

7-16-2020

Covid-19 Clinical Update 7/16/2020

George Washington University

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1. EPIDEMIOLOGY

2. TRANSMISSION

3. PATHOPHYSIOLOGY

4. TREATMENT

5. GW UPDATES

COVID-19 UPDATE

HANA AKSELROD, MD, MPH

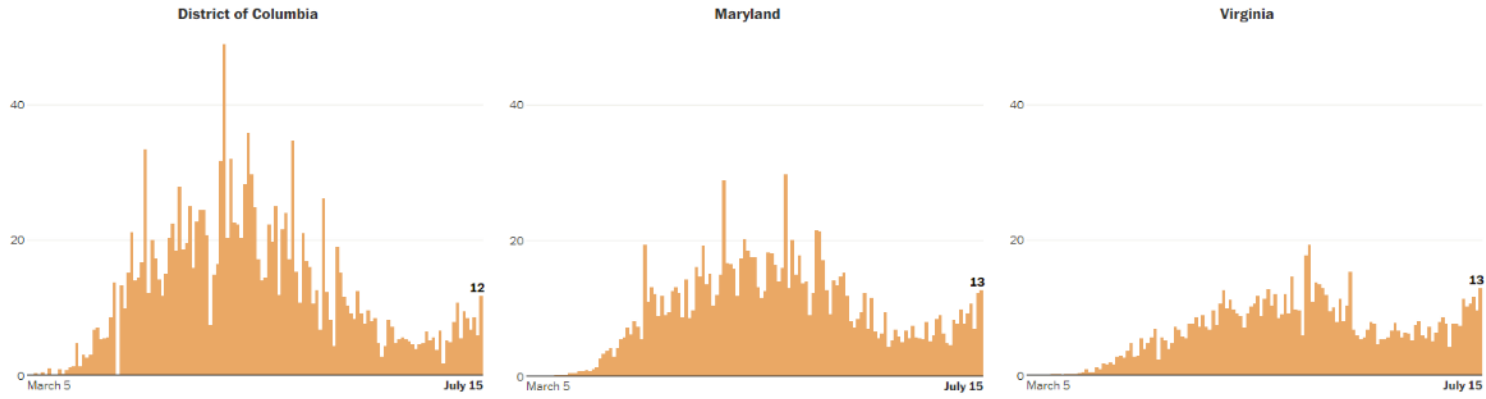
GW DIVISION OF INFECTIOUS DISEASES

7/16/2020



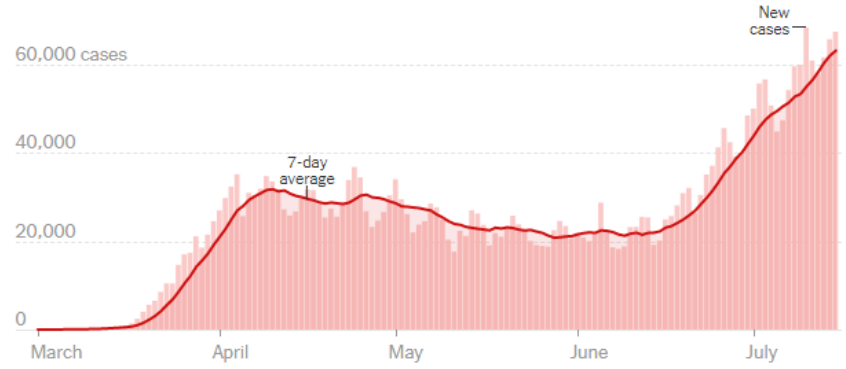
Deaths Cases Daily counts Cumulative Adjusted for population Raw numbers

New daily cases per 100,000 residents



The District did not release new case numbers on March 31 as part of a change in how it reports the data.

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.

DC Reopening Tracker

The District of Columbia is closely monitoring key public health signs to guide reopening the District in a way that is safe, measured, data-driven, and sustainable.

The string of signs to remove or reevaluate social (physical), distancing and other policies to slow the spread of COVID-19 will be determined in part by the reopening metrics shown here.

All metrics are subject to change based on existing outbreak and data considerations.

Phase 2 Reopening Metrics		
Thresholds needed to reach Phase 3		
Data updated through: July 14, 2020		
Not Achieved	Sustained decrease in cases in the community	3 out of 14 days
Achieved	Ability to contact trace new cases	100.0% out of 90%
Achieved	Sustained low positivity rate	Below 10% for over 7 days
Not Achieved	Sustained low transmission rate	Below 1 for 0 out of 5 days
Achieved	Utilization of hospital beds	Below 80% over 14 days
Achieved	Ability to contact trace close contacts	96.7% out of 90%
Coming Soon	Percentage of new cases from quarantined contacts	Coming Soon

JUL 15, 11:27 AM

Only 6% Of People Tested In D.C. Have Coronavirus Antibodies

Kaitika Cardosa



Antibody testing involves a finger prick.

WHAT'S WASHINGTON

Test your D.C. for the comfort of

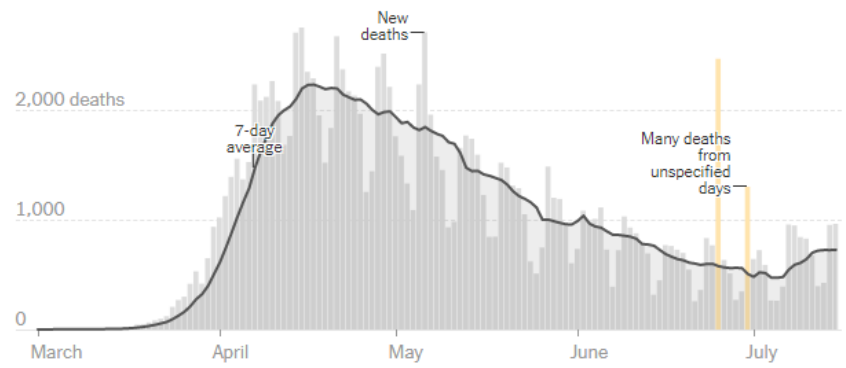
July 31 | 7:50 pm

TRENDING

JUL 15, 5:24 PM
D.C. Public Schools To Reopen With Virtual And Person Classes This Fall

JUL 15, 1:34 PM
D.C., Maryland, Virginia Report Highest Coronavirus Case Rates Since Early Six

New reported deaths by day in the United States



These are days with a data reporting anomaly. Read more [here](#).

Data as of
Tuesday, 07/14/20

3,408,994

Confirmed Cases

19 cases per 100k people (7 day moving average)

135,393 Deaths

Geolocation

Worldwide

United States

Clear State Selection

Search

Alabama

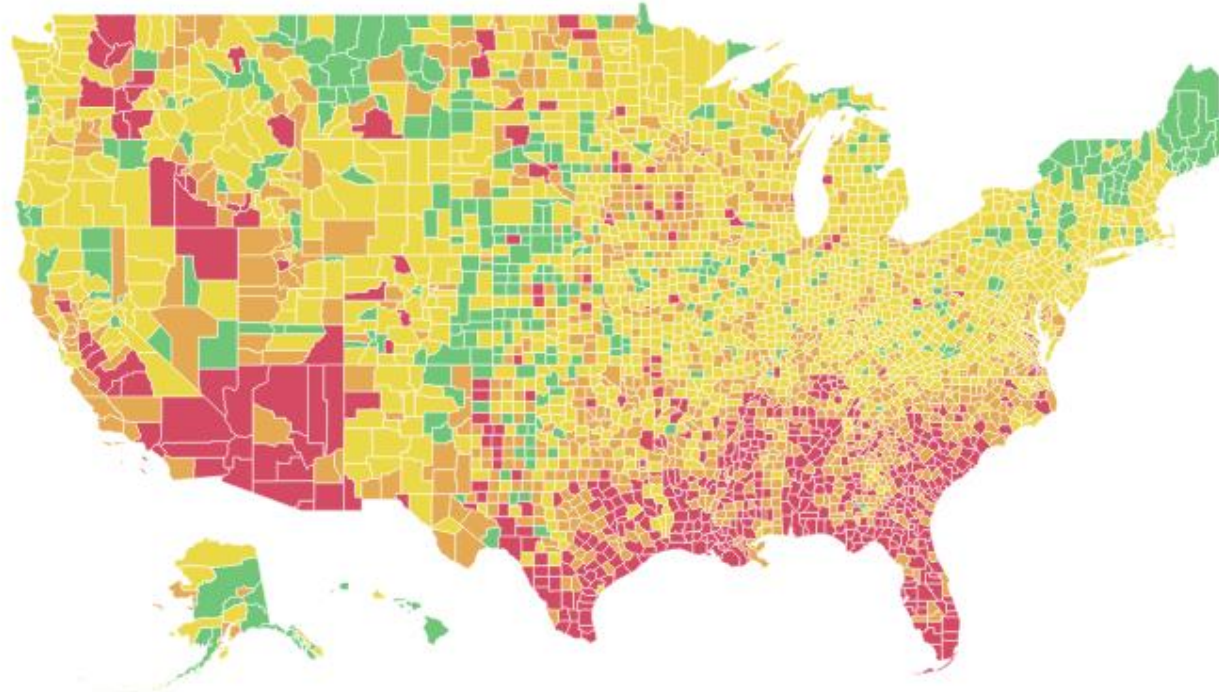
Risk Levels

COVID-19 Risk Levels • United States

Risk Level by State/County

This map displays COVID Risk Levels for each county in the United States. Hover over a county for detailed information on cases and deaths counts. Risk Levels are calculated based on daily cases per 100,000 population (7 day rolling average).

[Learn more](#)



Risk Levels: ■ Green ■ Yellow ■ Orange ■ Red

Color Blind Version



Map

Tabular

States

Counties

State/County

Daily new cases per 100k people (7d moving avg.)

<input type="checkbox"/> Florida	51.8
<input type="checkbox"/> Arizona	45.1
<input type="checkbox"/> Louisiana	42.4
<input type="checkbox"/> South Carolina	36.1
<input type="checkbox"/> Alabama	33.4
<input type="checkbox"/> Texas	31.8
<input type="checkbox"/> Georgia	30.7
<input type="checkbox"/> Nevada	27.1
<input type="checkbox"/> Tennessee	26.4
<input type="checkbox"/> Mississippi	25.6
<input type="checkbox"/> Idaho	25.4
<input type="checkbox"/> Arkansas	24.7
<input type="checkbox"/> California	22.2
<input type="checkbox"/> Utah	20.4
<input type="checkbox"/> North Carolina	18.5
<input type="checkbox"/> Iowa	17.7
<input type="checkbox"/> Oklahoma	16.3
<input type="checkbox"/> Kansas	15.8
<input type="checkbox"/> Wisconsin	13.1
<input type="checkbox"/> North Dakota	10.0

COVID RISK LEVEL: GREEN

LESS THAN ONE CASE PER 100,000 PEOPLE

ON TRACK FOR CONTAINMENT

MONITOR WITH VIRAL TESTING AND CONTACT TRACING PROGRAM

#THEPATHTOZERO

COVID RISK LEVEL: YELLOW

1-9 CASES PER 100,000 PEOPLE

COMMUNITY SPREAD

RIGOROUS TEST AND TRACE PROGRAMS ADVISED

#THEPATHTOZERO

COVID RISK LEVEL: ORANGE

10-24 CASES PER 100,000 PEOPLE

ACCELERATED SPREAD

STAY-AT-HOME ORDERS AND/OR RIGOROUS TEST AND TRACE PROGRAMS ADVISED

#THEPATHTOZERO

COVID RISK LEVEL: RED

25+ CASES PER 100,000 PEOPLE

TIPPING POINT

STAY-AT-HOME ORDERS NECESSARY

#THEPATHTOZERO

- Illinois
- Indiana
- Iowa
- Kansas



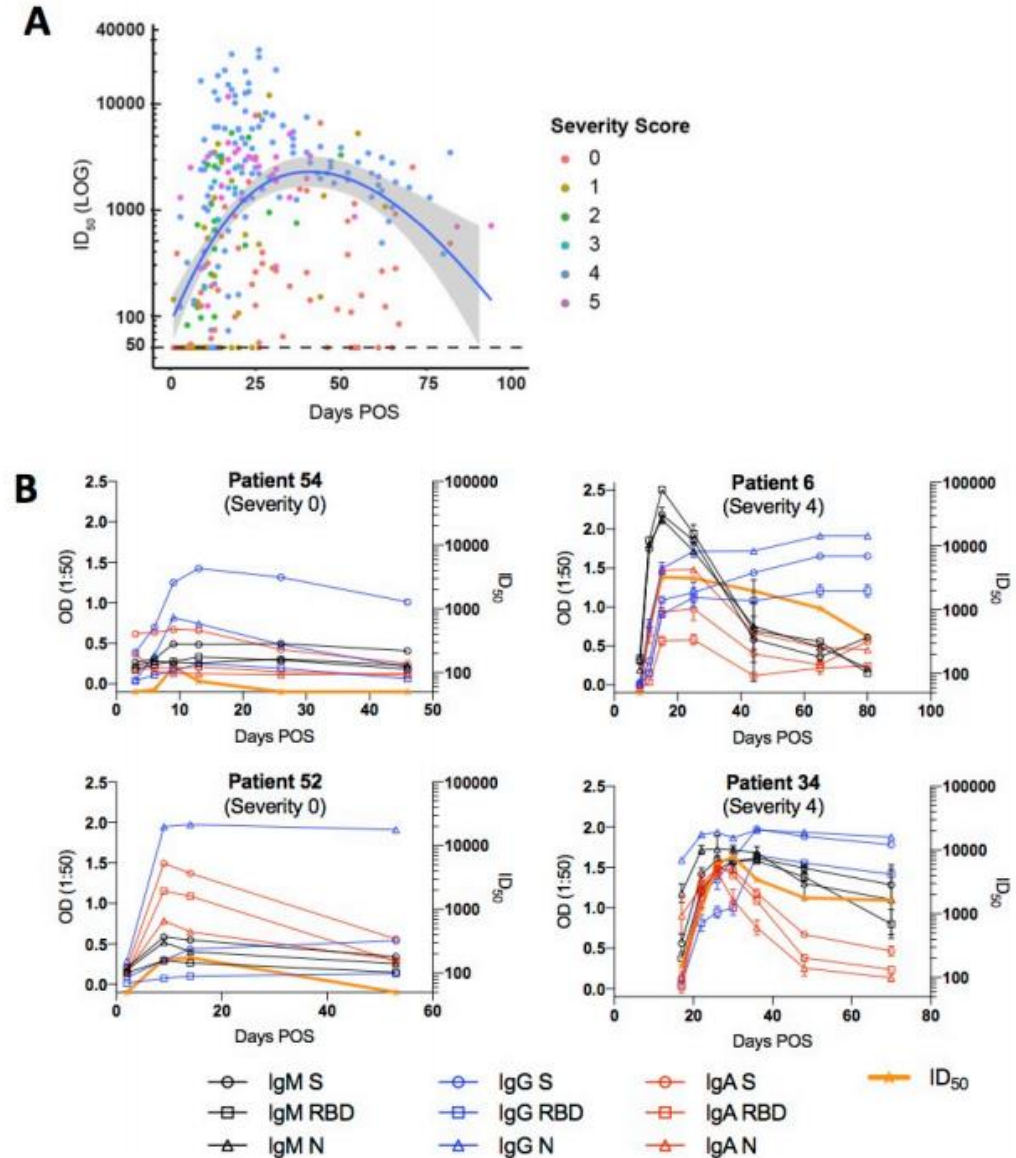
Microsoft AI for Health

Source: WHO, USAFacts, OWID & Bing COVID Tracker

Contact: AIforHealth_C19@microsoft.com

Longitudinal evaluation and decline of antibody responses in SARS-CoV-2 infection

- Sequential serum samples from 65 RT-qPCR confirmed pts
- Neutralizing antibody (nAb) response detected in >95% of cases
- Magnitude of the nAb response was dependent upon the disease severity, but this did not affect the kinetics of the nAb response
- Declining nAb titers observed during the follow up period
- Whilst some individuals with high peak ID₅₀ (>10,000) maintained titres >1,000 at >60 days POS, some with lower peak ID₅₀ had titres approaching baseline within the follow up period
- Similar decline in nAb titres was also observed in a cohort of seropositive healthcare workers from Guy's and St Thomas' Hospitals
- Transient nAb response is a feature shared by both a SARS-CoV-2 infection that causes low disease severity and the circulating seasonal coronaviruses that are associated with common colds



CDC investigating possible re-infections

Have you or any clinician you know identified a patient with a recurrent case of confirmed COVID-19 who meets the following criteria:

1. Recovery from an initial episode of confirmed COVID-19, defined as at least 3 days have passed with no fever (without antipyretics) and improvement in symptoms and at least 10 days have passed since symptom onset or diagnosis (if asymptomatic). AND
2. Recurrence of symptoms with a positive SARS-CoV-2 RT-PCR test result at least 10 days after recovery from the initial episode of COVID-19.

If so, please use this link to enter a case description:

<https://ein.idsociety.org/surveys/survey/125/>





An mRNA Vaccine against SARS-CoV-2 — Preliminary Report

Lisa A. Jackson, M.D., M.P.H., Evan J. Anderson, M.D., Nadine G. Rouphael, M.D., Paul C. Roberts, Ph.D., Mamodikoe Makhene, M.D., M.P.H., Rhea N. Coler, Ph.D., Michele P. McCullough, M.P.H., James D. Chappell, M.D., Ph.D., Mark R. Denison, M.D., Laura J. Stevens, M.S., Andrea J. Pruijssers, Ph.D., Adrian McDermott, Ph.D., *et al.*, for the mRNA-1273 Study Group*

- Phase 1, dose-escalation, open-label trial including 45 healthy adults, 18 to 55 years of age, who received two vaccinations, 28 days apart, with mRNA-1273 in a dose of 25 μg , 100 μg , or 250 μg . There were 15 participants in each dose group.
- After the first vaccination, antibody responses were higher with higher dose (day 29 enzyme-linked immunosorbent assay anti-S-2P antibody geometric mean titer [GMT], 40,227 in the 25- μg group, 109,209 in the 100- μg group, and 213,526 in the 250- μg group).
- After the second vaccination, the titers increased (day 57 GMT, 299,751, 782,719, and 1,192,154, respectively).
- After the second vaccination, serum-neutralizing activity was detected by two methods in all participants evaluated, with values generally similar to those in the upper half of the distribution of a panel of control convalescent serum specimens.
- Solicited adverse events that occurred in more than half the participants included fatigue, chills, headache, myalgia, and pain at the injection site.
- Systemic adverse events were more common after the second vaccination, particularly with the highest dose, and three participants (21%) in the 250- μg dose group reported one or more severe adverse events.

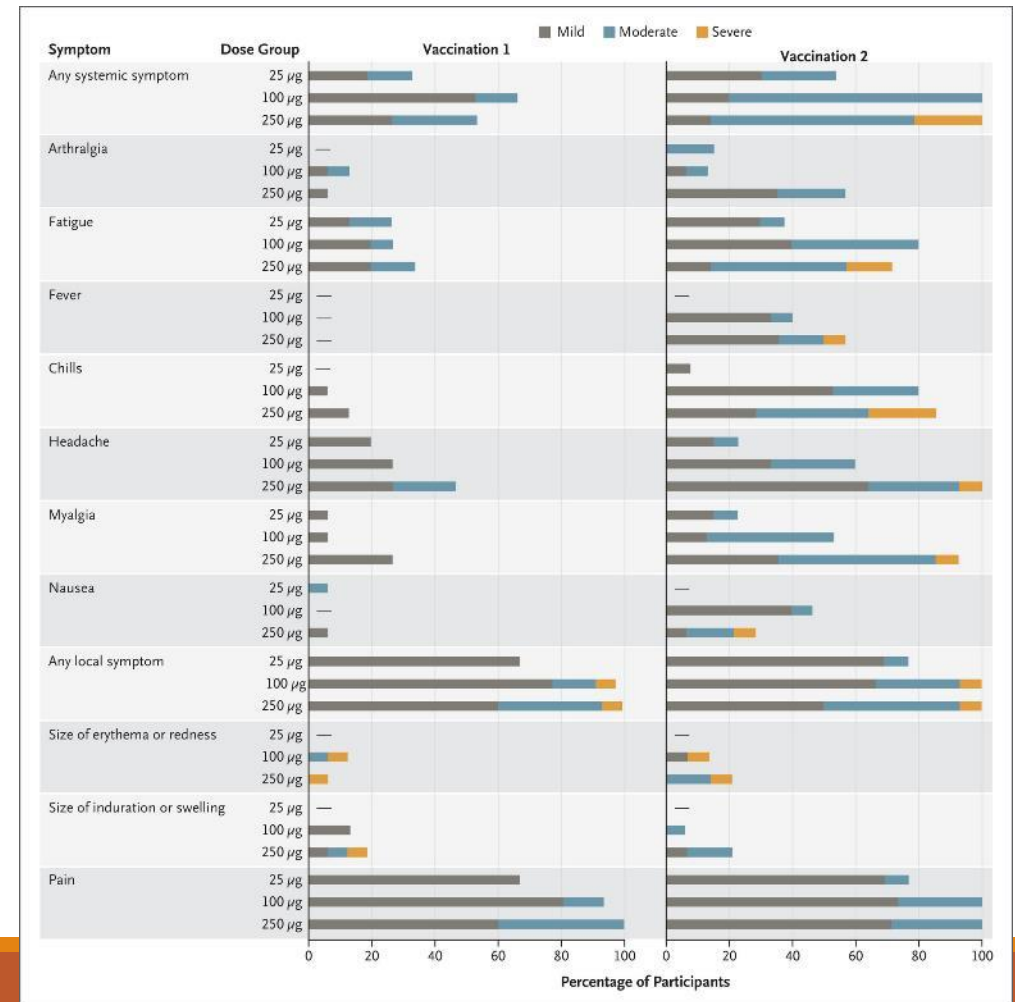


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Table 1. Characteristics of the Participants in the mRNA-1273 Trial at Enrollment.*

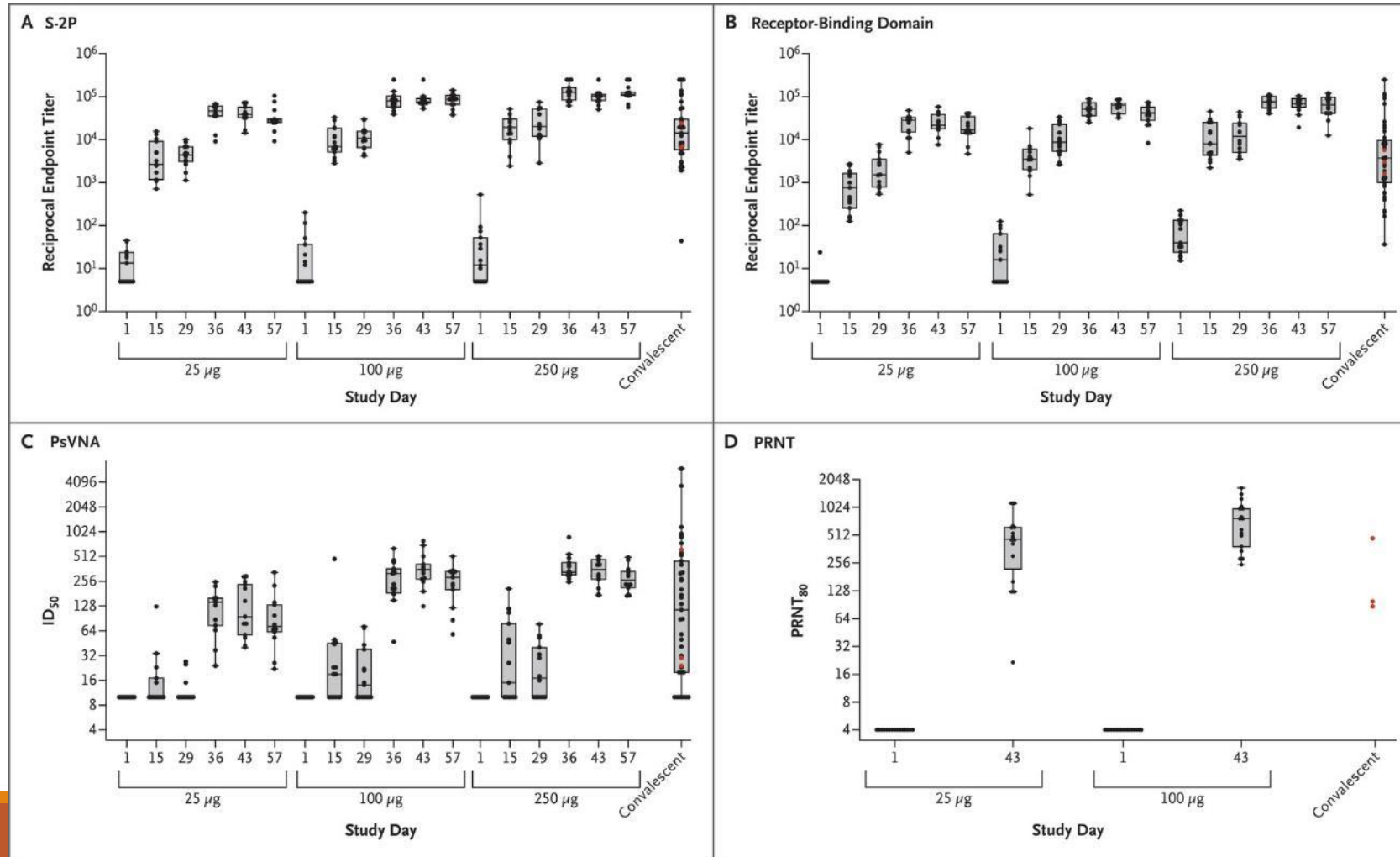
Characteristic	25- μ g Group (N=15)	100- μ g Group (N=15)	250- μ g Group (N=15)	Overall (N=45)
Sex — no. (%)				
Male	9 (60)	7 (47)	6 (40)	22 (49)
Female	6 (40)	8 (53)	9 (60)	23 (51)
Age — yr	36.7 \pm 7.9	31.3 \pm 8.7	31.0 \pm 8.0	33.0 \pm 8.5
Race or ethnic group — no. (%) [†]				
American Indian or Alaska Native	0	1 (7)	0	1 (2)
Asian	0	0	1 (7)	1 (2)
Black	0	2 (13)	0	2 (4)
White	15 (100)	11 (73)	14 (93)	40 (89)
Unknown	0	1 (7)	0	1 (2)
Hispanic or Latino — no. (%)	1 (7)	3 (20)	2 (13) [‡]	6 (13)
Body-mass index [§]	24.6 \pm 3.4	26.7 \pm 2.6	24.7 \pm 3.1	25.3 \pm 3.2





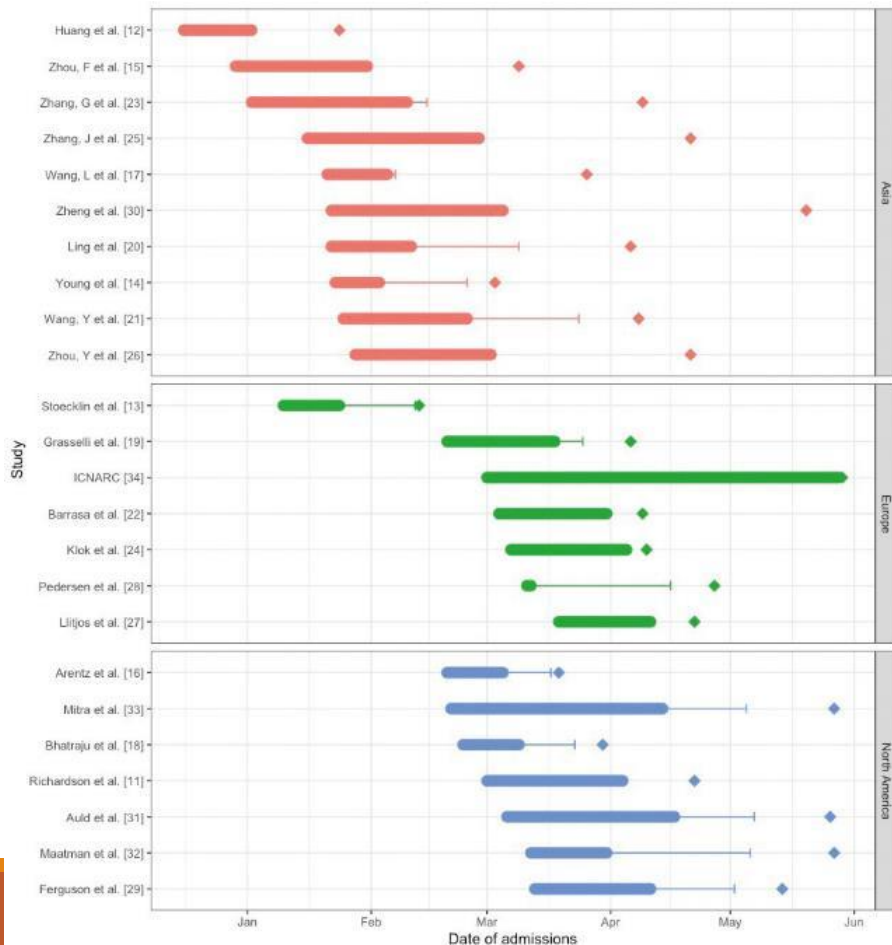
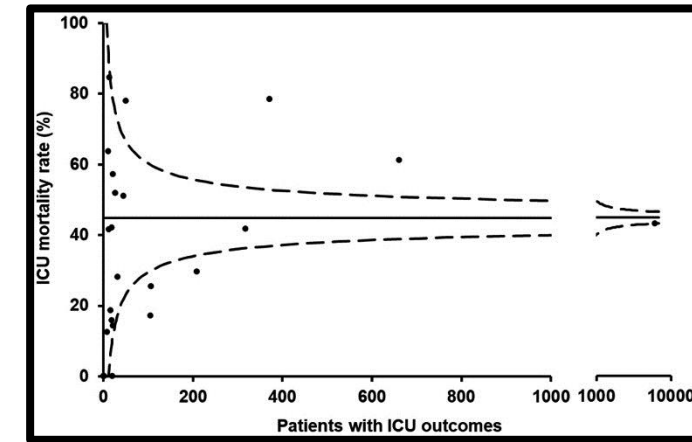
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Outcomes from intensive care in patients with COVID-19: a systematic review and meta-analysis of observational studies

R. A. Armstrong, A. D. Kane, T. M. Cook 



Study	Deaths All Patients	Deaths per 100 admissions
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Asia

Huang et al	5	12
Young et al	0	2
Zhou, F et al	39	50
Wang, L et al	0	1
Ling et al	1	8
Wang, Y et al	133	318
Zhang, G et al	9	32
Zhang, J et al	8	19
Zhou, Y et al	3	16
Zheng et al	0	20

Random effects model

Heterogeneity: $I^2 = 75%$, $\tau^2 = 0.5904$, $p < 0.01$

Europe

Stoecklin et al	0	1
Grasselli et al	405	661
Barrasa et al	14	27
Klok et al	23	45
Litjós et al	3	19
Pedersen et al	7	11
ICNARC	3483	8062

Random effects model

Heterogeneity: $I^2 = 93%$, $\tau^2 = 0.2409$, $p < 0.01$

North America

Arentz et al	11	13
Bhatraju et al	12	21
Richardson et al	291	371
Ferguson et al	3	21
Auld et al	62	209
Maatman et al	27	106
Mitra et al	18	105

Random effects model

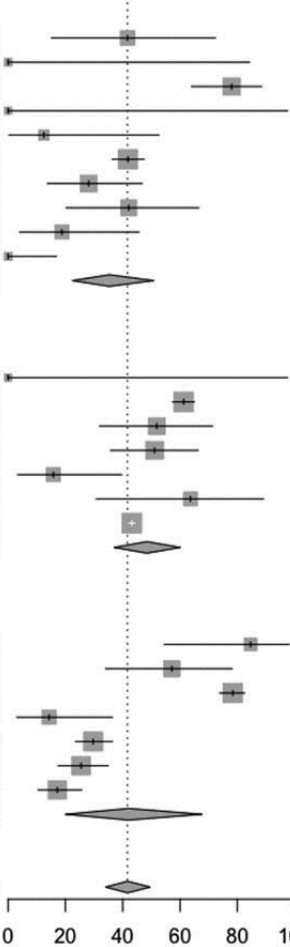
Heterogeneity: $I^2 = 97%$, $\tau^2 = 1.9030$, $p < 0.01$

Random effects model

Heterogeneity: $I^2 = 93%$, $\tau^2 = 0.4083$, $p < 0.01$

Residual heterogeneity: $I^2 = 94%$, $p < 0.01$

10150



41.67 [15.17-72.33]

0.00 [0.00-84.19]

78.00 [64.04-88.47]

0.00 [0.00-97.50]

12.50 [0.32-52.65]

41.82 [36.34-47.46]

28.12 [13.75-46.75]

42.11 [20.25-66.50]

18.75 [4.05-45.65]

0.00 [0.00-16.84]

35.31 [22.32-50.92]

0.00 [0.00-97.50]

61.27 [57.44-65.00]

51.85 [31.95-71.33]

51.11 [35.77-66.30]

15.79 [3.38-39.58]

63.64 [30.79-89.07]

43.20 [42.12-44.29]

48.44 [36.96-60.09]

84.62 [54.55-98.08]

57.14 [34.02-78.18]

78.44 [73.90-82.51]

14.29 [3.05-36.34]

29.67 [23.56-36.36]

25.47 [17.51-34.86]

17.14 [10.49-25.73]

42.02 [19.96-67.81]

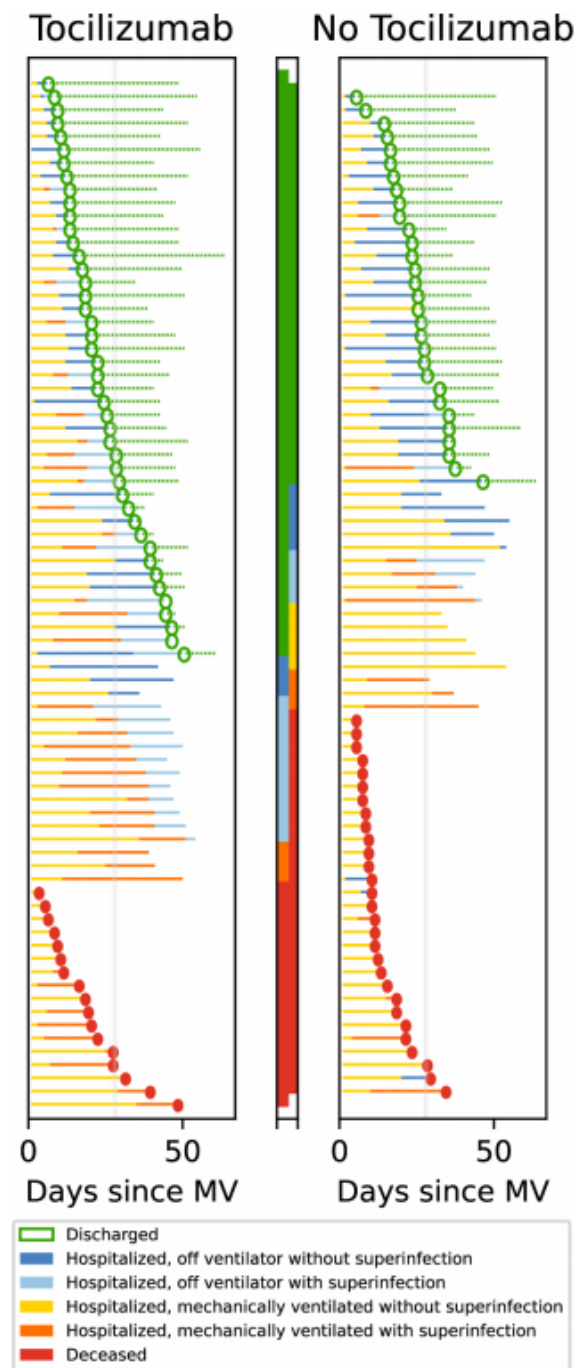
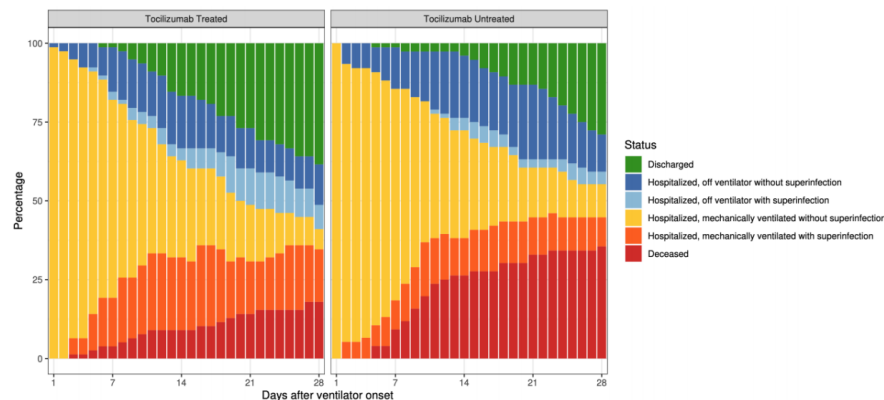
41.65 [34.01-49.70]

Tocilizumab for treatment of mechanically ventilated patients with COVID-19

Emily C Somers, PhD ScM ✉, Gregory A Eschenauer, PharmD, Jonathan P Troost, PhD, Jonathan L Golob, MD PhD, Tejal N Gandhi, MD, Lu Wang, PhD, Nina Zhou, MS, Lindsay A Petty, MD, Ji Hoon Baang, MD, Nicholas O Dillman, PharmD ... Show more
 Author Notes

Clinical Infectious Diseases, ciaa954, <https://doi.org/10.1093/cid/ciaa954>

Published: 11 July 2020 Article history ▼



- Observational study, 154 patients of whom 78 received tocilizumab
- Median follow-up was 47 days (range 28-67)
- Tocilizumab-treated patients were younger (mean 55 vs. 60 years), less likely to have chronic pulmonary disease (10% vs. 28%), and had lower D-dimer values at time of intubation (median 2.4 vs. 6.5 mg/dL)
- Tocilizumab was associated with a 45% reduction in hazard of death [HR 0.55 (95% CI 0.33, 0.90)] and improved status on the ordinal outcome scale [OR 0.58 (0.36, 0.94)]
- Though tocilizumab was associated with an increased proportion of patients with superinfections (54% vs. 26%; $p < 0.001$), there was no difference in 28-day case fatality rate among tocilizumab-treated patients with versus without superinfection [22% vs. 15%; $p = 0.42$]. *Staphylococcus aureus* accounted for ~50% of bacterial pneumonia.

GW Updates



- Vaccine lecture by David Diemert:
<https://www.youtube.com/watch?v=VOEFVEimjls&feature=youtu.be>
- Universal masking remains in effect
- Please stay safe in your daily lives and office practices

