

4-16-2020

Covid-19 Clinical Update 4/16/2020

George Washington University

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Recommended Citation

George Washington University, "Covid-19 Clinical Update 4/16/2020" (2020). *GW Infectious Disease Updates*. Paper 6.

<https://hsrc.himmelfarb.gwu.edu/infectiousdiseaseupdates/6>

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COVID-19 UPDATE

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GW DIVISION OF INFECTIOUS DISEASES

4/16/2020

EPIDEMIIOLOGY

4/16/2020



Known coronavirus deaths and cases in D.C., Maryland and Virginia

There are a total of **683 deaths** and **18,765 cases** confirmed in the region.



By **Rebecca Tan, Fenit Nirappil, Kevin Uhrmacher, Gabriel Florit and Danielle Rindler**
Updated April 15 at 12:07 p.m.



DC Extends Stay-at-Home Order, School Closures Through May 15

NBC4 Washington
16 hours ago



WATCH: Washington, D.C. Mayor Muriel Bowser extends stay-at-home order through Ma...

PBS
17 hours ago

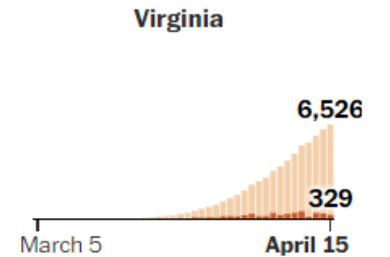
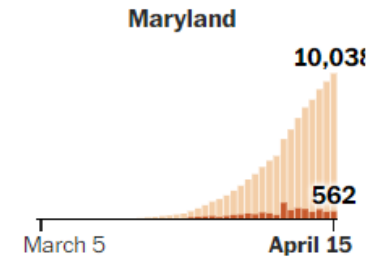
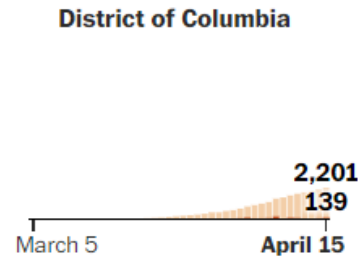
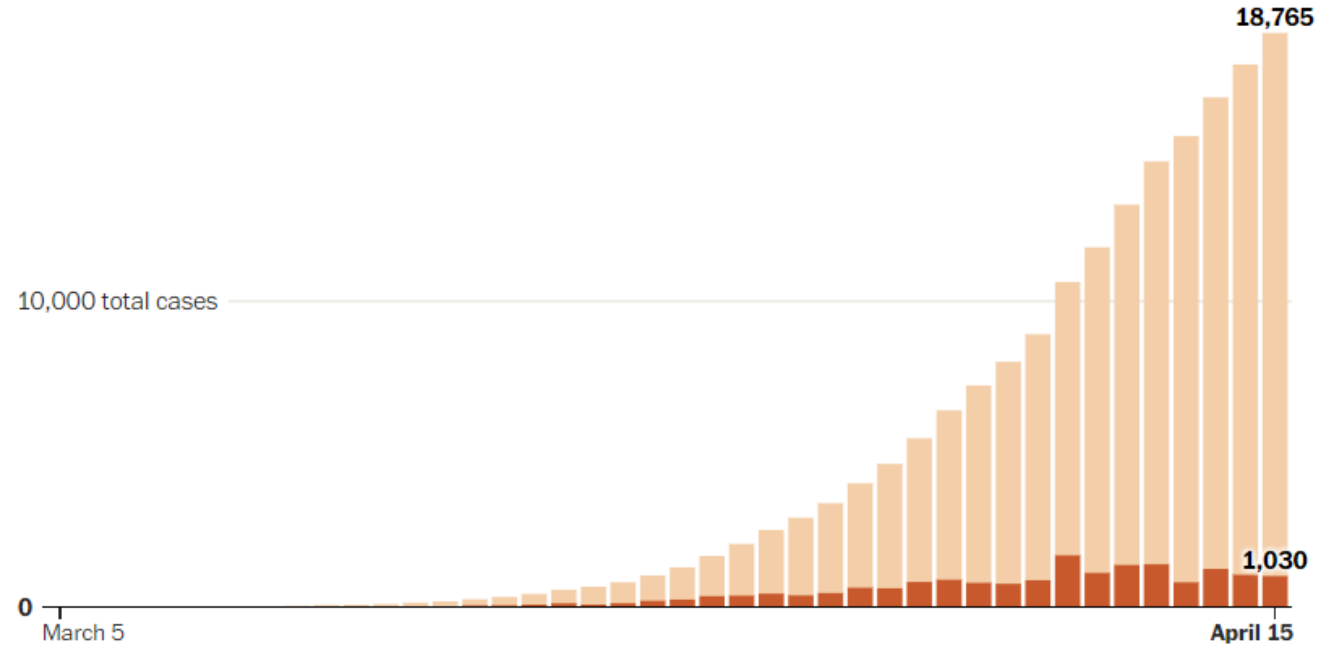


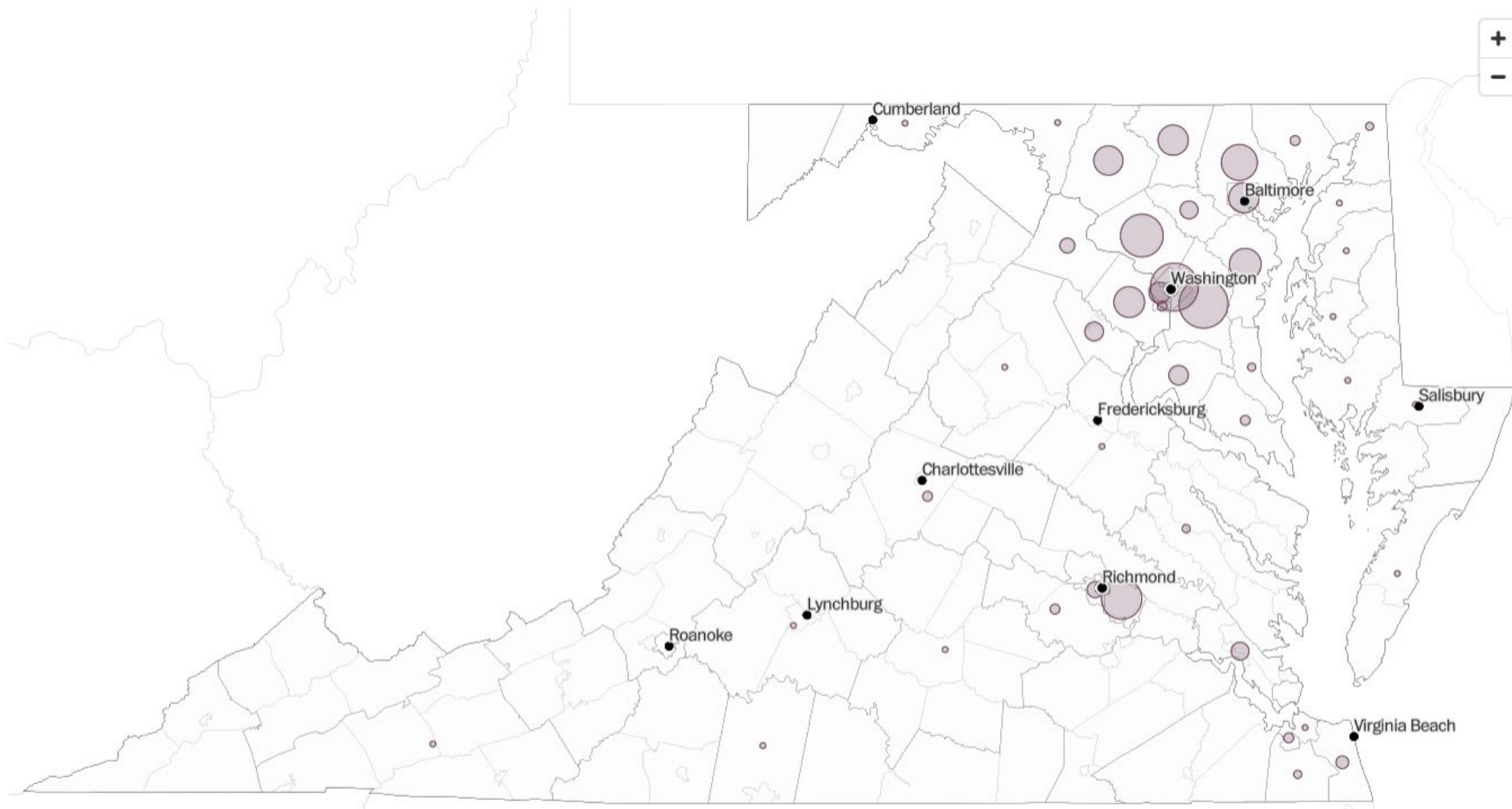
DC Mayor Bowser issues order to protect vulnerable populations in the District

WDVM
21 hours ago

Total cases reported in the District, Maryland and Virginia

■ New cases each day





PATHOPHYSIOLOGY

4/16/2020

Coagulopathy in Severe COVID-19

Pulmonary and Cardiac Pathology in Covid-19: The First Autopsy Series from New Orleans

Sharon E. Fox,^{1,2*} Aibek Akmatbekov,¹ Jack L. Harbert,¹ Guang Li,³ J. Quincy Brown,³
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- 1) Department of Pathology, LSU Health Sciences Center, New Orleans
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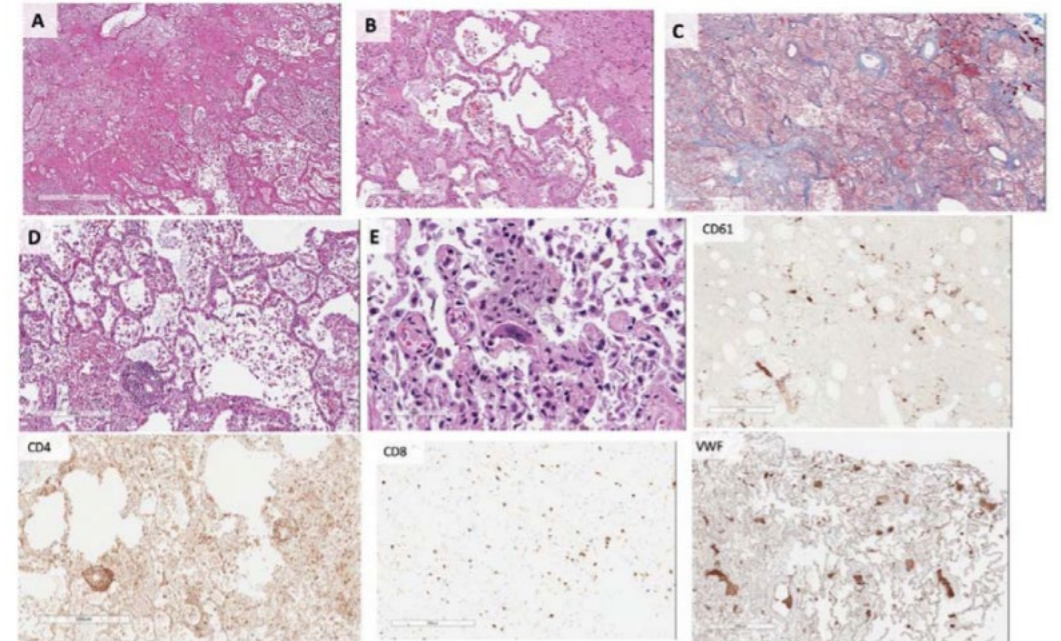


FIGURE 2: Pulmonary Microscopic Findings. All patients demonstrated extensive diffuse alveolar damage. **A)** Hyaline membranes and hemorrhage (H&E), with **B)** Fibrin thrombi present within distended small vessels and capillaries, and **C)** Extensive extracellular fibrin deposition highlighted in blue by Masson-Trichrome stain. **D)** Perivascular aggregations of lymphocytes, which were positive for CD4 immunostain, with only scattered CD8 positive cells present. **E)** Numerous megakaryocytes were present within the small vessels and alveolar capillaries, highlighted by CD61 and Von Willebrand Factor immunostains.

Anticoagulant treatment is associated with decreased mortality in severe coronavirus disease 2019 patients with coagulopathy

Ning Tang, Huan Bai, Xing Chen, Jiale Gong, Dengju Li, Ziyong Sun✉

First published: 27 March 2020 | <https://doi.org/10.1111/jth.14817>

- 449 patients with severe COVID-19, 99 on LMWH x 7 days
- 28-day mortality associated with
 - Higher D-dimer, prothrombin time and age
 - Lower platelet count
- No difference on 28-day mortality was found between heparin users and nonusers (30.3% vs 29.7%, $P=0.910$).
- 28-day mortality lower with heparin if:
 - SIC score ≥ 4 (40.0% vs 64.2%, $P=0.029$)
 - D-dimer $> 6 \times$ ULN (32.8% vs 52.4%, $P=0.017$).

Table 1 ISTH SIC scoring system

Item	Score	Range
Platelet count ($\times 10^9/L$)	1	100-150
	2	<100
PT -INR	1	1.2-1.4
	2	>1.4
SOFA score	1	1
	2	≥ 2
Total score for SIC	≥ 4	

INR, International Normalized Ratio; SOFA, sequential organ failure assessment.

TESTING: Dr. Sepulveda

4/16/2020

Co-Infection

Rates of Co-infection Between SARS-CoV-2 and Other Respiratory Pathogens

David Kim, MD, PhD¹; James Quinn, MD, MS¹; Benjamin Pinsky, MD, PhD²; [et al](#)

» [Author Affiliations](#) | [Article Information](#)

JAMA. Published online April 15, 2020. doi:10.1001/jama.2020.6266

- Northern California, March 3-25, 2020
- 1217 specimens tested from 1206 unique patients
 - 116/1217 (9.5%) samples tested positive for SARS-CoV-2
- Additional respiratory pathogen detected by PCR in
 - 294/1101 (26.7%) of non-SARS-CoV-1 samples
 - 24/116 (20.7%) of SARS-CoV-2-positive samples
- The most common co-infections were rhinovirus/enterovirus (6.9%), respiratory syncytial virus (5.2%), and non-SARS-CoV-2 Coronaviridae (4.3%)
- Influenza A (2.5%), influenza B (0.7%)
- No significant difference in age between groups (median 40s-50s)

TREATMENT

4/16/2020



Hydroxychloroquine

- 150 hospitalized patients in 16 hospitals in China
- Mild/moderate illness; only 2 with severe
- RCT; 75 received HCQ in addition to standard care
- Dosing: 1,200 mg Q24h x 3 days + 800 mg Q24h for 2-3 weeks
- Primary endpoint: clearance of SARS-CoV-2 by PCR at Day 28
- Clearance of SARS-CoV-2 did not significantly differ between control and intervention arm at days 4, 7, 10, 14, 21, and 28
- Subjective symptoms were alleviated earlier in HCQ arm (HR 8.83, 95% CI: 1.09-71.3)
- CRP was lower in HCQ arm (6.986 in SOC plus HCQ versus 2.723 milligram/liter, P=0.045)
- Adverse events: higher in HCQ (8.8% vs. 30%)
 - No serious cardiac events reported

Hydroxychloroquine in patients with COVID-19: an open-label, randomized, controlled trial

Wei Tang, Zhujun Cao, Mingfeng Han, Zhengyan Wang, Junwen Chen, Wenjin Sun, Yaojie Wu, Wei Xiao, Shengyong Liu, Erzhen Chen, Wei Chen, Xiongbiao Wang, Jiuyong Yang, Jun Lin, Qingxia Zhao, Youqin Yan, Zhibin Xie, Dan Li, Yaofeng Yang, Leshan Liu, Jieming Qu, Guang Ning, Guochao Shi, Qing Xie

doi: <https://doi.org/10.1101/2020.04.10.20060558>

This article is a preprint and has not been certified by peer review [what does this mean?]. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.

Chloroquine

- Study halted after 81 (target: 440) pts enrolled
- Dosing:
 - 600 mg BID x 10 days or total dose of 12 g
 - 450 mg BID x 1 day + Q24h x 4 days
 - All patients also received ceftriaxone + azithromycin
- High-dose arm presented more QTc>500ms (25%), and a trend toward higher lethality (17%) than the lower dosage
- Two cases of VT in high-dose arm, none in low-dose arm
- Fatality rate was 13.5% (95%CI: 6.9-23.0%), overlapping with the CI of historical data from similar patients not using CQ (95%CI: 14.5-19.2%)
- Only 1/14 patients with paired respiratory samples cleared virus at day 4

Chloroquine diphosphate in two different dosages as adjunctive therapy of hospitalized patients with severe respiratory syndrome in the context of coronavirus (SARS-CoV-2) infection: Preliminary safety results of a randomized, double-blinded, phase IIb clinical trial (CloroCovid-19 Study)

Mayla Borba, Fernando de Almeida Val, Vanderson Sousa Sampaio, Marcia Araujo Alexandre, Gisely Cardoso Melo, Marcelo Brito, Maria Mourao, Jose Diego Brito Sousa, djane Baia-da-Silva, Marcus Vinitius Farias Guerra, Ludhmila Hajjar, Rosemary Costa Pinto, Antonio Balieiro, Felipe Gomes Naveca, Mariana Xavier, Alexandre Salomao, Andre Siqueira, Alexandre Schwarzbolt, Julio Henrique Rosa Croda, Mauricio Lacerda Nogueira, Gustavo Romero, Quique Bassat, Cor Jesus Fontes, Bernardino Albuquerque, Claudio Daniel-Ribeiro, Wuelton Monteiro, Marcus Lacerda, CloroCovid-19 Team

doi: <https://doi.org/10.1101/2020.04.07.20056424>

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.

General “Lessons Learned” (Misc. sources)

- Caution with (miss-)applying Surviving Sepsis guidelines to COVID-19 patients
- Patients generally NOT in septic shock on presentation
- High-volume fluid resuscitation generally not helpful / actually harmful
- BUT: high risk for AKI, and high risk for worse outcomes in AKI
- Cytokine release syndrome may be key
- HFNC, prone ventilation preferred
- Early intubation no longer favored
- At least one case of rhabdomyolysis

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Volume 26, Number 7—July 2020

Research Letter

Rhabdomyolysis as Potential Late Complication Associated with COVID-19