

COVID-19: WHAT YOU SHOULD KNOW

CURRENT AS OF 04.05.2020

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GW DIVISION OF INFECTIOUS DISEASES



Disclosures

- No financial or research conflicts of interest
- At-risk group: clinical medical worker, two-physician household





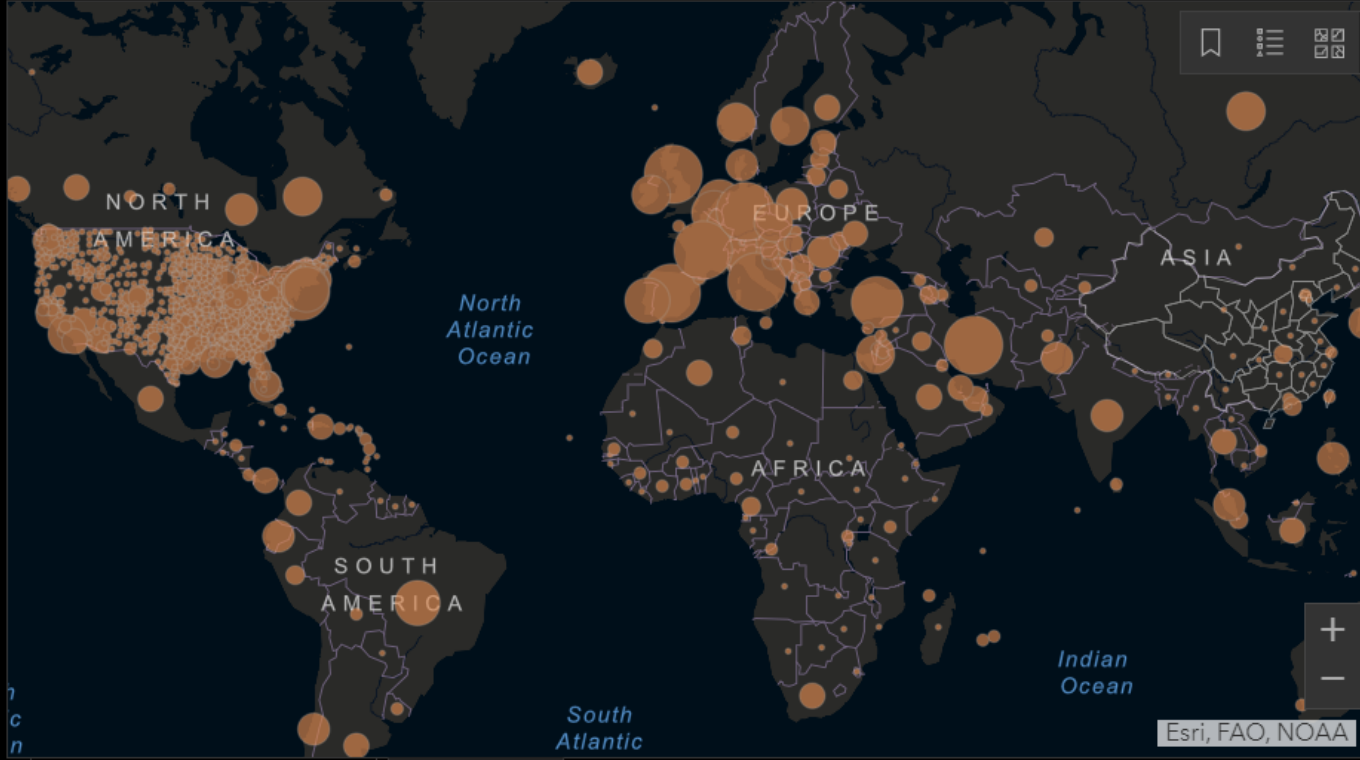


Total Confirmed

1,216,422

Confirmed Cases by Country/Region/Sovereignty

- 312,245 US
- 130,759 Spain
- 124,632 Italy
- 96,108 Germany
- 90,853 France
- 82,602 China
- 58,226 Iran
- 42,480 United Kingdom
- 23,934 Turkey



Cumulative Confirmed Cases

Active Cases

182

countries/regions

Lancet Inf Dis Article: [Here](#). Mobile Version: [Here](#). Visualization: [JHU CSSE](#). Automation Support: [Esri Living Atlas team](#) and [JHU APL](#). Contact [US](#). [FAQ](#).

Data sources: WHO, CDC, ECDC, NHC, DXY, 1point3acres, Worldometers.info, BNO, state and

Total Deaths

65,711

15,362 deaths Italy

12,418 deaths Spain

7,560 deaths France

4,313 deaths United Kingdom

3,603 deaths Iran

3,210 deaths

Total Recovered

252,478

77,207 recovered China

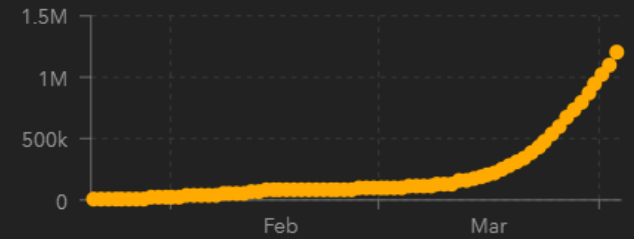
38,080 recovered Spain

26,400 recovered Germany

20,996 recovered Italy

19,736 recovered Iran

15,574 recovered



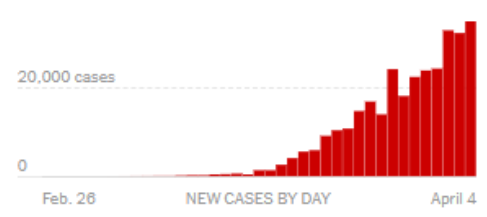
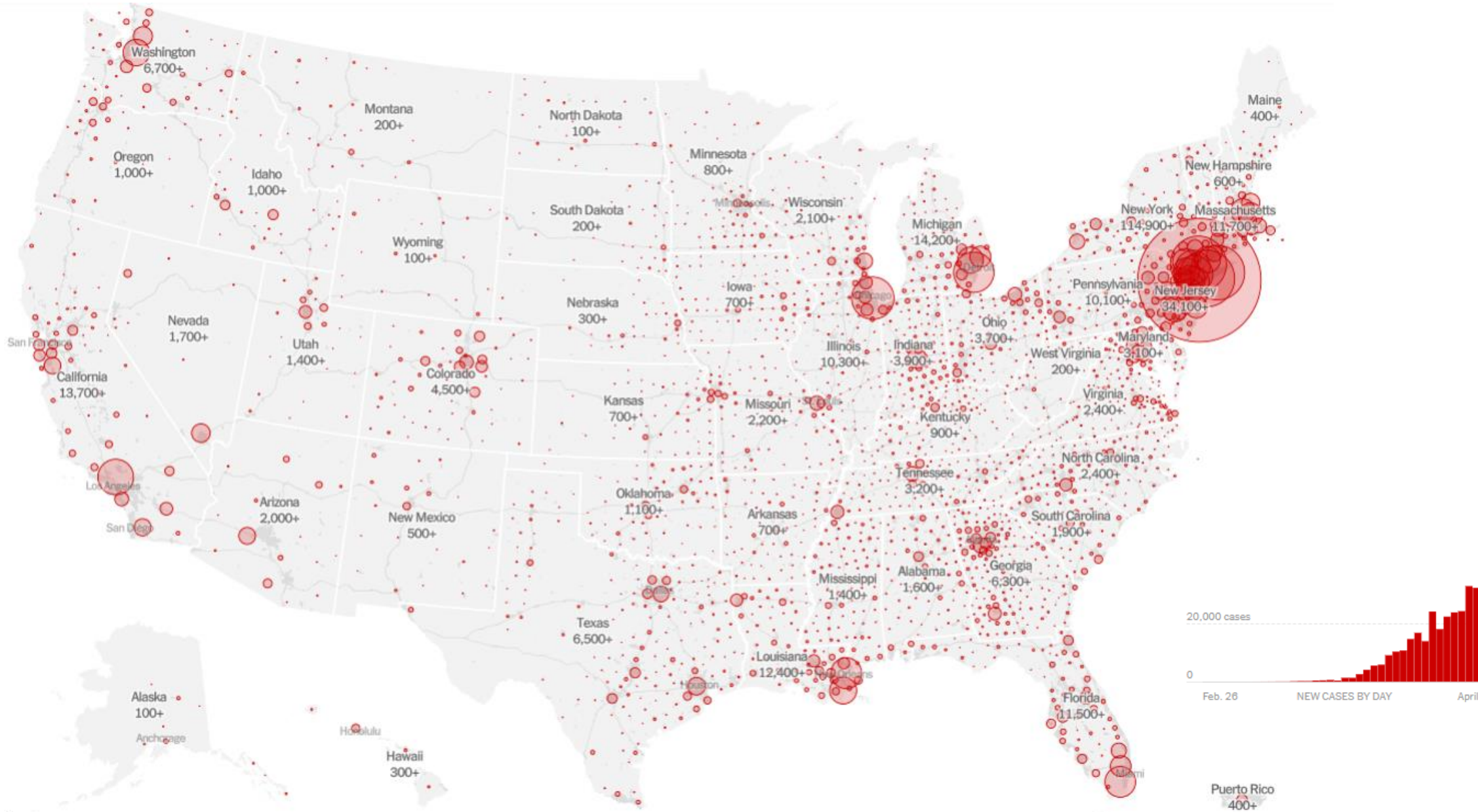
Confirmed

Logarithmic

Daily Increase

Last Updated at (M/D/YYYY)

4/5/2020, 7:26:43 AM



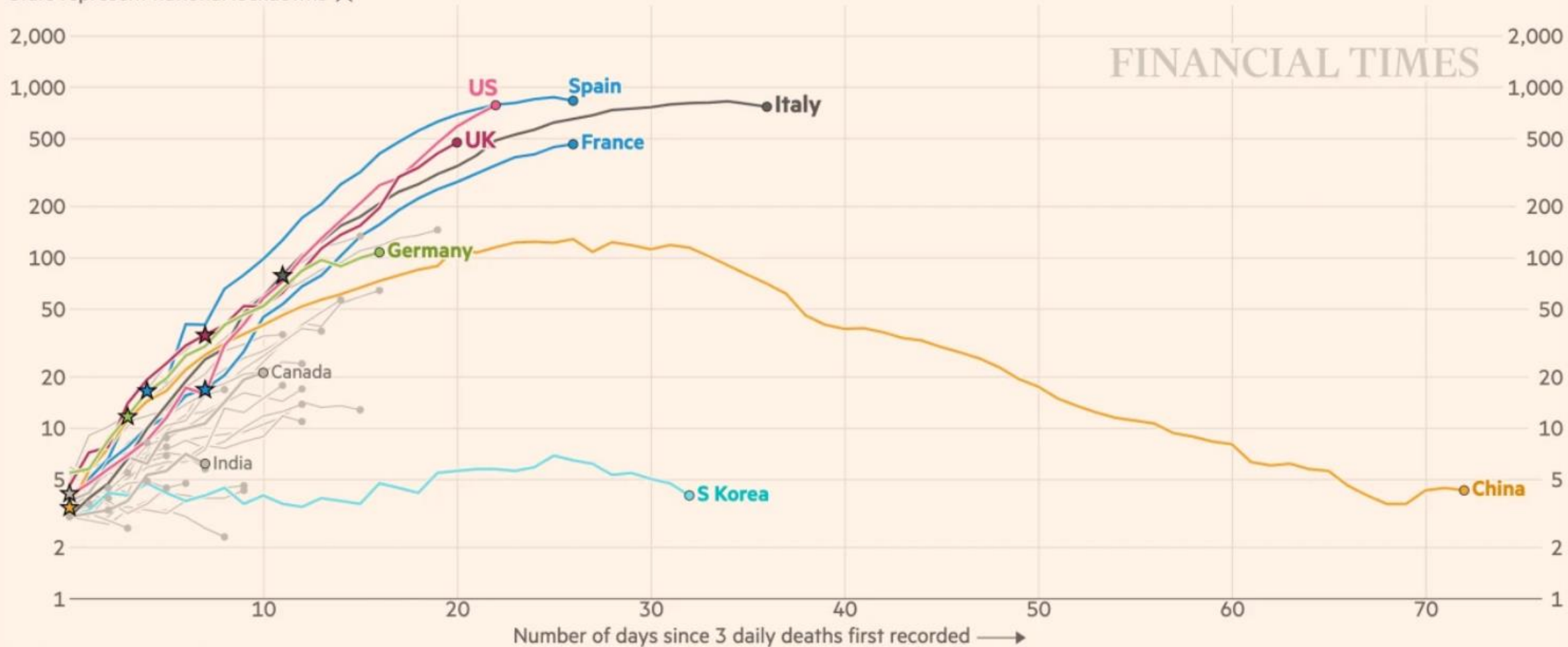
TOTAL CASES
311,536

DEATHS
8,499

pbox

Italy and Spain's daily death tolls are plateauing, but in the UK and US every day brings more new deaths than the last

Daily deaths with coronavirus (7-day rolling average), by number of days since 3 daily deaths first recorded
Stars represent national lockdowns ★



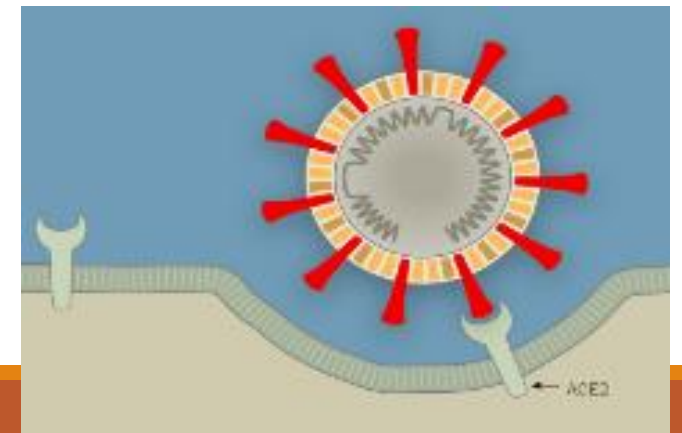
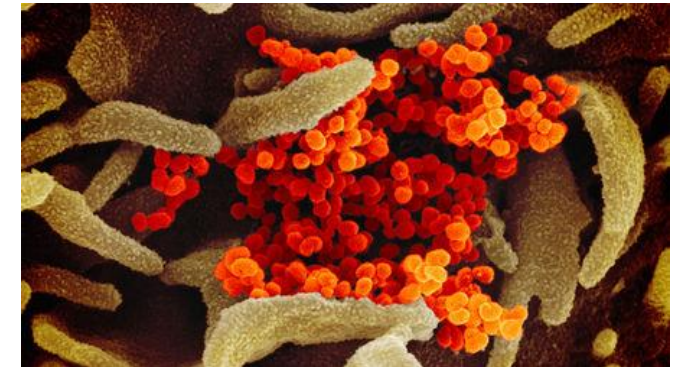
FT graphic: John Burn-Murdoch / @jburnmurdoch

Source: FT analysis of European Centre for Disease Prevention and Control; Worldometers; FT research. Data updated April 04, 19:00 GMT

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Virus Features

- Name: **SARS-CoV-2**
 - Family: *Coronavirus*
 - (Influenza: family *Orthomyxovirus*)
- Origin: bats ± pangolins
- 1 infectious person → 3 new cases
 - (Influenza: 1-2 new cases)
- No pre-existing (“herd”) immunity
- How it is spread:
 - **Droplets** (coughing, sneezing – 6 foot radius)
 - **Surfaces** (touch)
 - Health care workers: **aerosols** (procedures)



COVID-19 Disease Features

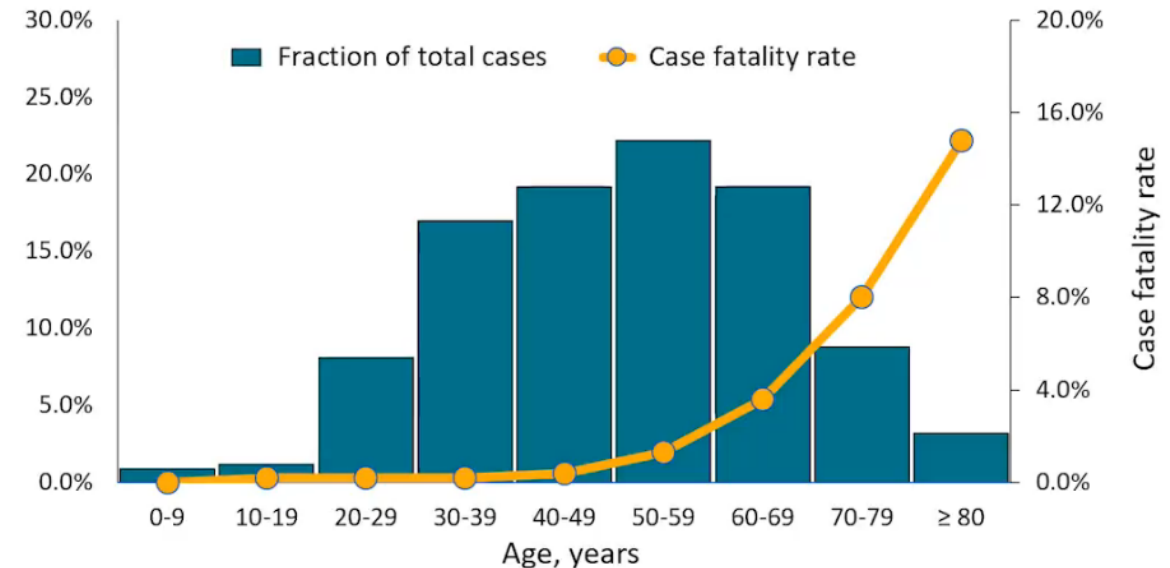
- **Symptoms: fever, cough, shortness of breath**
 - Severe disease: Acute Respiratory Distress Syndrome
- **Symptom severity at diagnosis:**
 - 80% mild-moderate (recovered at home)
 - 15% severe (hospitalized)
 - 5% critical (ICU/ventilator)
- **Average time from exposure to symptoms: 5 days (range: 2-14)**
- Duration of illness: 1-2 weeks if mild, 4-6 if severe
- Virus shedding
 - Highest in early days of illness, continues for 7-12 days
 - **Can occur 24-48 hours prior to onset of symptoms**

Most At-Risk

- Older Age
- Chronic conditions:
 - High blood pressure
 - Heart or kidney disease
 - Diabetes
- Immunocompromised conditions
 - Data on 245 cases of COVID-19 reported to CDC
 - Higher risk of hospitalization/ICU

Mortality in USA: 2.6% across all groups

- CDC data current as of 3/31/2020

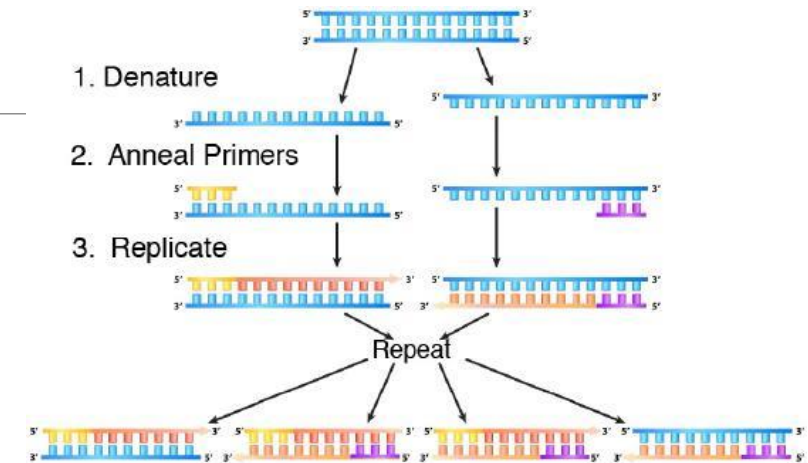


adapted from Zhang 2020, China CDC Weekly Rep, 2(8):113-122.



Testing for COVID-19

- **Molecular detection**
 - Detects viral RNA
 - Polymerase Chain Reaction
 - CDC → state labs → academic and commercial labs
 - Most accurate during peak symptoms
- **Waiting for: antibody-based detection**
 - Less sensitive in early disease (IgM)
 - Can show immunity/recovered status (IgG)



Medical Approaches

1. Making cell less hospitable to virus

- Hydroxychloroquine, azithromycin
- Conflicting data, small studies

2. Interfering with viral replication

- Lopinavir/ritonavir – did not work in Chinese trial of 199 patients
- Remdesivir – ongoing NIH clinical trials

3. Inhibition of inflammatory cascade

- IL-6 inhibitors (tocilizumab, sarilumab), other monoclonal antibodies

4. Mechanical ventilation support

5. Passive immunity: Convalescent plasma

6. Active immunity: Vaccine development

THE
HILL

FDA commissioner warns public against taking 'any form of chloroquine' unless prescribed

Myasthenia gravis due to hydroxychloroquine

DOI <https://doi.org/10.4081/reumatismo.2015.849>

Fearing form of

By Theresa Waldrop,

Updated 12:50 PM ET, Wed March 25, 2020



en automédication en une semaine

SANTE Certains patients ont dû être pris en charge dans un service de réanimation

C.C. | Publié le 30/03/20 à 16h34 — Mis à jour le 30/03/20 à 17h33

120 COMMENTAIRES | 5,8k PARTAGES



Un pharmacien montre une boîte de "plaquenil" le 23 mars à Rennes. — Damien Meyer / AFP

À LIRE AUSSI

30/03/20 | CONFINEMENT
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30/03/20 | SANTE
La situation « très complexe » des gens du voyage face au confinement

D'ACTU

'This Can Happen to You': 29-Year-Old Coronavirus Patient Shares Warning

By Doreen Gentzler and Patricia Fantis • Published March 31, 2020 • Updated on April 1, 2020 at 7:58 am



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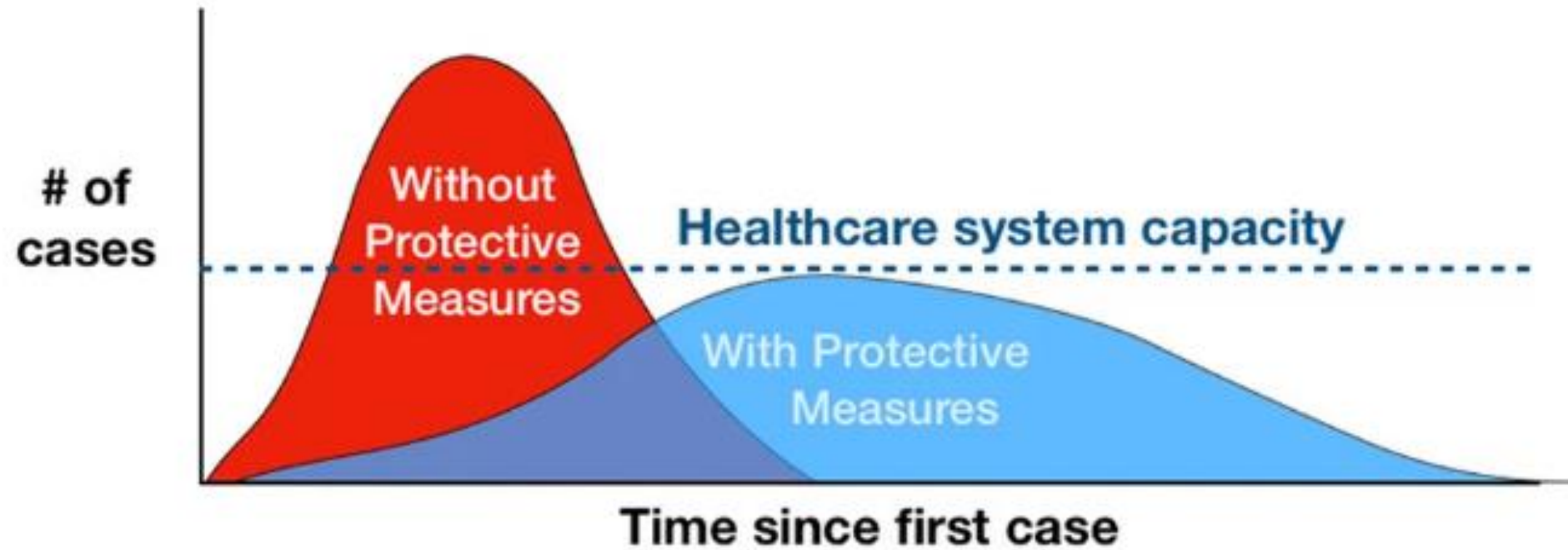


CORONAVIRUS
The Latest: 4,690 Coronavirus Cases Diagnosed in DC, Maryland, Virginia



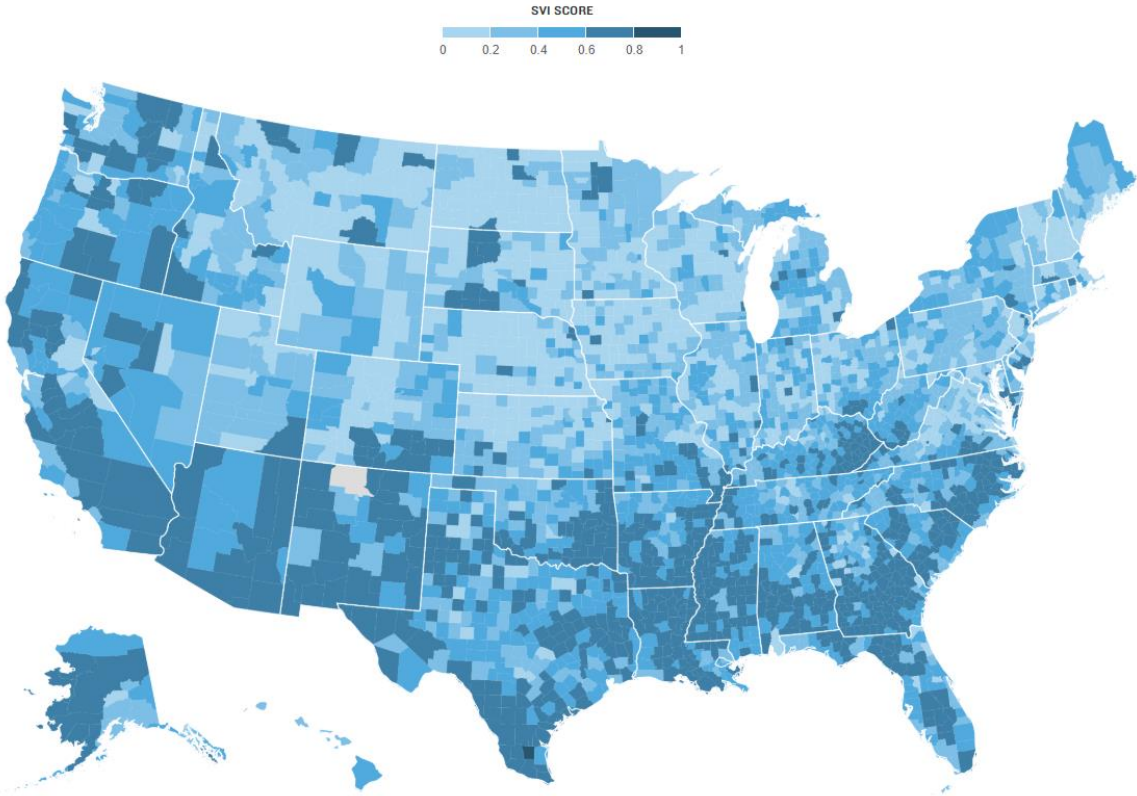
CORONAVIRUS
What's Allowed in DC, Maryland, Virginia Under Stay-

“Flattening the Curve”



Adapted from CDC / The Economist

US Health System



Source: CDC's Social Vulnerability Index
Credit: Ruth Talbot/NPR and Chris Zubak-Skeels/Center for Public Integrity



Models and Predictions

United States of America ▾

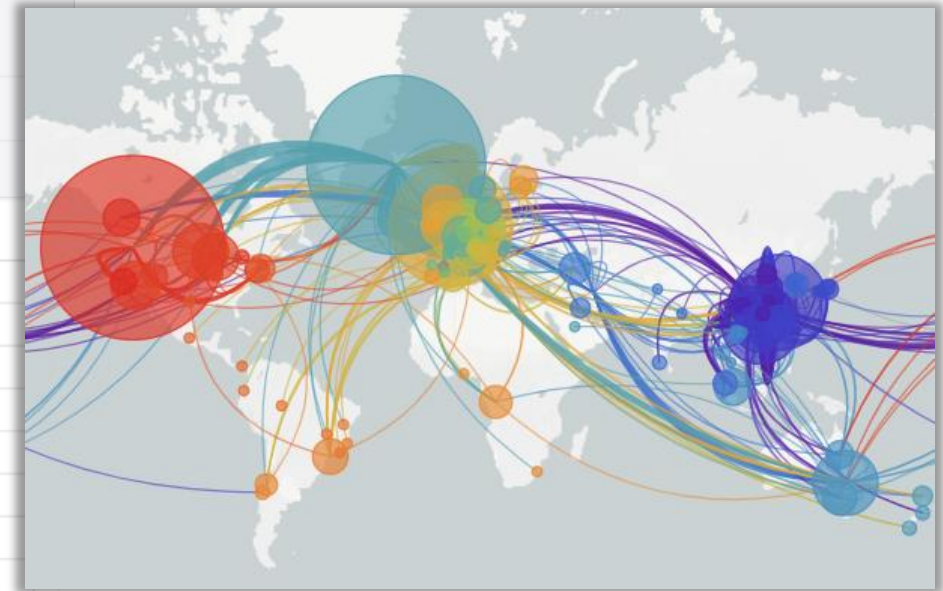
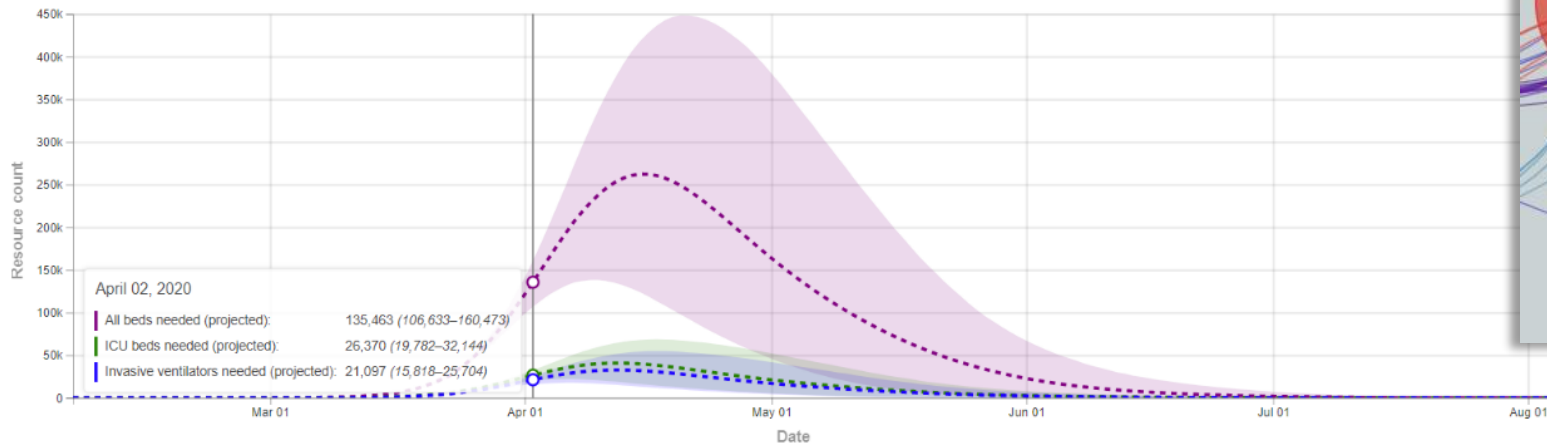
Hospital resource use ⓘ

13 days until peak resource use on
April 15, 2020

Resources needed for COVID-19 patients on peak date

All beds needed 262,092 beds	→	Bed shortage 87,674 beds
ICU beds needed 39,727 beds	→	ICU bed shortage 19,863 beds
Invasive ventilators needed 31,782 ventilators		

All resources All beds ICU beds Invasive ventilators



Recommendations






THE GEORGE
WASHINGTON
UNIVERSITY

WASHINGTON, DC

Summary of International COVID-19 Working Group Recommendations

HENRY J. KAMINSKI, MD

GEORGE WASHINGTON UNIVERSITY

- 
- ▶ No data currently exist on how COVID-19 affects people with myasthenia gravis (MG)/LEMS or patients with other diseases on immunosuppressive therapies.
 - ▶ There is a **theoretical** concern that MG/LEMS patients may be at higher risk of developing the infection or experiencing severe manifestations of COVID-19.

Recommendations

The MG expert panel suggests that therapy decisions should be individualized and made collaboratively between the person with MG and his/her healthcare provider. Based on their expert advice, it is suggested that:

- ▶ People with MG **should follow the corresponding national guidelines** and any additional recommendations for people at risk for serious illnesses from COVID-19.
- ▶ MG/LEMS patients **should continue their current treatment** and are advised **not to stop** any existing medications, unless specifically discussed and approved by their healthcare provider

Recommendations

- ▶ **no scientific evidence** that symptomatic therapies like Pyridostigmine or 3,4 Diaminopyridine increases the risk of infection
- ▶ **Should practice** social distancing, including avoiding public gatherings/crowds, avoiding crowded public transport and where possible use alternatives to face-to-face consultations (eg: telemedicine)
- ▶ Consideration of **risk regarding travel** for treatment or to obtain blood tests for monitoring of treatment needs to be considered

Special Considerations

IVIg, Eculizumab, and Plasma Exchange

- ▶ **No evidence** to suggest that intravenous immunoglobulin (IVIg4) or therapeutic plasma exchange (PLEX or TPE) carry any additional risk in catching COVID-19.
- ▶ **No evidence** to support that inhibition of complement using eculizumab increases susceptibility to COVID infection or
- ▶ There is the risk of **traveling** to infusion or exchange center, which now needs to be considered

Special Considerations

Rituximab treatment

- ▶ **Before starting a B-cell depleting therapy** (rituximab), healthcare providers should consider the risk of worsening myasthenia or crisis and the risk of catching the viral infection. It may be advisable to delay initiation of cell depleting therapies, until the peak of the outbreak is over in their region. **However**, the risk of not starting the cell depleting therapy in occasional patients may outweigh the risk of severe COVID-19 infection and this has to be discussed with the patient in detail.

Clinical Trial Participants

- ▶ Any decision regarding ongoing need for in-person evaluations and treatments under the clinical trial be based with consideration for **patients' best interest**. In clinical trials this also has to be discussed and approved by the trial sponsor, institutional review board and medical monitor.

Experimental Treatments for COVID-19

- ▶ Various medications have been mentioned in the news and social media as being useful to treat COVID-19 (e.g., chloroquine, azithromycin, anti-virals etc), however, **these are not proven** to be effective or studied systematically at this time. Patients should be aware that some of these medications can potentially worsen MG and should avoid using these without specific medical approval.

International MG/COVID Working Group

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