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GW COVID-19 Intelligence Reports

GW Covid-19 Collection

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### GW Covid-19 Intelligence Reports: January 25, 2021

George Washington University

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## Epidemiology

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- COVID morbidity and mortality disproportionate falls on those who are of racial/ethnic minorities for both obvious and entirely preventable reasons. A new [study](#) has pushed further analyses, identifying the social determinates of poverty, incomplete high-school, and veterans as additional risk factors.
- Prioritizing COVID-19 took attention away from more standard hospital infection control practices, driving an [uptick](#) in multi-drug resistant and device-associate infections.
- Regarding [healthcare workers](#) in New Jersey, phlebotomists, environmental services, and food services, were at highest risk for COVID infection, not doctors or nurses.
- January 22 data show DC Hospitals are at [87% ICU capacity](#). Hospitals are [at 86% capacity](#).

## The New Variants

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- There are currently at least 3 new strains, the [UK, South African and Brazilian Variants](#). Most [experts believe](#) that antigenic drift in the spike protein should still be neutralized by vaccines and antibodies. However, researchers in [South Africa](#) and [Brazil](#) are more concerned.

## Testing

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- Home specimen collection [tests](#) trickle out. Labcorp and Quest both have versions of at home collection kits. Patients can go to LabCorp's website and fill out a form for the Pixel Home Test. It's a nasal PCR that comes with a pre-packaged FedEx return envelope. Turn-around time limiting factor: shipping.
- PCR positivity peaks within the [first 3 days](#) of **symptom onset**. By day 7, only 19.3% of patients had positive IgM titers while 44% were IgG positive. By week 4, 93% of positive patients had IgG positivity. While IgM titers may be more associated with severity, IgG titers might be a better indicator for infection (due to a likely window period). 27% of patients were still PCR positive at 4 weeks.
- A [study](#) of quarantined college athletes found that test positivity peaks at 5 days following **exposure**. At 5 days, 27 % of exposures tested positive, decreasing to <5% after day 10. Practically, this may lend credence to exposure testing on day 5, and support a shorter, 10 day quarantine.
- Nasal v salivary swabs. In a large [meta-analysis](#), Nasal swabs showed 1.5-7.9% greater sensitivity.
- The presence of certain auto-immune diseases, especially [RA and SLE](#), may cause false positives in serological COVID testing.
- A [meta-analysis](#) indicates elevated procalcitonin, LDH, CRP, D-dimer, [tPa levels](#), and decreased albumin are all indicators of disease severity. While thresholds are yet to be determined, these markers may prove useful for disposition.

## Pediatrics

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- [Hospitalization rates among children](#) are increasing. Of note, its seems like the states with the most laissez-faire approaches to public health are seeing the highest spikes in pediatric admissions.

## Therapeutics

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- The [NHS](#) has put out an interim recommendation based on [research](#) from an ongoing international, multifactorial, adaptive platform trial: ICU patients treated with IL-6 inhibitors plus corticosteroids and remdesivir, saw a 24% reduction in fatality, and 7 fewer ventilator days.
- Anakinra, the IL-1 inhibitor shows [promise](#) for mortality reduction, in very small studies.
- In the perpetual debate on coagulopathy, this Danish nation-wide population-based [study](#) suggests COVID patients are not actually at increased risk for VTE or bleeding, compared to other hospitalized patients.

- Despite the 6mg of dexamethasone per day, recommended by the RECOVERY Trial - timing, dosing, and efficacy are still being [debated](#).
- The [Montreal](#) Heart Institute is releasing preliminary [results](#) of a double-blind prospective cohort [study](#) of 4000 patients, suggesting that colchicine may reduce the risk of hospitalization by 25% and fatality by 44%. These findings could be important but must be viewed as preliminary since the study has not been published in a peer reviewed journal.

### **The Biden Plan – This may affect GW’s roll-out**

18 million shots given, and 36 million doses have been [distributed](#). The [Biden Administration](#) has proposed:

- \$20 billion for increased vaccination efforts, including 100 FEMA-ran vaccine centers, expanded community vaccine centers including in schools & stadiums, 100,000 more public health workers, and advertisements.
- \$50 billion for increased testing,
- \$40 billion more for supplies including syringes and PPE.
- Defense Production Act to ensure supply-chain adequacy.
- While phase 1 includes nursing home population and healthcare workers, Biden proposes phase 2 to include everyone >65 and essential workers including teachers and grocers.
- This will be led by [Dr David Kessler](#), pediatrician and ex-FDA commissioner.

Given the slow roll out, many, including the Biden administration have advocated for [releasing all available doses](#). The data: At 2 weeks, a single Pfizer dose is somewhere between [50-82%](#) effective. At 4 weeks, a single Moderna dose was up to 80.2% effective. The assumption: Our vaccine supply chain is adequate, and there’s no obvious reason to expect disruptions. The calculus: A delayed second dose (even up to 12 weeks) should still have the boosting effect on immunity, and with scaling manufacturing, we may not even be delayed. Some propose that good efficacy for more people now is better than amazing efficacy later. This approach has been [recommended](#) by the NHS’s advisory panel. This is by no means settled.

### **Vaccines – the old and the new**

- DC has moved into the next stage of vaccine [distribution](#) – adults > 65 targeting vulnerable zip codes first. Likewise [MD](#) and [VA](#) have their own strategies. Patients can sign up online.
- Only 29 cases of anaphylaxis have been [reported](#) for the Pfizer and Moderna Vaccines, at a rate of 5.5/1mill people. Mostly in people with pre-existing severe allergies. By comparison, 6.6/1 million people die from covid, daily (2000/day).
- The Oxford vaccine (previously known as AstraZenica, but all the bench work was actually done by academics), has some yet-to-be-explained paradoxical results. Early analysis suggests that a half-dose followed by a full-dose booster was 90% effective in preventing COVID-19, while 2 full doses were only 62% effective. While acknowledging the need for investigation, an interim [analysis](#) estimates 70% efficacy after 2 doses. The advantage is that super cold chain is not required.
- Johnson & Johnson/HHS is in phase 3 of a single-dose [vaccine](#) that can survive for 3 months at 2-8° showing 90% efficacy by day 29.
- We are currently injecting ~900,000 doses of vaccine per day. There are 260,000,000 eligible adults (requiring ~520,000,000 doses, children aren’t approved yet). That math is not encouraging, but supply is [increasing](#) every week. Pfizer and Moderna combined have promised 400 million doses by summer. If [Oxford](#), and [Johnson & Johnson](#), and [Novovax](#) are approved, outlooks improve (there are still some 17 vaccines in stage 2 trials). Accordingly, [projections](#) range from normalcy this spring (multiple vaccines approved, supply continues to increase, vaccine trucks aren’t being hijacked), to early [2022](#) (supply does not increase, no other vaccines are approved, SSRI’s sell out).

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This edition of the COVID-19 Intelligence Report was produced by Dr. Luis W. Dominguez with support from the Himmelfarb Librarian team and the entire GW Intelligence Unit led by Dr. Lawrence “Bopper” Deyton.

Feedback and any special requests should go to: [ldeyton@gwu.edu](mailto:ldeyton@gwu.edu).

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