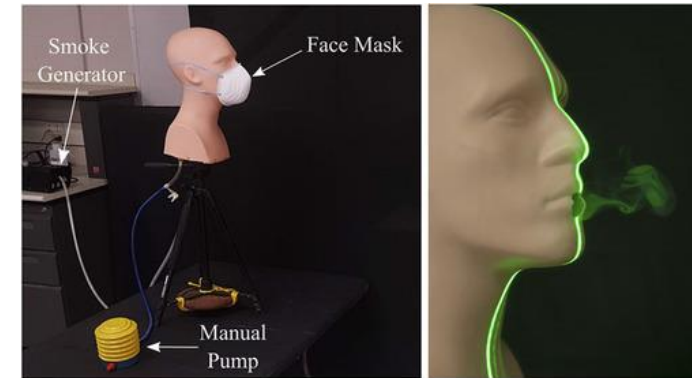
Visualizing the effectiveness of face masks in obstructing respiratory jets F

Physics of Fluids 32, 061708 (2020); <https://doi.org/10.1063/5.0016018>

Siddhartha Verma^{a)}, Manhar Dhanak^{b)}, and John Frankenfield^{c)}

Transmission

- Simulation/visualization study
- Comparing different mask materials
- Aim: informing layperson mask use
- Droplet travel distance:
 - Without a mask >8 feet
 - Bandana: 3 feet, 7 inches
 - Folded cotton handkerchief: 1 foot, 3 inches
 - Stitched quilted cotton mask: 2.5 inches
 - Cone-style mask: 8 inches



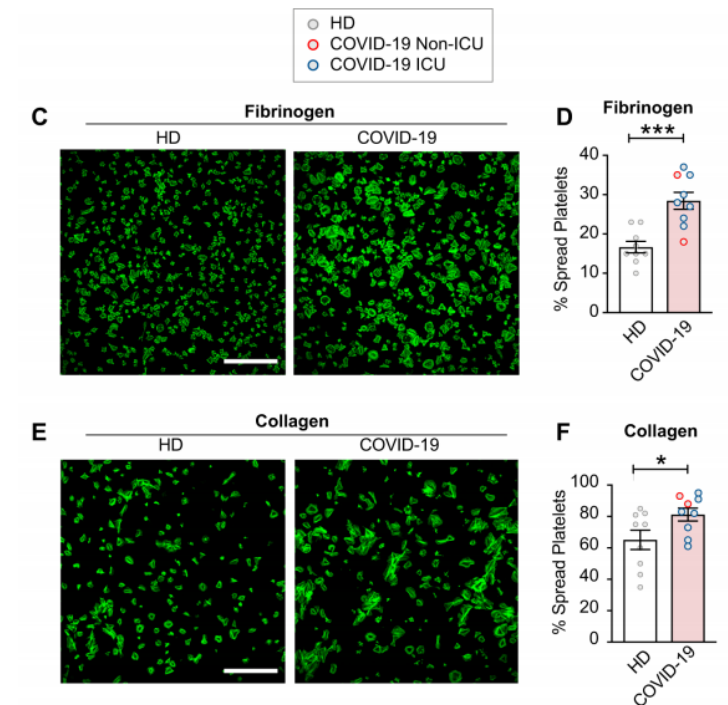


JUNE 23, 2020

Platelet Gene Expression and Function in COVID-19 Patients

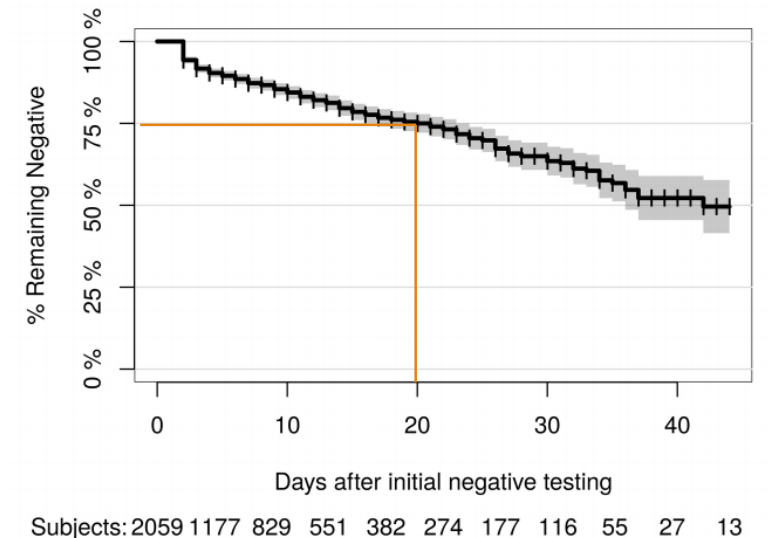
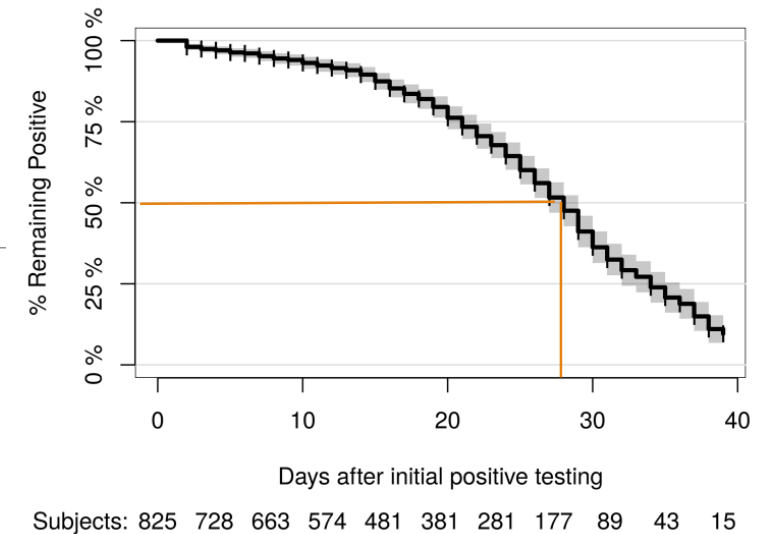
Bhanu Kanth Manne, Frederik Denorme, Elizabeth A Middleton, Irina Portier, Jesse W Rowley, Chris J. Stubben, Aaron C. Petrey, Neal D. Tolley, Li Guo, Mark J. Cody, Andrew S. Weyrich, Christian Con Yost, Matthew T. Rondina, Robert A. Campbell

- SARS-CoV-2 induces robust gene expression and functional changes in platelets.
- ACE2 was not detected platelets. Surprisingly, mRNA from the SARS-CoV-2 N1 gene was detected in platelets from 2/25 COVID-19 patients, suggesting platelets may take-up SARS-COV-2 mRNA independent of ACE2
- Platelets from COVID-19 patients had increased P-selectin expression, and circulating platelet-neutrophil, -monocyte, and -T-cell aggregates compared to healthy donors
- Platelets from COVID-19 patients aggregated faster and showed increased spreading on both fibrinogen and collagen
- The increase in platelet activation and aggregation could partially be attributed to increased MAPK pathway activation and thromboxane generation
- These findings demonstrate that SARS-CoV-2 infection is associated with platelet hyperreactivity which may contribute to COVID-19 pathophysiology
- Platelet hyperreactivity may contribute to COVID-19 pathophysiology through increased platelet-platelet and platelet-leukocyte interactions



Clinical Performance of PCR Tests for SARS-CoV-2

- Clinical performance of PCR for SARS-CoV-2 is still incompletely understood
- 3/10/2020-5/1/2020, NY-Pres, 27,377 SARS-CoV-2 molecular assays from 22,338 patients
 - Roche Cobas system and Cornell-NYP in-house molecular assay under FDA EUA
 - Repeat testing for 3,432 (15%) patients (2,413 had initial negative, 802 initial positive)
- Repeat-tested patients were more likely to have severe disease and low viral loads
 - Positive patients more likely to be male, >44 years, African-American or Hispanic/Latino ($p < 0.0001$)
 - Patients with positive PCR had higher mortality (6.2% vs. 3.8%, 159 $p = 0.048$), presence of symptoms (91.8% vs. 72.4%, $p = 0.004$), need for intubation (10.7% vs. 7%, $p = 0.026$) and frequency of decompensation (13.4% vs. 8.4%, $p = 0.005$)
 - **NPV** of the first day result among repeat-tested patients was **81.3%**
- Clinical sensitivity of SARS-CoV-2 molecular assays was estimated between 58% and 96%
- Conversion from (+) to (-) was unlikely to occur before 15-20 days after initial testing or 20-30 days after onset of symptoms, with **50% conversion occurring at 28 days after initial testing**
- Conversion from (-) to (+) increased linearly with each day of testing, reaching **25% in 20 days**
- 60 patients fluctuated between positive and negative results over several weeks
- Suggests time frame for appropriate repeat testing is **15-20 days after a positive test** and the **same or next 2 days after a negative test** in patients with high suspicion for COVID-19

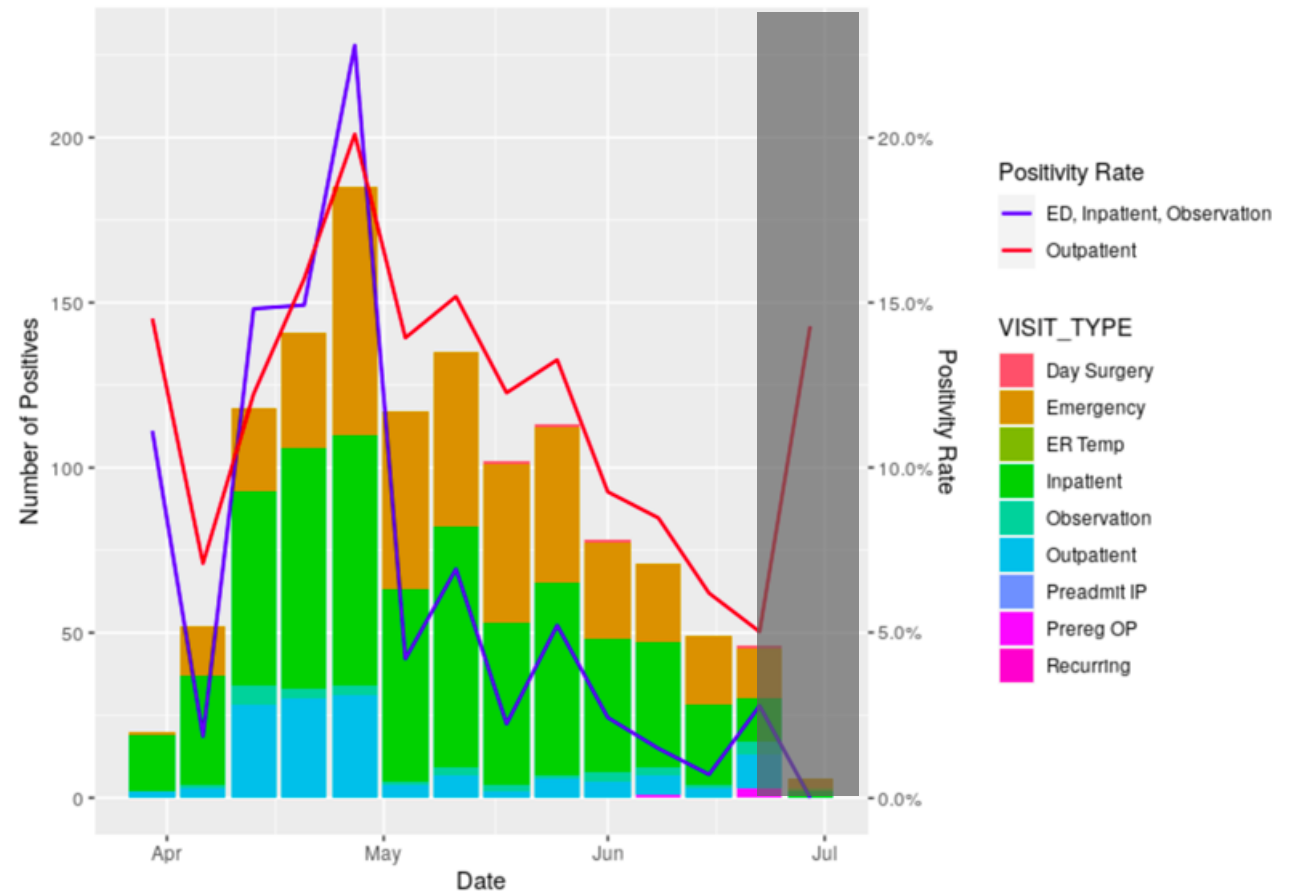


GW Updates



Welcome Dr. Jorge Sepulveda!

- Clinical Pathology and Transfusion Medicine
- Medical Director of Laboratory Informatics at Columbia University



GW Updates



- Number of COVID-19 patients ↓
- Healthcare Exposures study (Liu, Roberts)
 - SARS-CoV-2 Abs: 28/508 = 5.5%
- Biorepository study (Chang, Poon)
- Interventional studies (ID Team)
- Clinical Informatics studies (Ayanian)
- Outpatient study (Lypson)
- Testing (Public Health faculty)
- Interdisciplinary studies (Akselrod)

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COVID-19 Intelligence Report: Intelligence Reports

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Resources: Decision-Support Tools, Calculators, Treatment Algorithms Special Features and Spotlights

GW Health: COVID-19 Updates

- Novel Coronavirus COVID-19 Research Guide
- Library resources, news, and other trusted resources for health care providers and public health professionals about COVID-19.
- COVID-19: GW Health Updates
- GW Infectious Disease Updates

Daily digest of news alerts from GW SMHS, MFA, and GW Hospital for providers and staff

Weekly update from GW Hospital Infectious disease by Dr. Hana Akselrod.

Intelligence Reports

June 29, 2020

GW COVID-19 Intelligence Report June 29, 2020

Epidemiology:

- [Multiple states set single-day records](#) as case counts and positivity rates increase:
 - Florida breaks single-day record for third day in a row
 - In Arizona, health officials also reported a record, with 2,577 current hospitalizations.
 - Texas set a record for coronavirus-related hospitalizations for the 16th day in a row on Saturday, with 5,523 patients being treated. Following a record single-day increase of COVID-19 cases in the state, TX Gov. Greg Abbott has [paused further phases of the state's reopening plan and halted elective surgeries in four counties](#).

Updates for the District of Columbia:

- As of June 28th, the District's overall [positive case total](#) was 10,248 with 550 deaths.
 - DC's positivity rate has risen from low of 2% on 6/12 to 4.4% on 6/20. However, this may be a reflection of the drop in number of residents tested: 3498 on 6/12 down to only 745 on 6/20.
 - [Hospital occupancy is 28% in DC](#); the proportion of occupancy due to COVID-19 continues to decrease (126 of 1,944 total) and ventilator utilization remains below 50%.
- [Sharp increases in cases in the Latino community](#): 42.6% of Latinos in the Baltimore-DC metro area who were tested for SARS-CoV-2 were positive- a much higher proportion than for any other racial/ethnic group possibly reflecting higher exposure rates and/or barriers to testing.

Treatment:

- [Tocilizumab](#)
 - A [retrospective case-control study](#) of patients with severe COVID-19 found a non-statistically significant lower mortality in the treatment group (52% versus 62.1%, P = 0.09). When excluding intubated patients, there was statistically significant lower mortality in patients treated with tocilizumab (6% vs. 27%, P = 0.024).
 - A 21-day observational [study published in CHEST](#) found that in tocilizumab-treated patients, oxygenation and inflammatory biomarkers (hsCRP and IL-6) improved. However, sIL-2R and D-Dimer levels increased. Survival of severe patients treated with tocilizumab was similar to non-severe patients. (83% vs 91%, p=0.11).
 - A [retrospective, observational cohort study](#) found that in patients with severe COVID-19

Intelligence Unit Research Briefs

- [Use and Efficacy of Nitric Oxide for treatment of Covid-19 patients](#)
June 11, 2020
Lawrence Deyton, Laura Abate
- [Current Status of Serologic Testing for COVID-19](#)
May 27, 2020
Hana Akselrod (GW MFA Infectious Disease), Laura Abate (Himmelfarb Library)
- [PPE for Endotracheal Intubation](#)
May 11, 2020
Jalli Ahari (Pulmonology, Critical Care and Sleep Medicine), Laura Abate (Himmelfarb Library)
- [Hypercoagulable state in patients with Covid-19 disease](#)
April 14, 2020
Dhiviya Tharmaratnam (Geriatrics), Laura Abate (Himmelfarb Library), Jeff Williams (Anesthesiology), Jalli Ahari (Pulmonology, Critical Care and Sleep Medicine) and Lawrence Deyton (Clinical Public Health)
- [The Uses of Beta Agonists for](#)

GW Update



The Fourth of July can be a virus reset. Here's exactly what we need to do.



Niko Stilianoudakis and Allee McCardle, on vacation from West Virginia, walk to the beach in Myrtle Beach, S.C., on June 30. (Brett Lemmo/For The Washington Post)

“I don't think people will comply with another shelter-in-place order, but they might be willing to modify how they socialize.”



Leana S. Wen, MD, MSc

*Visiting Professor; Distinguished Fellow at the Fitzhugh Mullan
Institute of Health Workforce Equity*

Happy 4th!



Hamilton Mask-up Parody Medley - YouTube

YouTube · The Holderness Family