# The COVID-19 Pandemic

## *Selected* Perspectives Current, Past, and Future

**Palmetto Forum**

May 6, 2020

***Eric Brenner, MD***

*Medical Epidemiologist*

*Email: ebrenner@rocketmail.com*

File Edit View History Bookmarks Tools Help

COVID-19 Map - Johns Hopkins

https://coronavirus.jhu.edu/map.html

Most Visited | Resource Library | HIV... | Google | Yahoo Mail | Gmail | Karlann | Eric | SolarEnergy | Software | Public Health | HP Product Setup | Norton Internet Securi...

JOHNS HOPKINS UNIVERSITY & MEDICINE | CORONAVIRUS RESOURCE CENTER

Home | Maps & Trends | Testing | News & Information | COVID-19 Basics | Videos & Live Events

World Map | NEW | U.S. Map | Critical Trends

# COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU)

## Total Confirmed
**3,663,911**

### Confirmed Cases by Country/Region /Sovereignty

- 1,204,479 US
- 219,329 Spain
- 213,013 Italy
- 196,243 United Kingdom
- 170,687 France
- 167,007 Germany
- 155,370 Russia
- 129,491 Turkey
- 115,953 Brazil
- 99,970 Iran
- 83,968 China
- 63,215 Canada
- 51,189 Peru
- 50,509 Belgium
- 49,400 India

Admin0 | Admin1 | Admin2

Last Updated at (M/D/YYYY)
5/6/2020, 12:32:26 AM


Cumulative Confirmed Cases | Active Cases | Incidence Rate | Case-Fatality Ratio | Testing Rate | Hospitalization Rate

**187**
countries/regions

*Lancet Inf Dis* Article: Here. Mobile Version: Here.
Lead by 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, the COVID Tracking Project (testing and

## Global Deaths
**257,288**

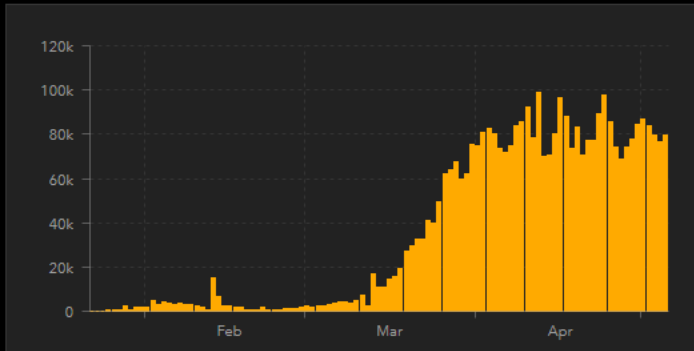
- 71,078 deaths US
- 29,501 deaths United Kingdom
- 29,315 deaths Italy
- 25,613 deaths Spain
- 25,537 deaths France
- 8,016 deaths Belgium
- 7,958 deaths Brazil

Global Deaths

## US State Level
## Deaths, Recovered

- 25,124 deaths, 58,950 recovered New York US
- 8,244 deaths, 15,642 recovered New Jersey US
- 4,212 deaths, recovered Massachusetts US
- 4,183 deaths, 15,659 recovered Michigan US
- 3,179 deaths, recovered Pennsylvania US
- 2,834 deaths, recovered Illinois US
- 2,633 deaths, 4,346 recovered Connecticut US

US Deaths, Recovered




Confirmed | Logarithmic | Daily Cases

File Edit View History Bookmarks Tools Help

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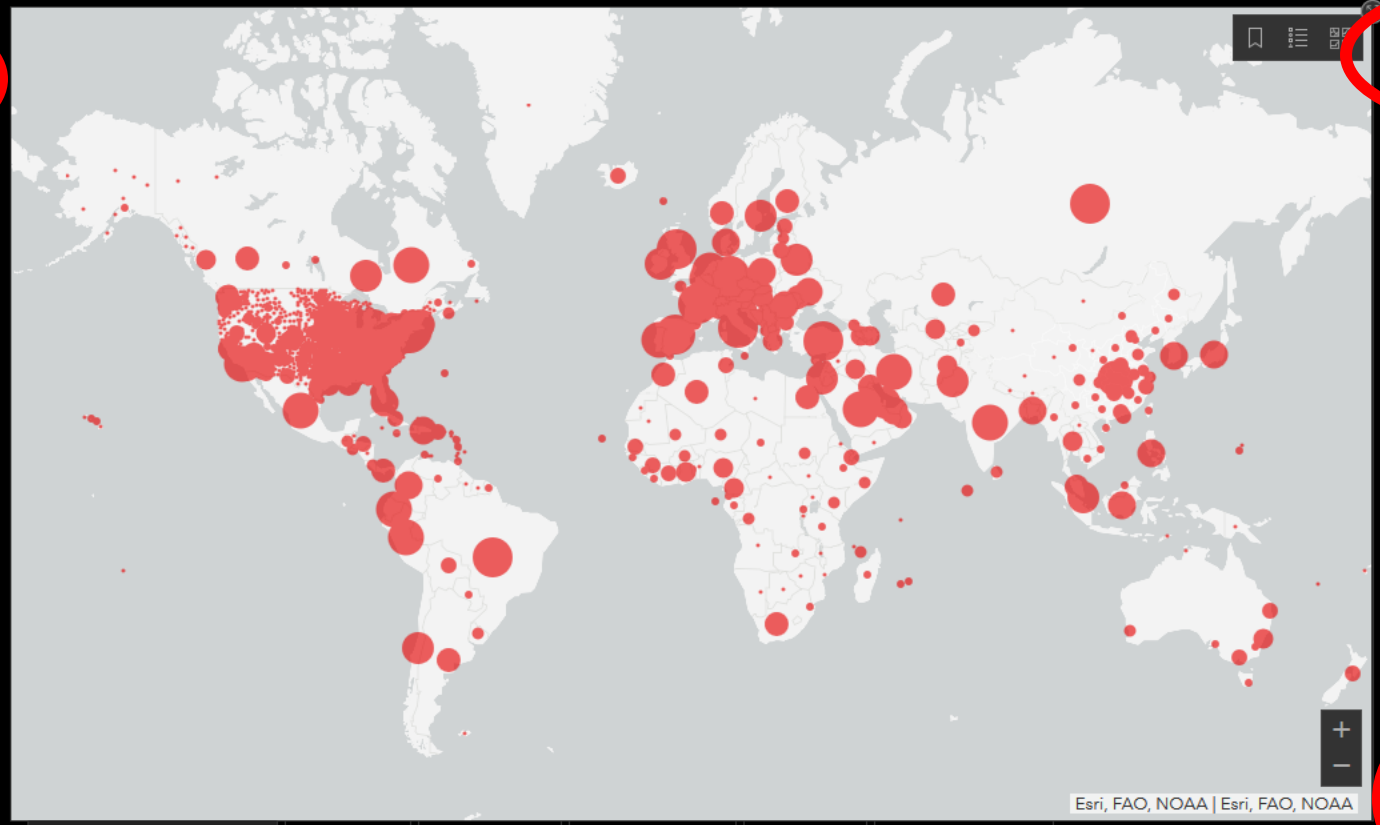


Cumulative Confirmed Cases | Active Cases | Incidence Rate | Case-Fatality Ratio | Testing Rate | Hospitalization Rate

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Global Deaths

**US State Level**
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Michigan US

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Pennsylvania US

2,834 deaths, recovered
Illinois US

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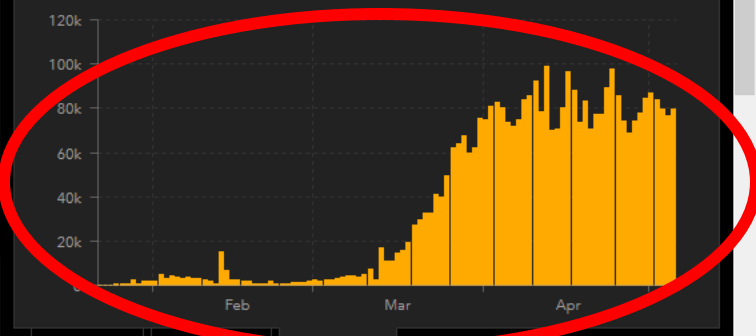
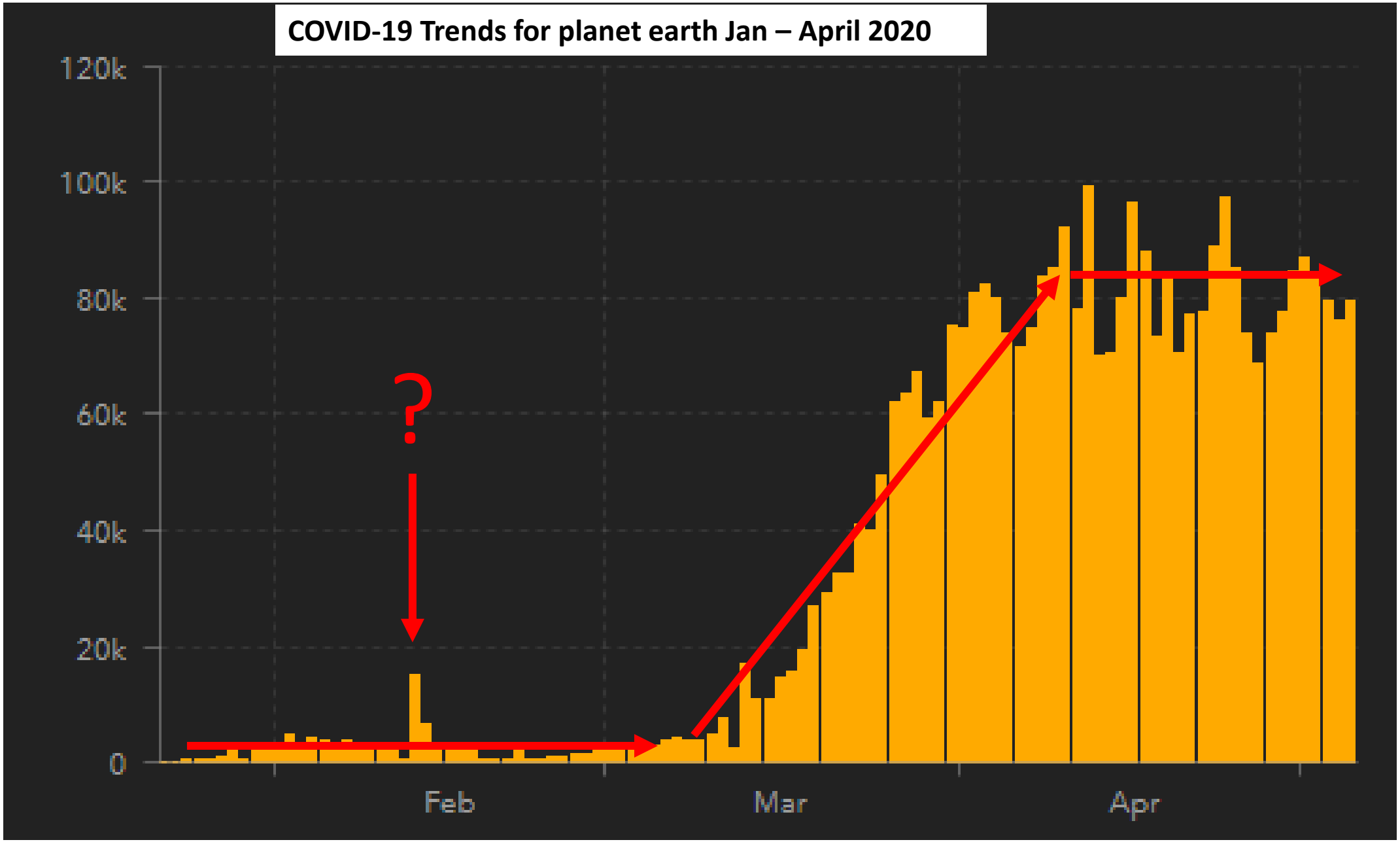
Connecticut US

US Deaths, Recovered

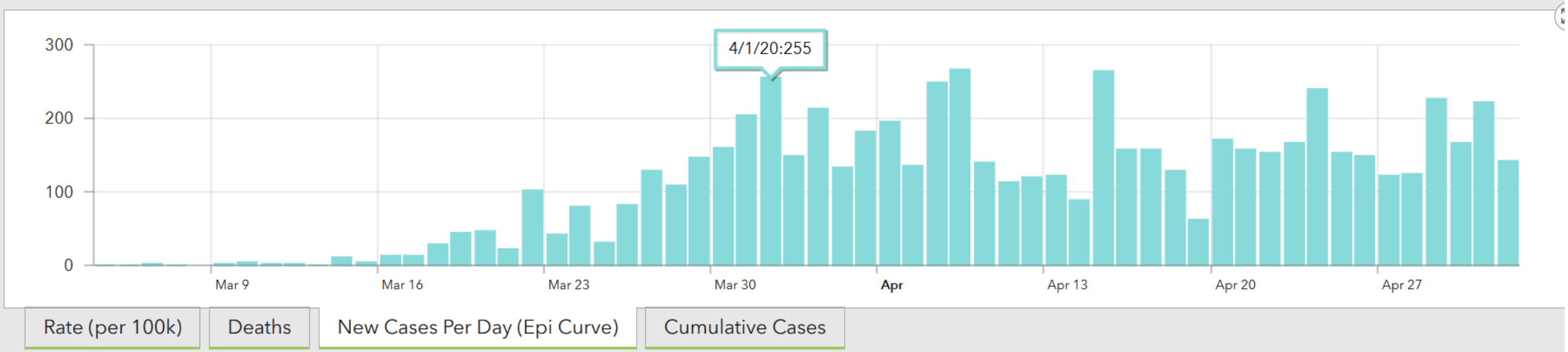



Confirmed | Logarithmic

javascript:void(0);


COVID-19 Trends for planet earth Jan – April 2020
120k
100k
80k
60k
40k
20k
0
?
Feb
Mar
Apr

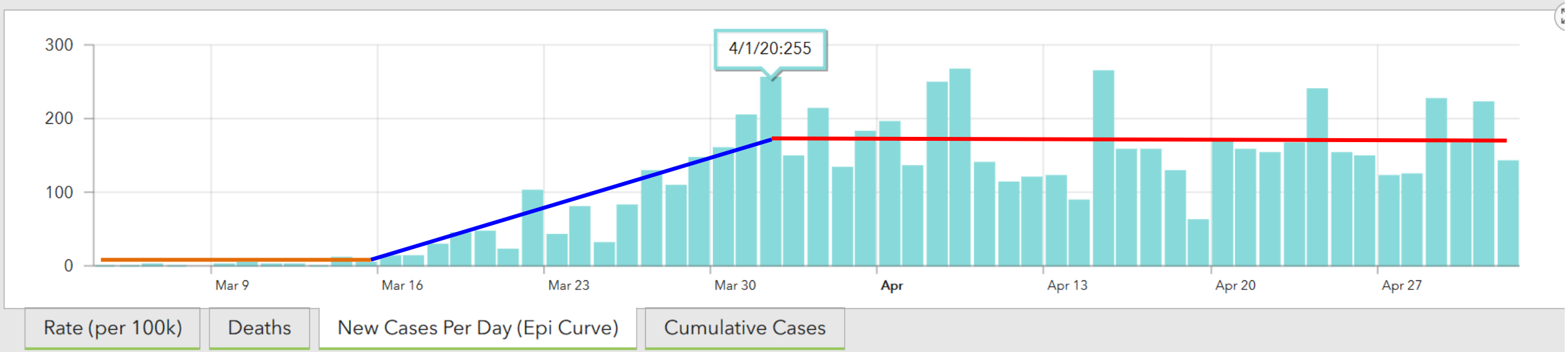
# Daily COVID-19 Cases Reported in South Carolina - March 1 – May 2




From: https://www.scdhec.gov/infectious-diseases/viruses/coronavirus-disease-2019-covid-19/sc-testing-data-projections-covid-19 (Acessed May 4, 2020)

# Daily COVID-19 Cases Reported in South Carolina: March 1 – May 2

## Schematic Look at three (3) phases observed in the epi-curve to-date




March 1 – March 15

March 16 – April 1

April 2 – May 2 => ~ 175 cases per day x 7 = ~1225 per week)

From: https://www.scdhec.gov/infectious-diseases/viruses/coronavirus-disease-2019-covid-19/sc-testing-data-projections-covid-19
(Acessed May 4, 2020)

# Observed and Projected SC COVID-19 Cases by Week with Focus on March 29 – May 16

| Week of | Cases | Cumulative Cases | Cumulative Case Rate / 100,000 | Data Observed or Projected |
|---|---|---|---|---|
| Mar 1 – Mar 7 | 6 | 6 | 0.1 | Observed |
| Mar 8 – Mar 14 | 23 | 29 | 1 | Observed |
| Mar 15 – Mar 21 | 174 | 203 | 4 | Observed |
| Mar 22 – Mar 28 | 575 | 778 | 15 | Observed |
| Mar 29 – Apr 4 | 1,262 | 2,010 | 40 | Observed |
| Apr 5 – Apr 11 | 1,279 | 3,319 | 65 | Observed |
| Apr 12 – Apr 18 | 1,041 | 4,360 | 85 | Observed |
| Apr 19 – Apr 25 | 1,111 | 5,471 | 107 | Observed |
| Apr 26 – May 2 | 1,179 | 6,650 | 130 | Projected |
| May 3 – May 9 | 1,205 | 7,855 | 154 | Projected |
| May 10 – May 16 | 1,208 | 9,064 | 178 | Projected |

Little change noted or expected in this short time period… i.e. about 1,100 to 1,200 cases per week. Future longer-term trends likely of course to differ for many reasons!

Table but not title from:
https://www.scdhec.gov/infectious-diseases/viruses/coronavirus-disease-2019-covid-19/sc-testing-data-projections-covid-19
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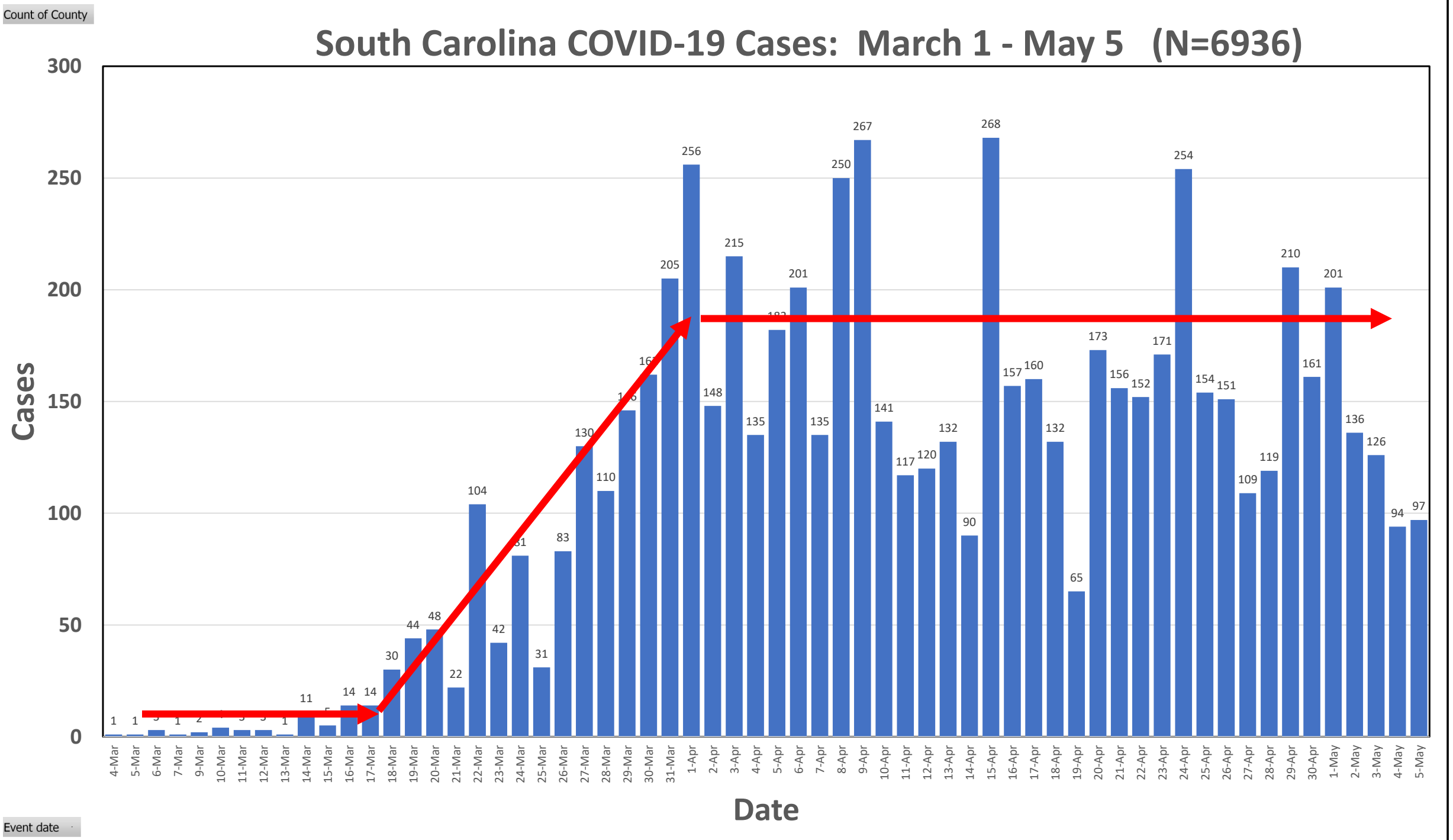
Count of County
South Carolina COVID-19 Cases: March 1 - May 5 (N=6936)
Cases
Date
Event date
300
250
200
150
100
50
0
4-Mar 5-Mar 6-Mar 7-Mar 9-Mar 10-Mar 11-Mar 12-Mar 13-Mar 14-Mar 15-Mar 16-Mar 17-Mar 18-Mar 19-Mar 20-Mar 21-Mar 22-Mar 23-Mar 24-Mar 25-Mar 26-Mar 27-Mar 28-Mar 29-Mar 30-Mar 31-Mar 1-Apr 2-Apr 3-Apr 4-Apr 5-Apr 6-Apr 7-Apr 8-Apr 9-Apr 10-Apr 11-Apr 12-Apr 13-Apr 14-Apr 15-Apr 16-Apr 17-Apr 18-Apr 19-Apr 20-Apr 21-Apr 22-Apr 23-Apr 24-Apr 25-Apr 26-Apr 27-Apr 28-Apr 29-Apr 30-Apr 1-May 2-May 3-May 4-May 5-May
1 1 11 14 14 30 44 48 22 104 42 31 83 130 110 205 256 148 215 135 201 135 250 267 141 117 120 132 90 268 157 160 132 65 173 156 152 171 254 154 151 109 119 210 161 201 136 126 94 97

# S.C. 2006 List of Reportable Conditions

## Attention: Health Care Facilities, Physicians, and Laboratories

South Carolina Law requires reporting of diseases and conditions on this list to your local public health department.
(State Law # 44-29-10, Regulation # 61-20, State Laws #44-1-110 and 44-1-140.)

**HIPAA: Federal HIPAA legislation allows disclosure of protected health information, without consent of the individual, to public health authorities to collect and receive such information for the purpose of preventing or controlling disease. (HIPAA 45 CFR §164.512)**

## REPORT IMMEDIATELY
### by Phone
### (Confirmed and Suspected Cases)

Any outbreak, unusual disease, or cluster of cases to include a potential biological, chemical, or terrorist event. (1)
- Animal (mammal) bites
- Anthrax (7)
- Botulism
- Food borne outbreak – unusual cluster
- *Haemophilus influenzae* type b, invasive disease (4) (7)
- Measles (rubeola)
- Meningococcal disease (7)
- Plague (7)
- Poliomyelitis
- SARS – Severe Acute Respiratory Syndrome (7)
  (by current CDC case definition)
- Smallpox
- Viral Hemorrhagic Fever

## Urgently Reportable
### within 24 Hours by Phone

- Arboviral Neuroinvasive Disease (acute infection, including acute flaccid paralysis, atypical Guillain-Barre Syndrome): Eastern Equine (EEE), LaCrosse (LAC), St. Louis (SLE), West Nile Virus (WNV) (7)
- Brucellosis (7)
- Cholera (*Vibrio cholerae* type O1 and non-O1) (7)

## Report within 7 Days

- AIDS (2)
- Campylobacter enteritis
- CD4 T-lymphocyte count – all results (L) (2)
- Chancroid
- Chlamydia trachomatis, genital site (L)
- Creutzfeldt - Jakob Disease (Age < 55 years)
- Cryptosporidiosis
- Cyclosporiasis
- Dengue
- Ehrlichiosis
- Giardiasis
- Gonorrhea
- *Haemophilus influenzae*, non-type b invasive disease (4) (7)
- Hepatitis B, chronic
- Hepatitis B Surface Antigen + (HBsAg +) with each pregnancy
- Hepatitis C, D, E
- HIV-1 or HIV-2 infection (2)
- HIV quantification / viral load - all results (L) (2)
- Influenza, positive rapid flu test (#)
- Influenza, positive virus culture isolates (L)
- Influenza, pediatric deaths - age < 17 years
- Kawasaki disease
- Lead poisoning (5)
- Lead tests, all (6) (L, includes office tests)
- Legionellosis
- Leprosy
- Leptospirosis
- Listeriosis (7)
- Lyme disease
- Lymphogranuloma venereum
- Malaria

# South Carolina 2014 List of Reportable Conditions

## Attention: Health Care Facilities, Physicians, and Laboratories

South Carolina Law §44-29-10 and Regulation §61-20 require reporting of conditions on this list to the local public health department.
South Carolina Law §44-53-1380 requires reporting by laboratories of all blood lead values in children under 6 years of age.
**HIPAA: Federal HIPAA legislation allows disclosure of protected health information, without consent of the individual, to public health authorities for the purpose of preventing or controlling disease. (HIPAA 45 CFR §164.512)**

**(!) Immediately reportable by phone**
**(*) Urgently reportable within 24 hours by phone**
**All other conditions reportable within 3 days**

**REPORT ALL SUSPECTED AND CONFIRMED CASES (SEE "HOW TO REPORT" ON BACK)**

- ! **Any *outbreak* or *unusual disease* (1) (5)**
- ! **Any intentional biological, chemical, or radiological event**
- * Animal (mammal) bites (6)
- ! **Anthrax *(Bacillus anthracis)* (5)**
- Babesiosis
- ! **Botulism (*Clostridium botulinum* or Botulinum toxin)**
- * Brucellosis (5)
- Campylobacteriosis (2)
- Chancroid *(Haemophilus ducreyi)*
- *Chlamydia trachomatis*, genital site
- Creutzfeldt-Jakob Disease (Age < 55 years only)
- Cryptosporidiosis
- Cyclosporiasis
- * Dengue *(Flavivirus)* (5)
- * Diphtheria (5)
- * Eastern Equine Encephalitis (5)
- * *E. coli*, shiga toxin – producing (STEC), including *E. coli*
- Leprosy (Hansen's Disease)
- Leptospirosis
- Listeriosis (5)
- Lyme disease *(Borrelia burgdorferi)*
- Lymphogranuloma venereum
- Malaria (*Plasmodium* species)
- ! **Measles (Rubeola)**
- Meningo-encephalitis, aseptic
- ! **Meningococcal disease (3) (4) (5)**
- * Mumps
- * Pertussis
- ! **Plague *(Yersinia pestis)* (5)**
- ! **Poliomyelitis**
- Psittacosis *(Chlamydophila psittaci)*
- * Q fever *(Coxiella burnetii)*
- ! **Rabies (human)**
- Rabies Post Exposure Prophylaxis (PEP) (when administered) (6)

# South Carolina 2020 List of Reportable Conditions

**REPORT UPON RECOGNITION OF A SUSPECTED CASE, DIAGNOSIS, OR POSITIVE LABORATORY EVIDENCE (SEE "HOW TO REPORT" ON BACK)**

Suspected means clinical suspicion and/or initial laboratory detection, isolation, identification, or presence of supportive laboratory results.

☣ Potential agent of bioterrorism

! Immediately reportable by phone call to a live person at the regional public health office, 24/7

* Urgently reportable within 24 hours by phone

All other conditions except lead are reportable within 3 business days

**COVID-19**
**Where are you?**

☣ ! **Any case that may be caused by chemical, biological, or radiological threat, novel infectious agent, or any cluster of cases, or outbreak of a disease or condition that might pose a substantial risk of human morbidity or mortality (1) (5)**

…mal) bites (6)

***…cillus anthracis)* (5)**

*…Babesia* spp.)

***…lostridium botulinum* or Botulinum toxin)**

☣ * Brucellosis *(Brucella* spp.*)* (5)

Campylobacteriosis (5)

* *Candida auris* or suspected (5) (15)

Carbapenem-resistant *Enterobacteriaceae* (CRE) and *Acinetobacter baumanii* (CRAB) (2) (5) (9)

Carbapenem-resistant *Pseudomonas aeruginosa* (CRPA) (2) (5) (12)

Chancroid (*Haemophilus ducreyi)*

* Chikungunya (5)

*Chlamydia trachomatis*

* Ciguatera

Creutzfeldt-Jakob Disease (Age < 55 years only)

Cryptosporidiosis (*Cryptosporidium* spp.)

Cyclosporiasis *(Cyclospora cayetanensis)* (5)

Legionellosis

Leprosy *(Mycobacterium leprae)* (Hansen's Disease)

Leptospirosis

Listeriosis (5)

Lyme disease *(Borrelia burgdorferi)*

Lymphogranuloma venereum

Malaria *(Plasmodium* spp.)

! **Measles (Rubeola)**

! **Meningococcal disease *(Neisseria meningitidis)* (2) (3) (4) (5)**

* Mumps

* Pertussis *(Bordetella pertussis)*

☣ ! **Plague *(Yersinia pestis)* (5)**

! **Poliomyelitis**

☣ Psittacosis *(Chlamydophila psittaci)*

☣ * Q fever *(Coxiella burnetii)*

! **Rabies (human)**

Rabies Post Exposure Prophylaxis (PEP) when administered (6)

* Rubella (includes congenital)

Salmonellosis (2) (5)

* Shiga toxin positive (5)

Shigellosis (2) (5)

# South Carolina 2020 List of Reportable Conditions

**REPORT UPON RECOGNITION OF A SUSPECTED CASE, DIAGNOSIS, OR POSITIVE LABORATORY EVIDENCE (SEE "HOW TO REPORT" ON BACK)**

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All other conditions except lead are reportable within 3 business days

**IMPORTANT UPDATE:**
As of April 22, 2020, **COVID-19** cases and deaths are now **urgently reportable within 24 hours by phone.**

☣ ! **Any case that may be caused by chemical, biological, or radiological threat, novel infectious agent, or any cluster of cases, or outbreak of a disease or condition that might pose a substantial risk of human morbidity or mortality (1) (5)**

* Animal (mammal) bites (6)

☣ ! **Anthrax *(Bacillus anthracis)* (5)**

Babesiosis *(Babesia* spp.*)*

☣ ! **Botulism (*Clostridium botulinum* or Botulinum toxin)**

☣ * Brucellosis *(Brucella* spp.*)* (5)

Campylobacteriosis (5)

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Carbapenem-resistant *Enterobacteriaceae* (CRE) and *Acinetobacter baumanii* (CRAB) (2) (5) (9)

Carbapenem-resistant *Pseudomonas aeruginosa* (CRPA) (2) (5) (12)

Chancroid (*Haemophilus ducreyi)*

* Chikungunya (5)

*Chlamydia trachomatis*

* Ciguatera

Creutzfeldt-Jakob Disease (Age < 55 years only)

Cryptosporidiosis (*Cryptosporidium* spp.)

Cyclosporiasis *(Cyclospora cayetanensis)* (5)

Legionellosis

Leprosy *(Mycobacterium leprae)* (Hansen's Disease)

Leptospirosis

Listeriosis (5)

Lyme disease *(Borrelia burgdorferi)*

Lymphogranuloma venereum

Malaria *(Plasmodium* spp.)

! **Measles (Rubeola)**

! **Meningococcal disease *(Neisseria meningitidis)* (2) (3) (4) (5)**

* Mumps

* Pertussis *(Bordetella pertussis)*

☣ ! **Plague *(Yersinia pestis)* (5)**

! **Poliomyelitis**

☣ Psittacosis *(Chlamydophila psittaci)*

☣ * Q fever *(Coxiella burnetii)*

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Rabies Post Exposure Prophylaxis (PEP) when administered (6)

* Rubella (includes congenital)

Salmonellosis (2) (5)

* Shiga toxin positive (5)

Shigellosis (2) (5)

## HAN registration may take 24 to 48 hours

Due to the high volume of registrations, new registrants are asked to please be patient. DHEC is making every effort to update the HAN recipient list as quickly as possible. Please note that it could take 24 to 48 hours before you are able to receive notices via the Health Alert Network. Your patience is appreciated.



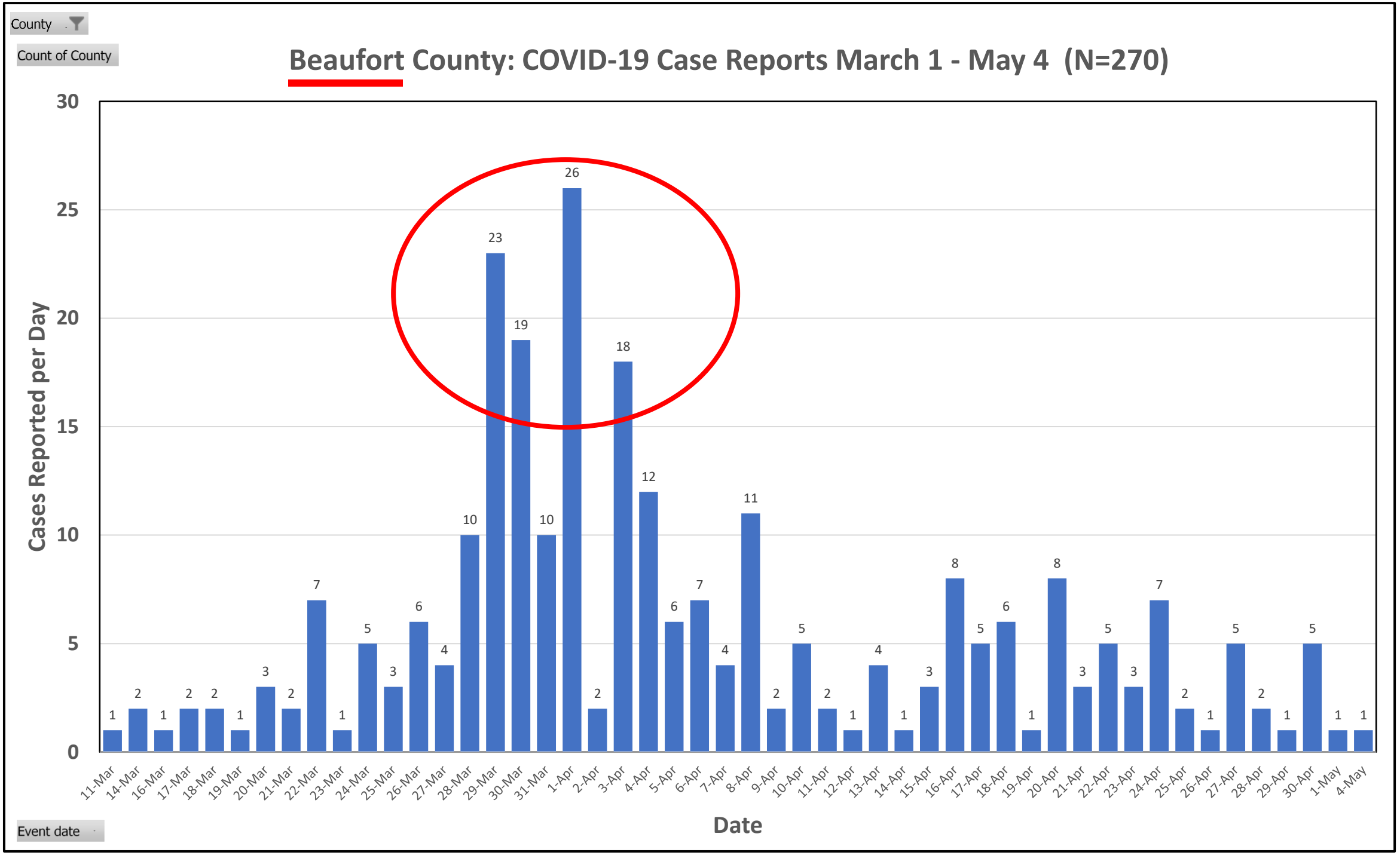
# South Carolina Health Alert Network (HAN)

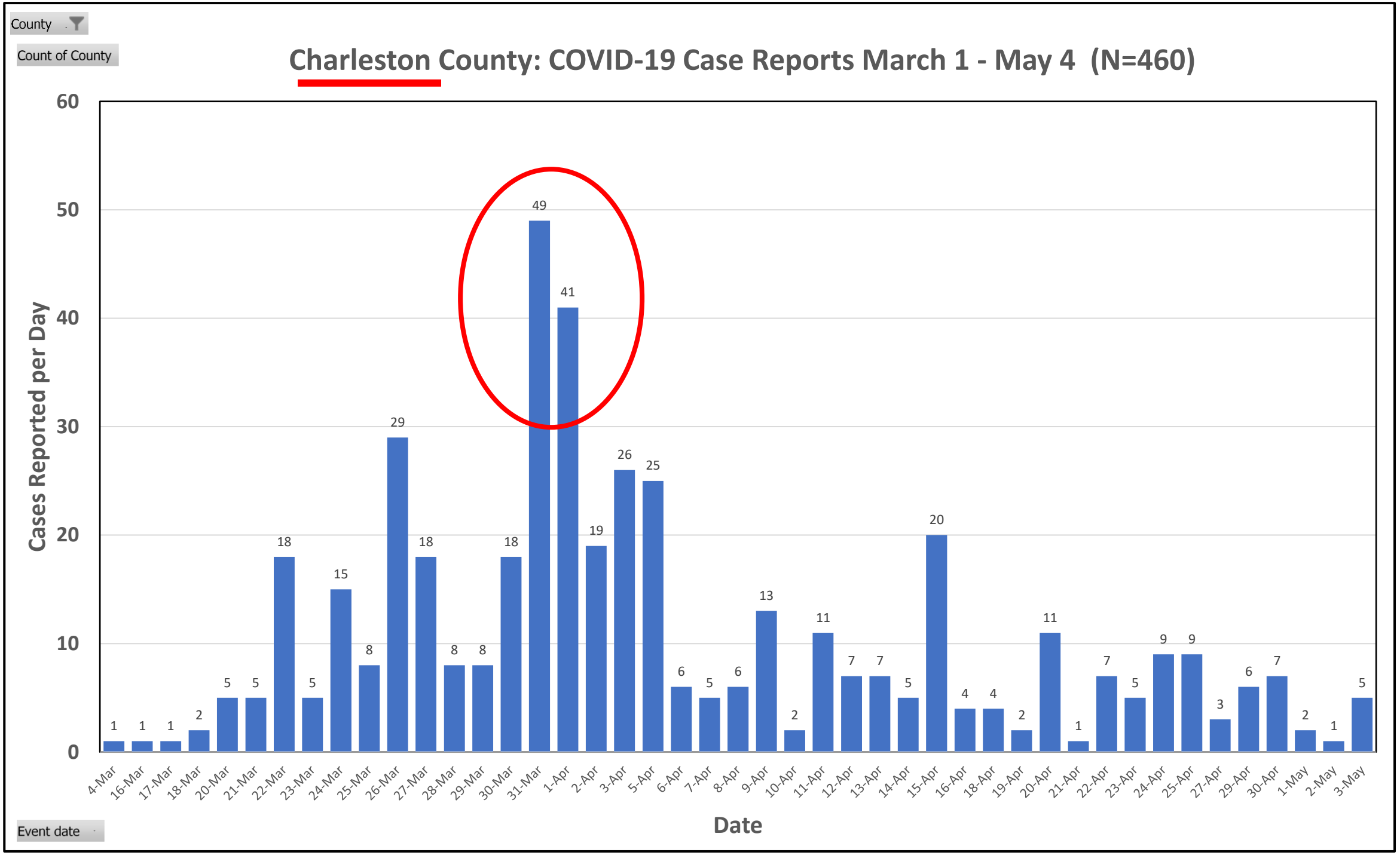
**This page lists the current health alerts of public health importance from DHEC.**

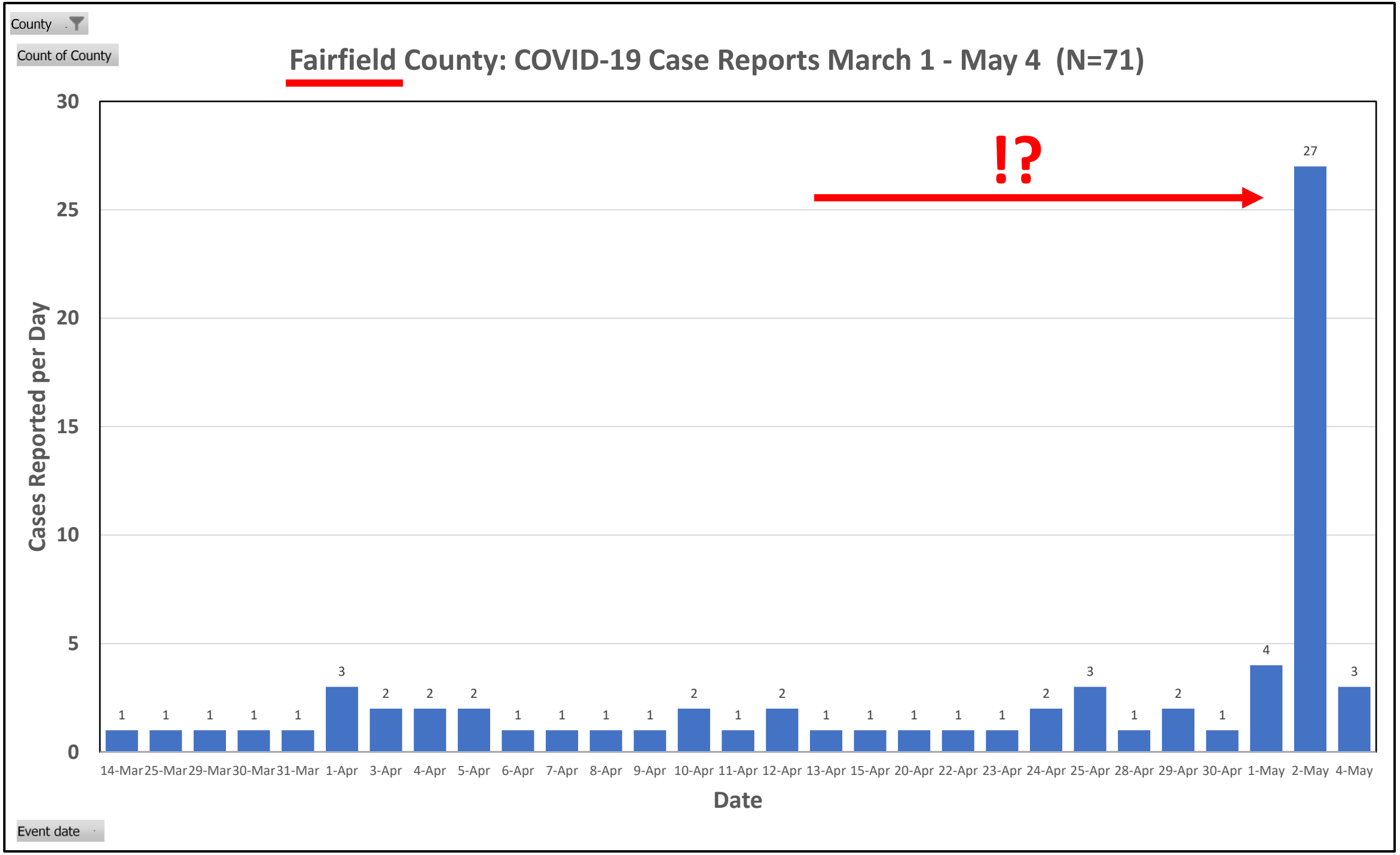
- **Health Alert:** conveys the highest level of importance; warrants immediate action or attention.
- **Health Advisory:** provides important information for a specific incident or situation; may not require immediate action.

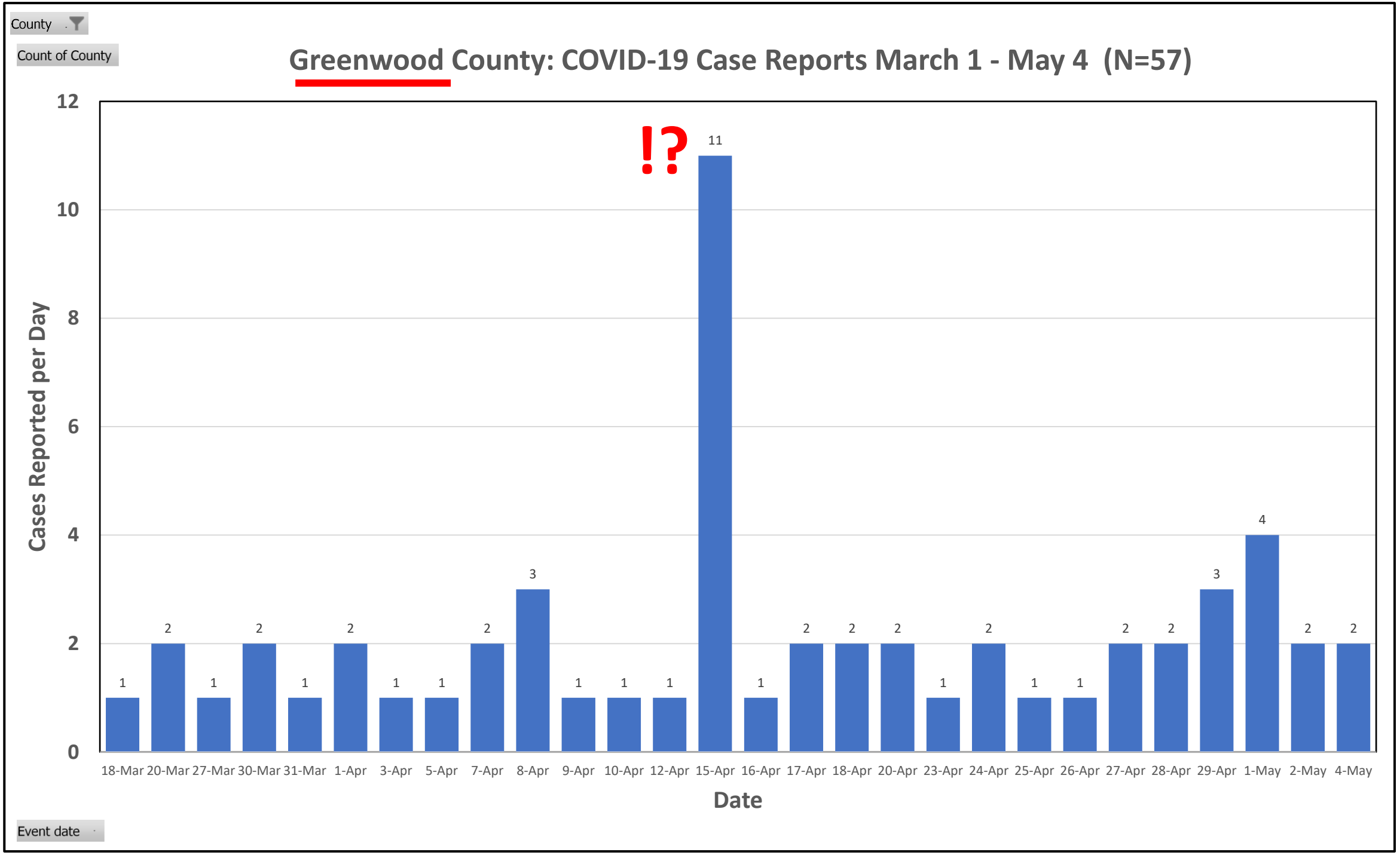
https://scdhec.gov/health-professionals/south-carolina-health-alert-network-han

| Date | Message Type | Subject |
| --- | --- | --- |
| 4/25/2020 | DHEC Health Update | COVID-19 Antibody Testing for Immunity & Return-to-Work Decisions |
| 4/22/2020 | DHEC Health Update | Updated reporting criteria for 2019 novel coronavirus disease (COVID-19) |
| 4/21/2020 | DHEC Health Update | COVID-19 Infection Control Guidance Update & N95 Optimization Strategies |
| 4/6/2020 | DHEC Health Update | Updated Guidance for COVID-19 case follow-up, guidelines for isolation and quarantine and cloth mask use |
| 3/29/2020 | DHEC Health Update | Testing Prioritization for Coronavirus Disease 2019 (COVID-19) Laboratory Testing and Case Reporting |

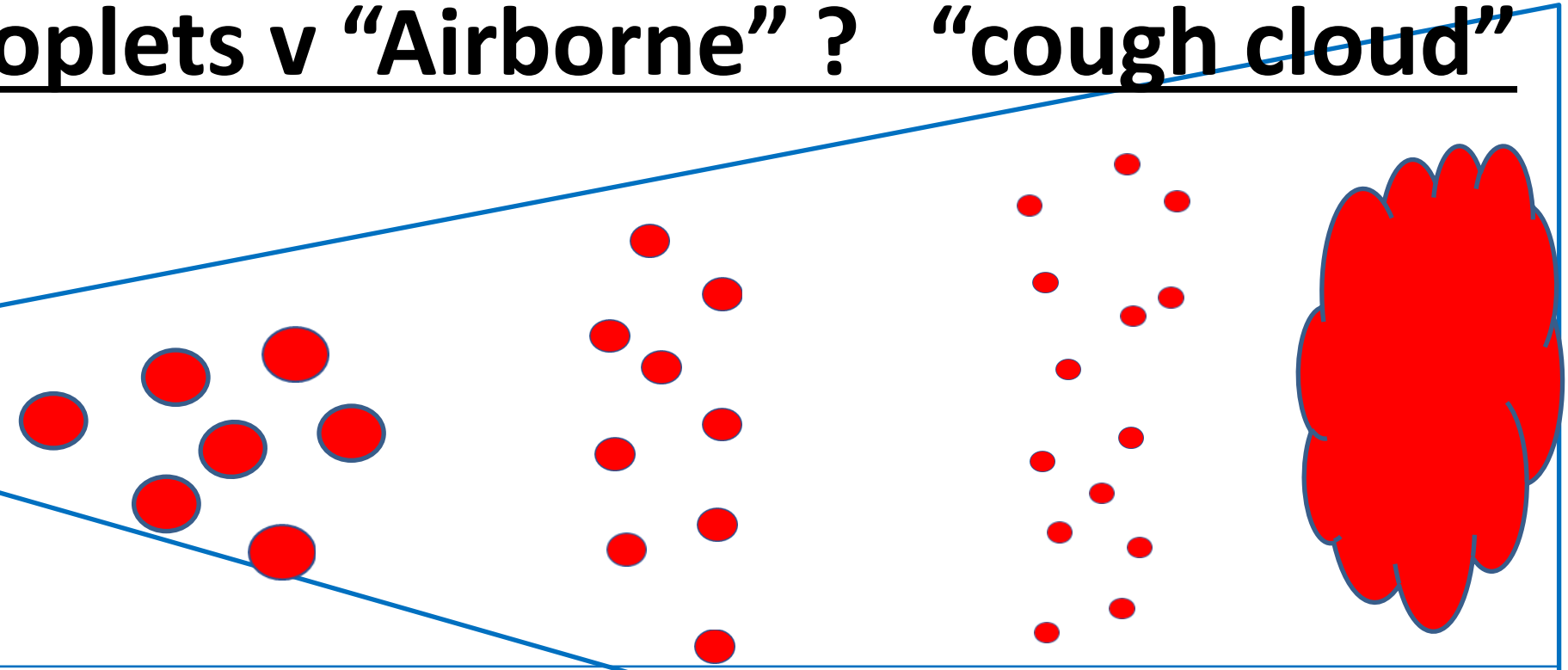

County
Count of County
Beaufort County: COVID-19 Case Reports March 1 - May 4 (N=270)
Cases Reported per Day
0
5
10
15
20
25
30
1 2 1 2 2 1 3 2 7 1 5 3 6 4 10 23 19 10 26 2 18 12 6 7 4 11 2 5 2 1 4 1 3 8 5 6 1 8 3 5 3 7 2 1 5 2 1 5 1 1
11-Mar 14-Mar 16-Mar 17-Mar 18-Mar 19-Mar 20-Mar 21-Mar 22-Mar 23-Mar 24-Mar 25-Mar 26-Mar 27-Mar 28-Mar 29-Mar 30-Mar 31-Mar 1-Apr 2-Apr 3-Apr 4-Apr 5-Apr 6-Apr 7-Apr 8-Apr 9-Apr 10-Apr 11-Apr 12-Apr 13-Apr 14-Apr 15-Apr 16-Apr 17-Apr 18-Apr 19-Apr 20-Apr 21-Apr 22-Apr 23-Apr 24-Apr 25-Apr 26-Apr 27-Apr 28-Apr 29-Apr 30-Apr 1-May 4-May
Date
Event date


County
Count of County
Charleston County: COVID-19 Case Reports March 1 - May 4 (N=460)
Cases Reported per Day
0
10
20
30
40
50
60
1 1 1 2 5 5 18 5 15 8 29 18 8 8 18 49 41 19 26 25 6 5 6 13 2 11 7 7 5 20 4 4 2 11 1 7 5 9 9 3 6 7 2 1 5
4-Mar 16-Mar 17-Mar 18-Mar 20-Mar 21-Mar 22-Mar 23-Mar 24-Mar 25-Mar 26-Mar 27-Mar 28-Mar 29-Mar 30-Mar 31-Mar 1-Apr 2-Apr 3-Apr 5-Apr 6-Apr 7-Apr 8-Apr 9-Apr 10-Apr 11-Apr 12-Apr 13-Apr 14-Apr 15-Apr 16-Apr 18-Apr 19-Apr 20-Apr 21-Apr 22-Apr 23-Apr 24-Apr 25-Apr 27-Apr 29-Apr 30-Apr 1-May 2-May 3-May
Date
Event date


County
Count of County
Fairfield County: COVID-19 Case Reports March 1 - May 4 (N=71)
!?
Cases Reported per Day
0
5
10
15
20
25
30
1
1
1
1
1
3
2
2
2
1
1
1
1
2
1
2
1
1
1
1
1
2
3
1
2
1
4
27
3
14-Mar
25-Mar
29-Mar
30-Mar
31-Mar
1-Apr
3-Apr
4-Apr
5-Apr
6-Apr
7-Apr
8-Apr
9-Apr
10-Apr
11-Apr
12-Apr
13-Apr
15-Apr
20-Apr
22-Apr
23-Apr
24-Apr
25-Apr
28-Apr
29-Apr
30-Apr
1-May
2-May
4-May
Date
Event date


County
Count of County
Greenwood County: COVID-19 Case Reports March 1 - May 4 (N=57)
!?
Cases Reported per Day
0
2
4
6
8
10
12
1
2
1
2
1
2
1
1
2
3
1
1
1
11
1
2
2
2
1
2
1
1
2
2
3
4
2
2
18-Mar
20-Mar
27-Mar
30-Mar
31-Mar
1-Apr
3-Apr
5-Apr
7-Apr
8-Apr
9-Apr
10-Apr
12-Apr
15-Apr
16-Apr
17-Apr
18-Apr
20-Apr
23-Apr
24-Apr
25-Apr
26-Apr
27-Apr
28-Apr
29-Apr
1-May
2-May
4-May
Date
Event date

# Respiratory Droplets v “Airborne” ? “cough cloud”



**Size of droplets (diameter)**

1-2 mm | 0.1-1mm | 0.1-.001mm | ~1-5 microns

**Distance of droplets from mouth**

~6 feet | 12-15 feet | ? | ??

**Duration of infectivity**

1-2 hours (more on some fomites) | 6-12 hours (? 1-2 days) | ??? | weeks++

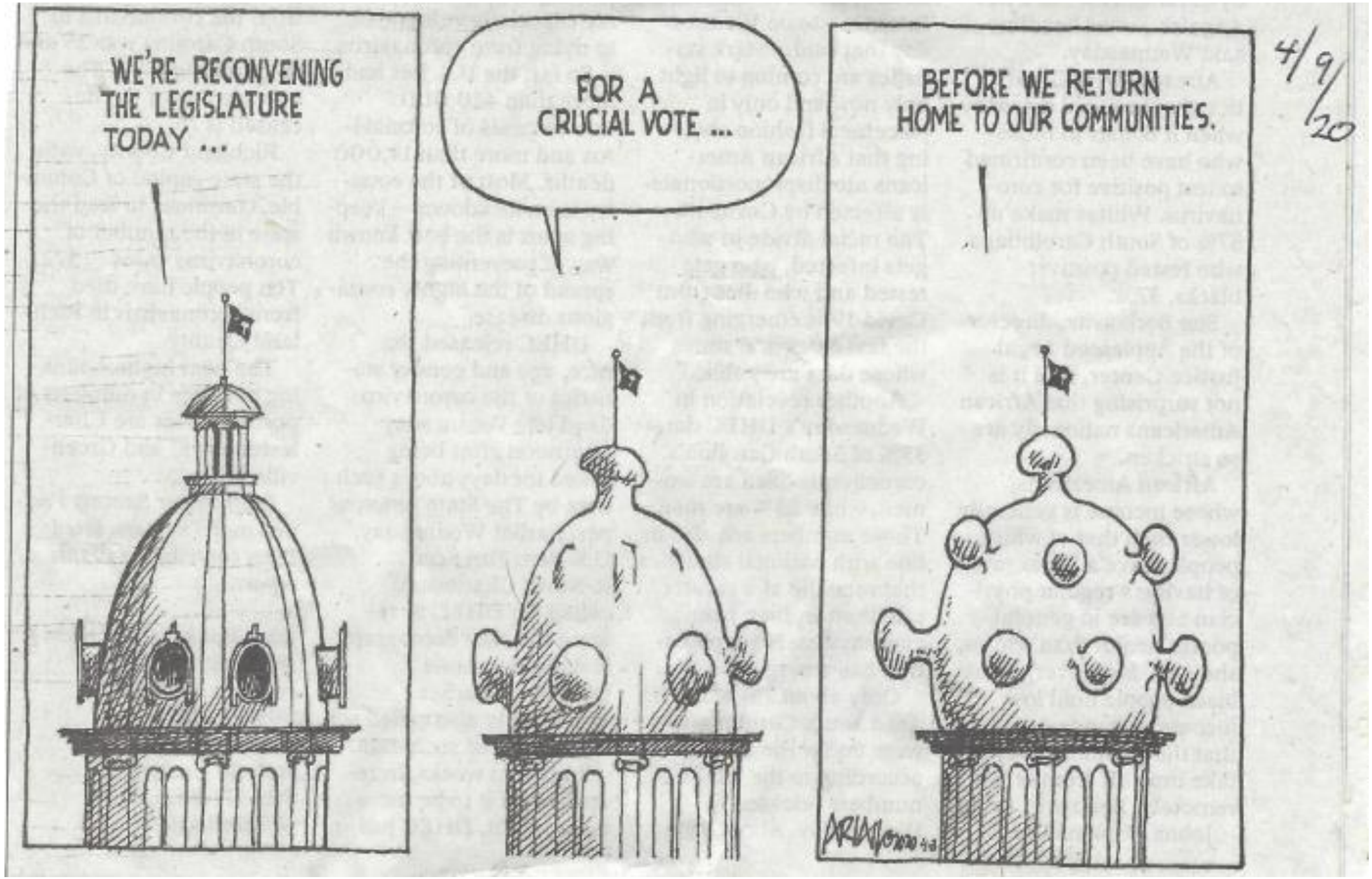
| Droplet size | Role in transmission | Transmission | Duration in the air |
|---|---|---|---|
| Larger | Likely **more** important | Typically 1-6 feet | Less time (fall to the ground) |
| Smallest | Likely **less** important | Can float farther | More time (may stay suspended) |

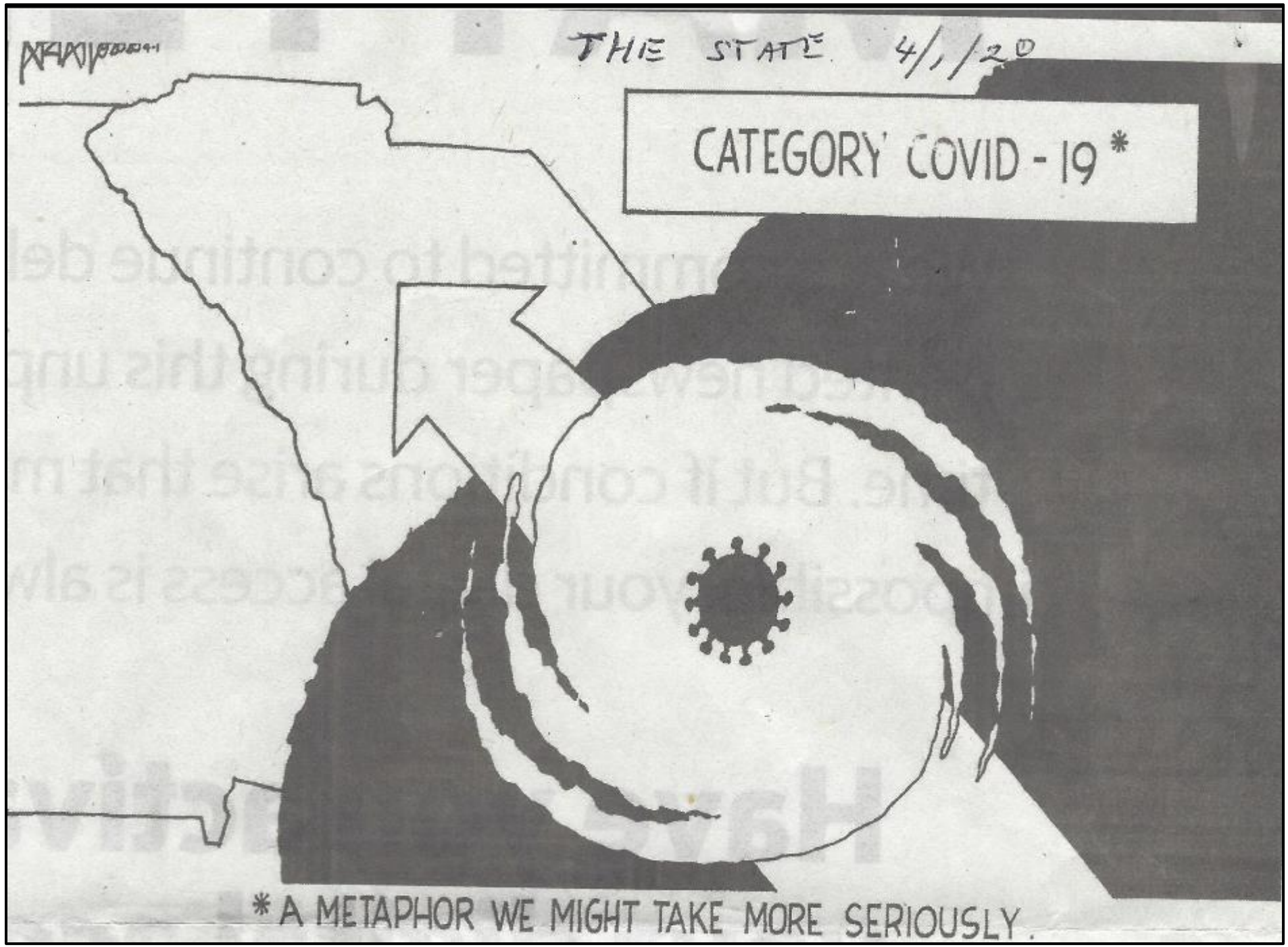
Eric Brenner MD

R. Ball, MD MPH FACP

**Worrisome morbidity and mortality statistics and epi-curves… ?**

**Wouldn’t a bit of COVID-19 humor be helpful ?**


WE'RE RECONVENING THE LEGISLATURE TODAY ...
FOR A CRUCIAL VOTE ...
BEFORE WE RETURN HOME TO OUR COMMUNITIES.
4/9/20


THE STATE 4/1/20
CATEGORY COVID - 19 *
* A METAPHOR WE MIGHT TAKE MORE SERIOUSLY.


TheState: May 1 2020

NewScientist



www.newscientist.com/article/2233085-could-the-new-coronavirus-really-kill-50-million-people-worldwide/

# Could the new coronavirus really kill 50 million people worldwide?

HEALTH | ANALYSIS 11 February 2020

If the spread of the new coronavirus isn't halted, it **could infect 60 per cent of the world's population and kill 1 in 100 of those infected – around 50 million people**.

This is what Gabriel Leung, chair of public health medicine at Hong Kong University, told *The Guardian* newspaper on 11 February. Is he right? The short answer is that no one knows, because there are many things we still don't know about the virus.

Newsweek

# TRUMP JR. SAYS DEMOCRATS 'HOPE' CORONAVIRUS 'KILLS MILLIONS' OF AMERICANS SO IT WILL END DONALD TRUMP'S WINNING STREAK: 'NEW LEVEL OF SICKNESS'

BY JORGE SOLIS ON 2/28/20 AT 2:39 PM EST

**Oops…. Is this what we want? Matters of public health becoming matters of partisan politics?**

www.newsweek.com/trump-jr-says-democrats-hope-coronavirus-kills-millions-americans-so-it-will-end-donald-trumps-1489761

HOLLYWOOD PANICS AS SCIENTISTS PREDICT:

# CHINA VIRUS WILL KILL 65 MILLION!

- How to SAVE YOUR FAMILY
- Plague plane lands in L.A.


HOLLYWOOD PANICS AS SCIENTISTS PREDICT:

CHINA VIRUS WILL KILL 65 MILLION!

How to SAVE YOUR FAMILY Plague plane lands in L.A.

FELICITY HUFFMAN

NATIONAL ENQUIRER

## WINDSORS FORCED TO PAY $1 TRILLION IN BACK TAXES

Harry & Meghan

'IT'S A TOTAL FINANCIAL GRENADE'

# BLOW LID OFF ROYALS' MONEY SECRETS

- Influence peddling
- Shady business deals
- Offshore bank accounts

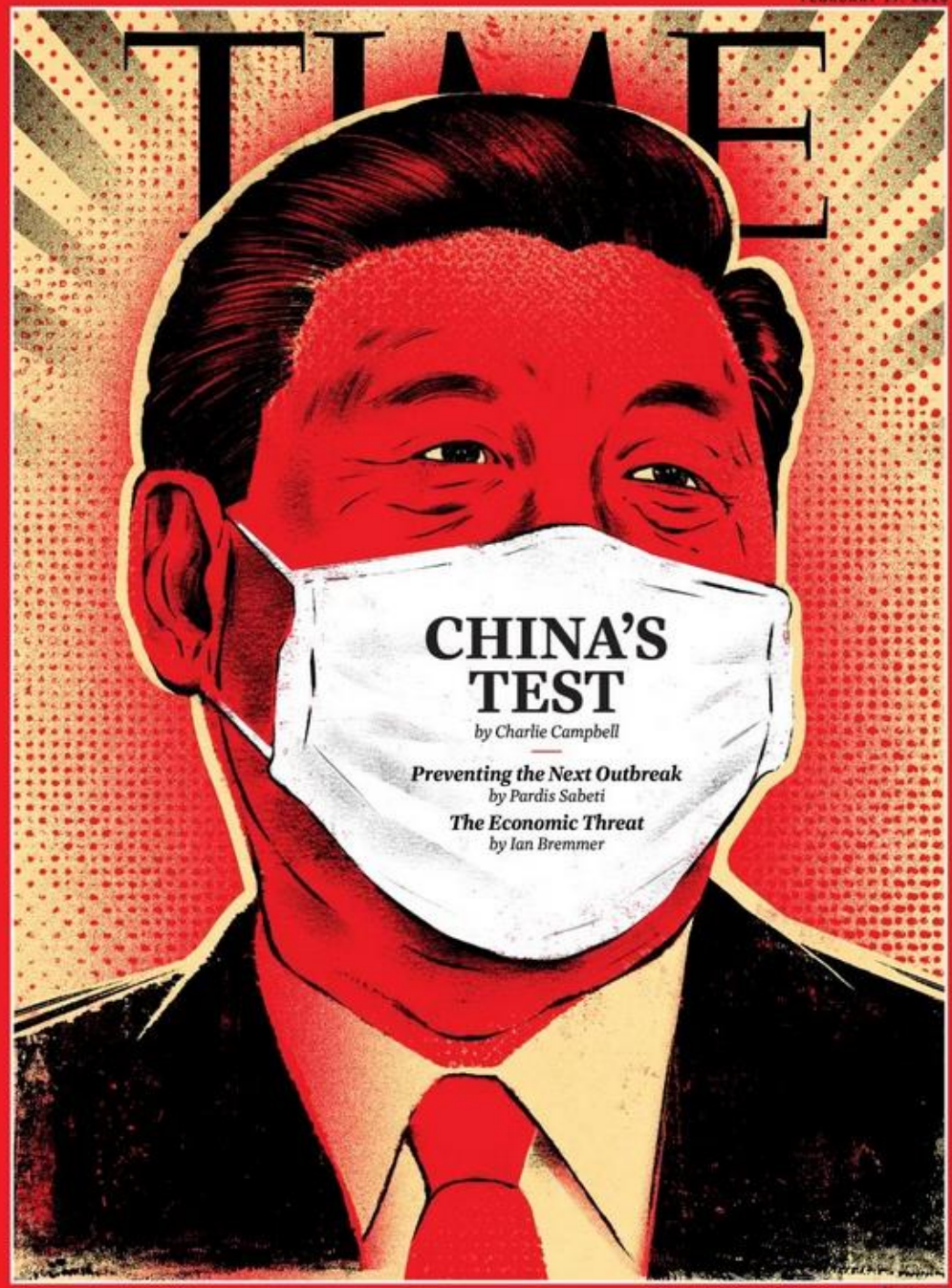
$4.99US $5.99CAN

FEBRUARY 17, 2020

0 73361 64736 8

FEBRUARY 17, 2020

TIME



# CHINA'S TEST

*by Charlie Campbell*

***Preventing the Next Outbreak***
*by Pardis Sabeti*

***The Economic Threat***
*by Ian Bremmer*

time.com

MARCH 30, 2020

TIME

# CORONAVIRUS

SPECIAL REPORT

**WHAT TO KNOW AND DO ABOUT THE GLOBAL PANDEMIC**

LESSONS FROM ASIA'S RESPONSE

**WHAT AMERICA MUST DO NOW**

THE HUMAN COST OF NOT WORKING

**HOW TO KEEP YOUR FAMILY SANE AT HOME**

LOVE IN THE TIME OF COVID-19

**A TEST FOR OUR SHARED HUMANITY**
*by* YUVAL NOAH HARARI

time.com

APRIL 20, 2020

SPECIAL REPORT: HEROES OF THE FRONT LINES

TIME

# 'WE MUST GET IT INTO OUR HEADS THAT OUR LIVES HAVE CHANGED'

FRANCESCO MENCHISE
**ANESTHESIOLOGIST. RAVENNA, ITALY**

time.com

MARCH 30, 2020

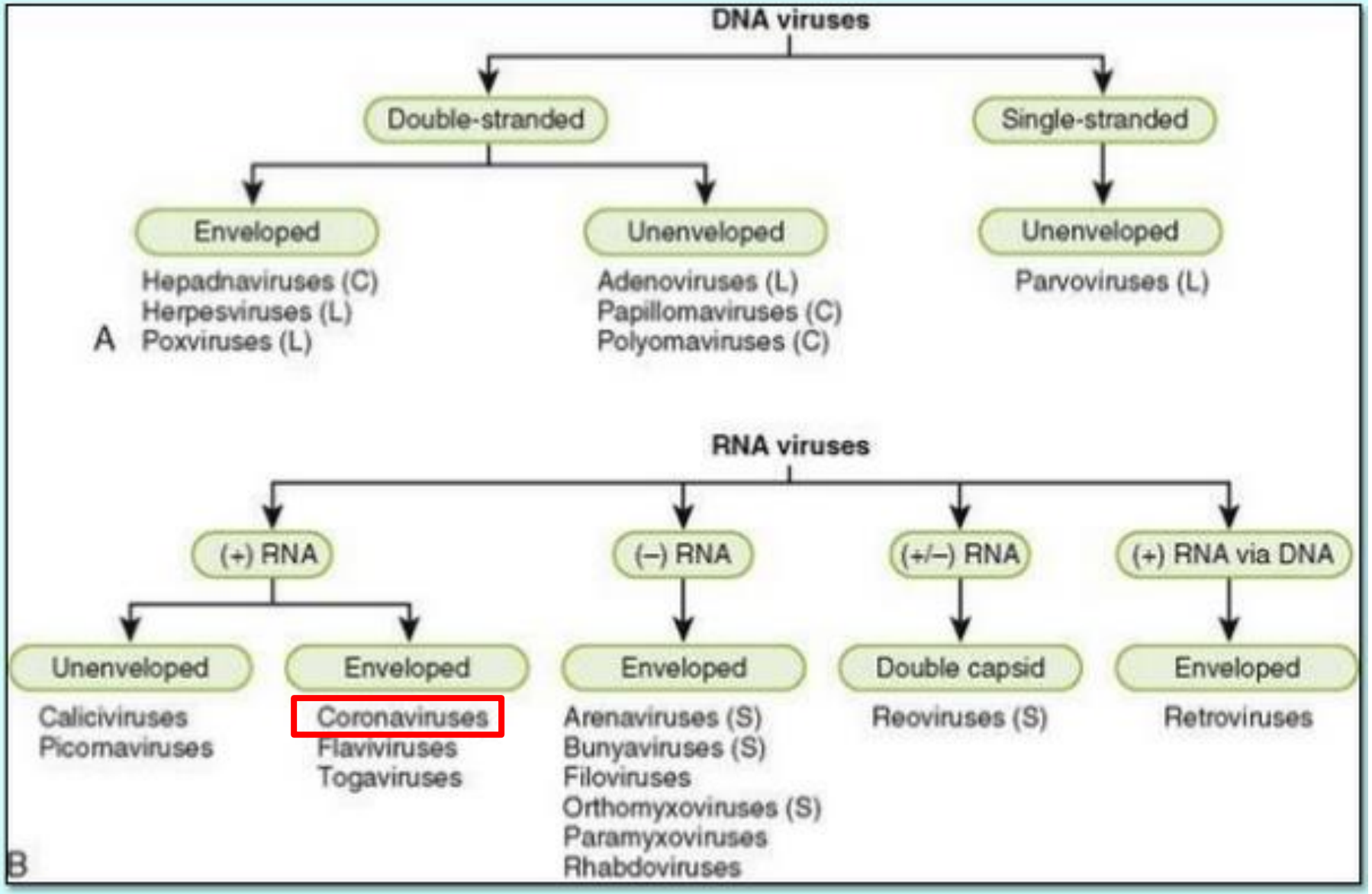
TIME


# WHEN THE WORLD STOPS

**WHAT TO KNOW AND DO ABOUT THE GLOBAL PANDEMIC**

**STAMFORD, CONN.**
*Cheryl Chutter, 51, in self-quarantine at home, after she was exposed to COVID-19 at a birthday party. She was notified that she tested positive on March 17*

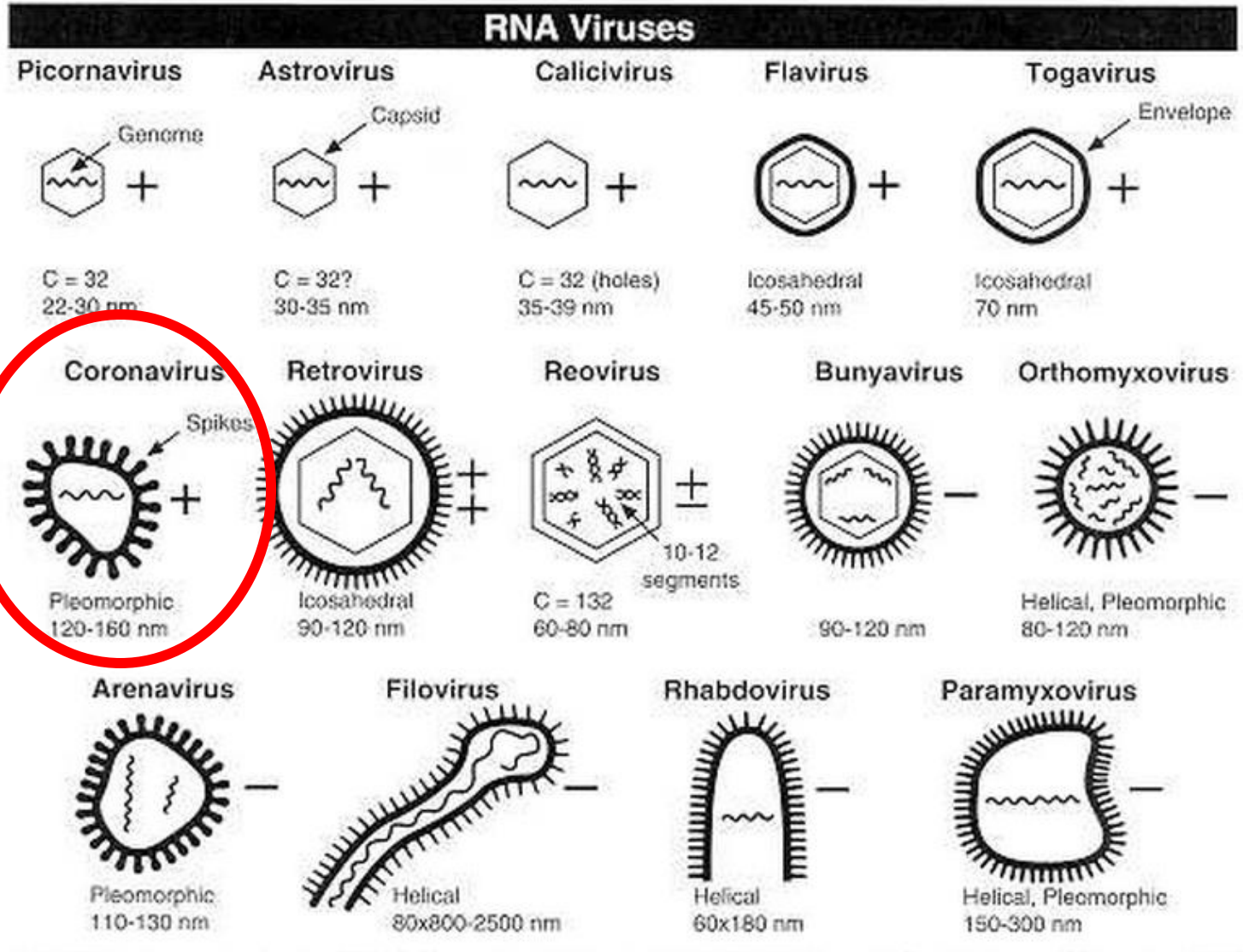
# Classification of viruses



# Classification of Viruses According to their Nucleic Acid Genome (and a few examples)

| Nucleic Acid Strands | Nucleic Acid Composition: DNA | Nucleic Acid Composition: RNA |
|---|---|---|
| Single | Parvovirus | Polio virus (+RNA)<br>Ebola virus (-RNA)<br>Corona virus (+RNA) |
| Double | Smallpox<br>Herpes viruses | Rotavirus |

# Morphology of RNA Viruses




www.vershatutorials.org/virus-classification-and-structure/

# Viruses Associated with the Common Cold

***(Adapted from Mandell 7th Ed. 2010)***

| Virus Group | Antigenic Types | Percentage of Cases |
|---|---|---|
| Rhinovirus | 100+ | 40-50 |
| Coronaviruses | 5 | 10-15 |
| Parainfluenza virus | 5 | 5 |
| RSV | 2 | 5 |
| Influenza (*) | 3 | 25-30 |
| Adenovirus | 51 | 5-10 |
| Metapneumovirus | 2 | 5 |

(*) Multiple subtypes

# SARS: Severe Acute Respiratory Syndrome

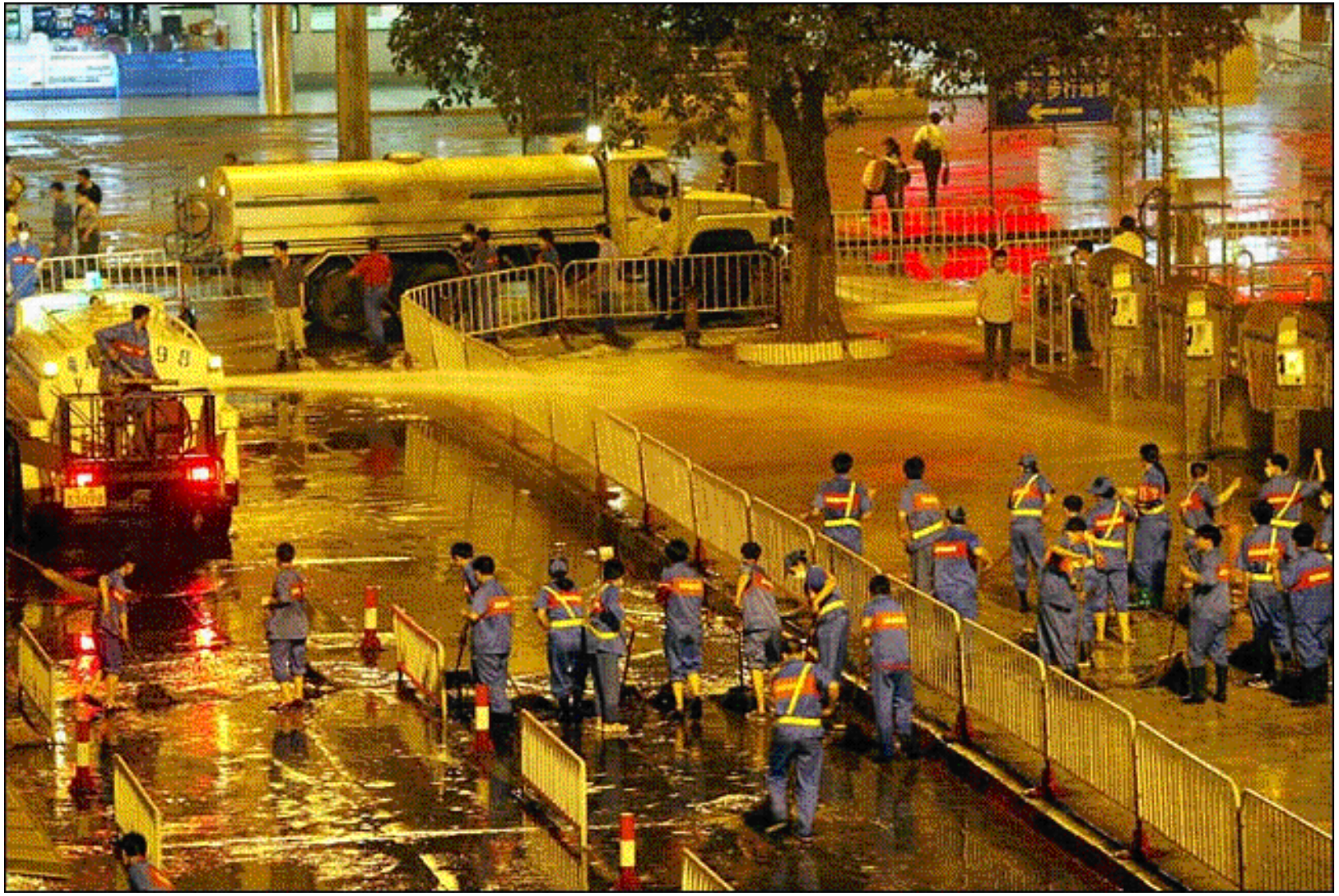
*(Wikipedia Notes)*

- On 16 November 2002, an outbreak of severe acute respiratory syndrome (SARS) began in China's Guangdong province, bordering Hong Kong. A farmer in the Shunde district of Foshan County was likely the first case of infection.

- The People's Republic of China notified the WHO about this outbreak on 10 February 2003, reporting 305 cases including 105 health-care workers and five deaths. Later it reported that the outbreak in Guangdong had peaked in mid-February 2003. However, this appears to have been false because subsequently 806 cases of infection and 34 deaths were reported.

- Early in the epidemic, the Chinese Government discouraged its press from reporting on SARS, delayed reporting to WHO, and initially did not provide information to Chinese outside Guangdong province, where the disease is believed to have originated.

- Also, a WHO team that travelled to Beijing was not allowed to visit Guangdong province for several weeks.This resulted in international criticism, which seems to have led to a change in Government policy in early April.



Raises question about which “preventive” or “control” measures really are or are not helpful or effective?

**Reuters:** **Workers disinfected the streets in Gangzhou after China mobilized squads to help prevent the spread of SARS. Around the world health experts have stepped up efforts to contain the disease.**


AP: In a ward at Sunnybrook and Womens Hospital in Toronto, a nurse waits outside the door of a patient diagnosed with the illness.

Agence France-Presse- Journalists looked through a window at SARS patients in an isolation ward of a hospital in Beijing.

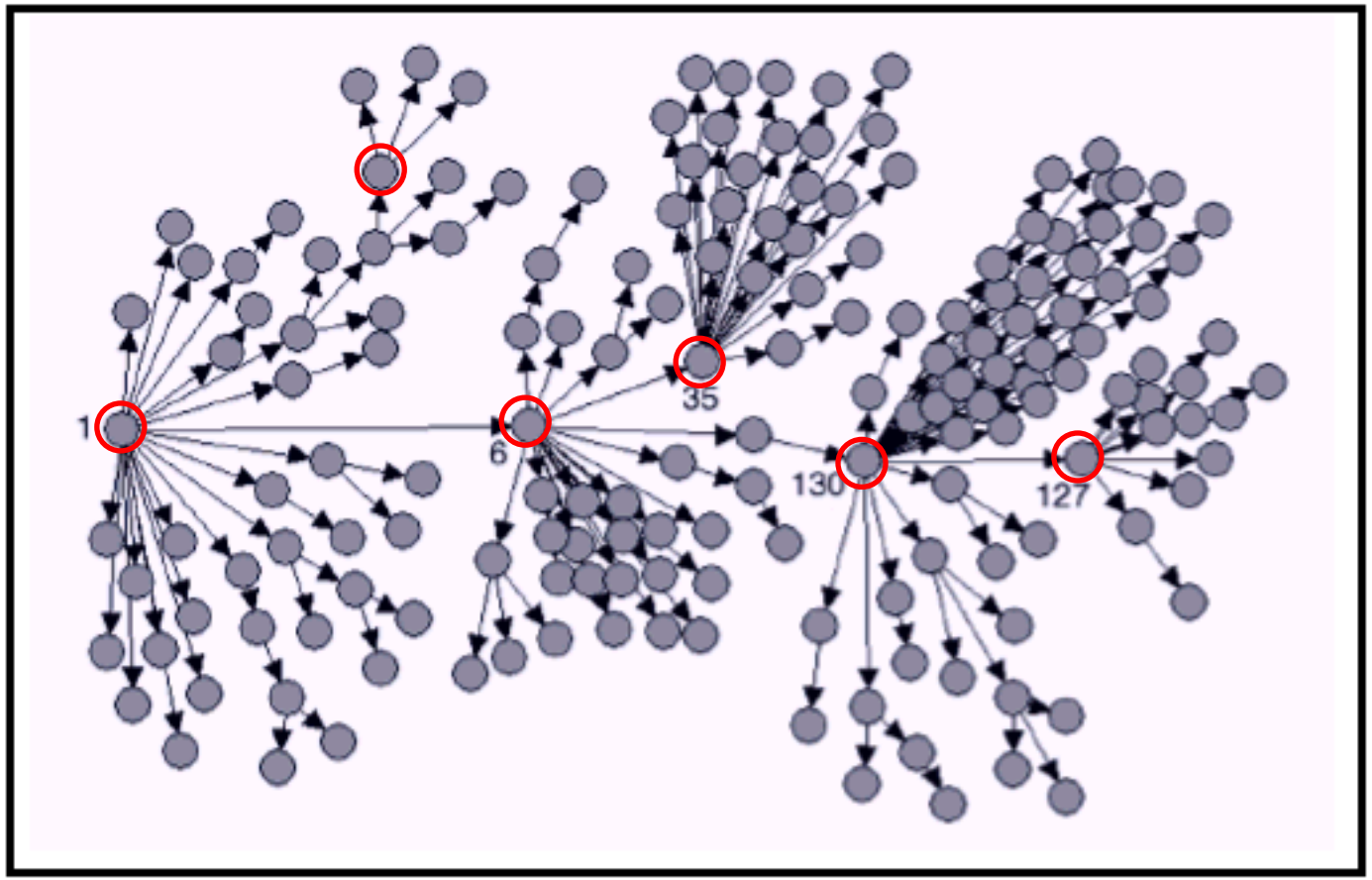
Paul Hosefros/The New York Times Dr. Anthony S. Fauci, director of the National Institute of Allergy and Infectious Diseases at the National Institutes of Health left, and Dr. Julie L. Gerberding, director of Centers for Disease Control and Prevention, commented on current conditions at a congressional hearing. On the screen, rear, is Dr. David Heymann of the World Health Organization.


Associated Press: Fear of the disease (SARS) kept jewelers from Hong Kong, Singapore and China from filling their showcases at a watch and jewelry fair in Zurich, Switzerland, on April 3.

Reuters:  A Taiwanese woman put a mask on her kitten to protect her against SARS. Taiwan's health department has banned all people with SARS from entering or leaving the island.

AP-- Mannequins in a clothing shop display in Hong Kong.

**FIGURE 2. Probable cases of severe acute respiratory syndrome, by reported source of infection* — Singapore, February 25–April 30, 2003**




* Patient 1 represents Case 1; Patient 6, Case 2; Patient 35, Case 3; Patient 130, Case 4; and Patient 127, Case 5. Excludes 22 cases with either no or poorly defined direct contacts or who were cases translocated to Singapore and the seven contacts of one of these cases.

*Reference*: Bogatti SP. Netdraw 1.0 Network Visualization Software. Harvard, Massachusetts: Analytic Technologies, 2002.

**MMWR May 9, 2003 / Vol. 52 / No. 18 - I**

**… relates to the notion of "super-spreaders"…. i.e. cases who account for a disproportionately large amount of pathogen transmission in certain contexts.**

# Prevalence of IgG antibody to SARS-CoV in Animal Traders - Guangdong Province, China 2003

## MMWR, October 17, 2003 / Vol 52 / No. 41 - I

**TABLE 1. Prevalence of IgG antibody to SARS-associated coronavirus in animal traders and persons in three control groups — Guangdong Province, China, 2003**

| Group | No. tested | Testing positive | |
|---|---|---|---|
| | | No. | (%) |
| Animal traders | 508 | 66 | (13.0)* |
| Hospital workers | 137 | 4 | (2.9) |
| Guangdong CDC† workers | 63 | 1 | (1.6) |
| Healthy adults at clinic | 84 | 1 | (1.2) |

* Chi square = 26.1; p<0.01, animal traders versus other groups.
† Center for Disease Control and Prevention.

# MMWR, October 17, 2003 / Vol 52 / No. 41 - II

**TABLE 2. Prevalence of IgG antibody to SARS-associated coronavirus in selected animal traders, by primary animal traded — Guangdong Province, China, 2003**

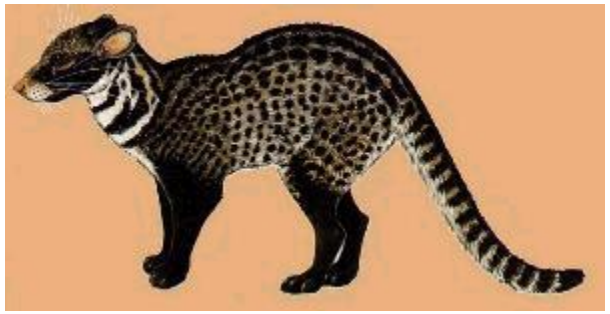
| Primary animal traded* | No. traders | Testing positive No. | Testing positive (%) | Relative risk | (95% CI†) |
|---|---|---|---|---|---|
| Masked palm civet | 22 | 16 | (72.7) | 7.9 | (5.0–12.6) |
| Wild boar | 28 | 16 | (57.1) | 6.2 | (3.8–10.3) |
| Muntjac deer | 16 | 9 | (56.3) | 6.1 | (3.4–10.9) |
| Hare | 13 | 6 | (46.2) | 5.0 | (2.5–10.2) |
| Pheasant | 9 | 3 | (33.3) | 4.9 | (0.7–24.8)§ |
| Cat | 43 | 8 | (18.6) | 2.0 | (1.0–4.2) |
| Other fowl | 25 | 3 | (12.0) | 1.3 | (0.2–5.0)§ |
| Snake | 250 | 23 | (9.2) | Reference group | |

* Categories not mutually exclusive, except for snakes.
† Confidence interval.
§ Odds ratio and 95% CI by Fisher exact test.

**No seropositive subjects had had SARS or atypical pneumonia!!**

# Some of the many civet flavors

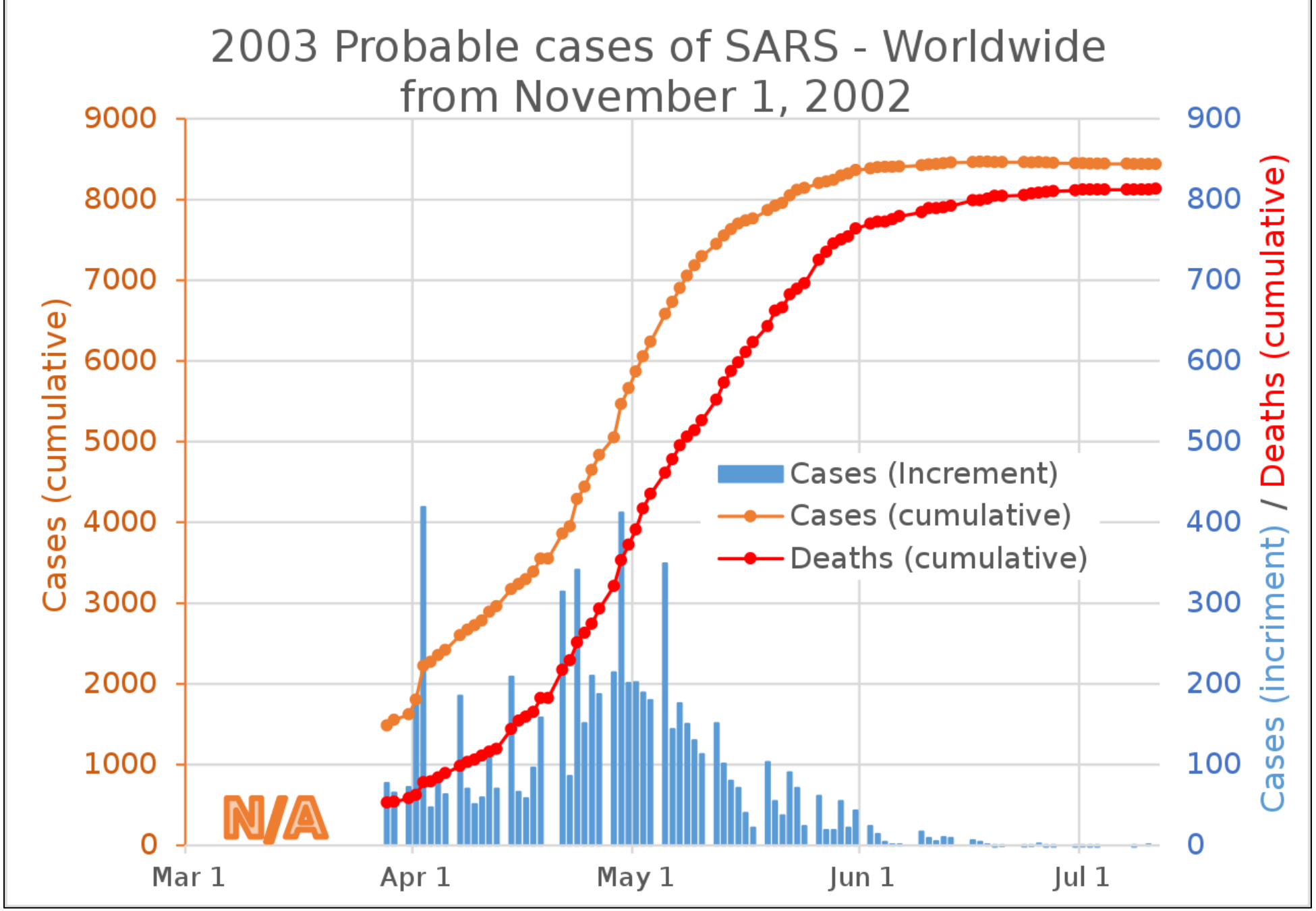
Masked palm civet



Malay civet or Tangalung

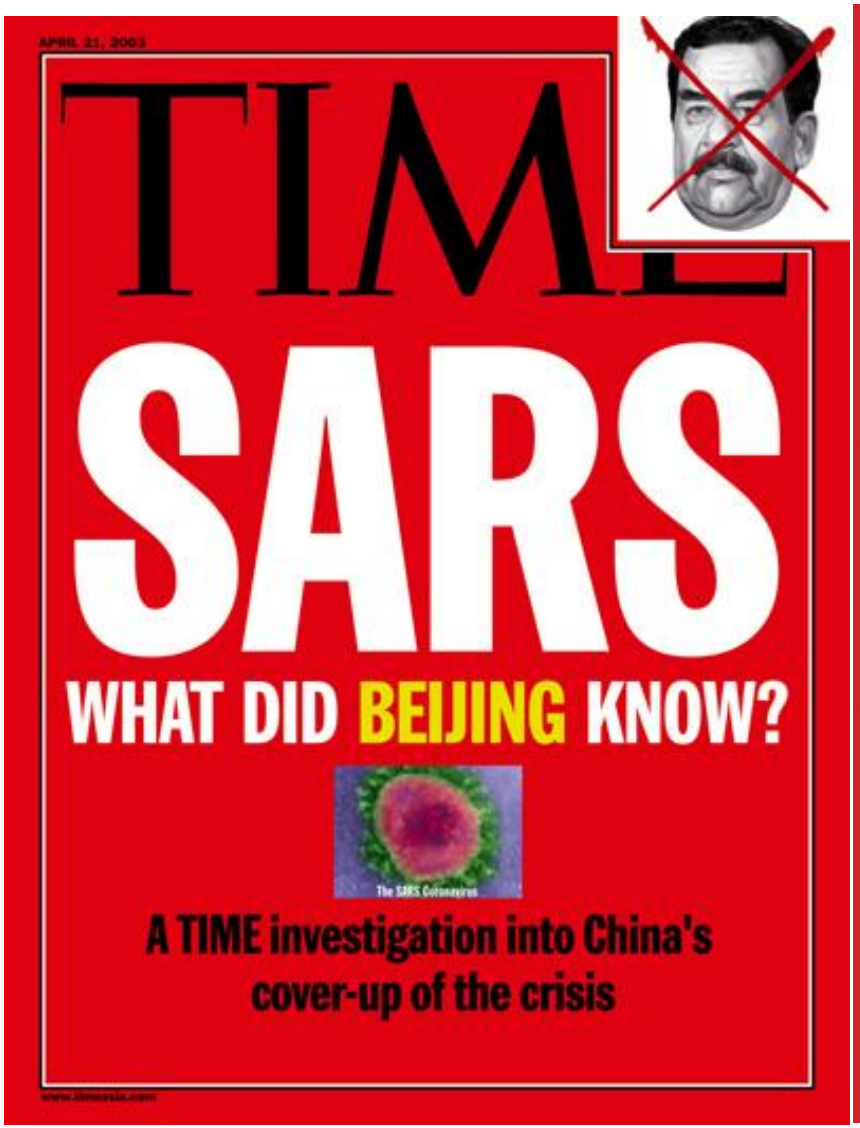
Banded linsang civet

Banded palm civet

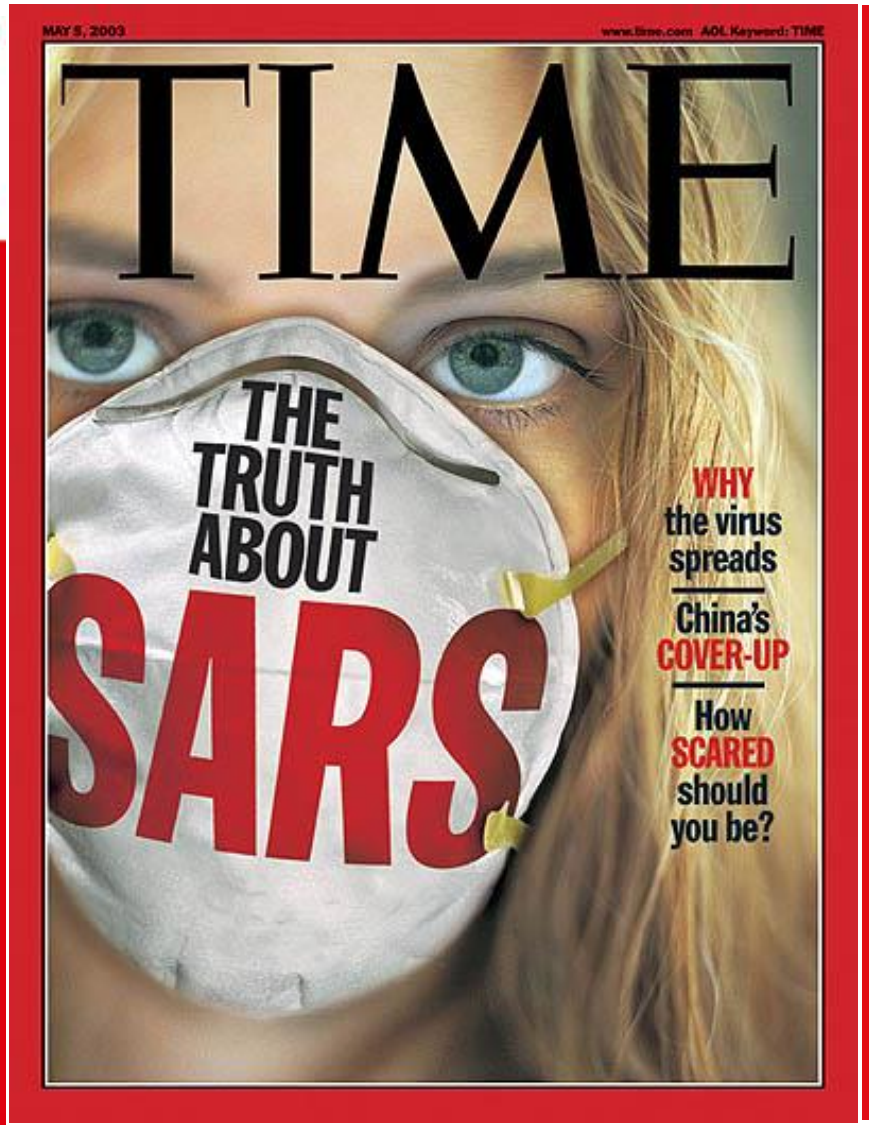



**So… SARS Coronavirus transmission halted by mid-June in 2003.**

**Will COVID-19 also vanish by summer?**




April 21, 2003




April 21, 2003


May 5, 2003

## And what about the MERS Coronavirus!?

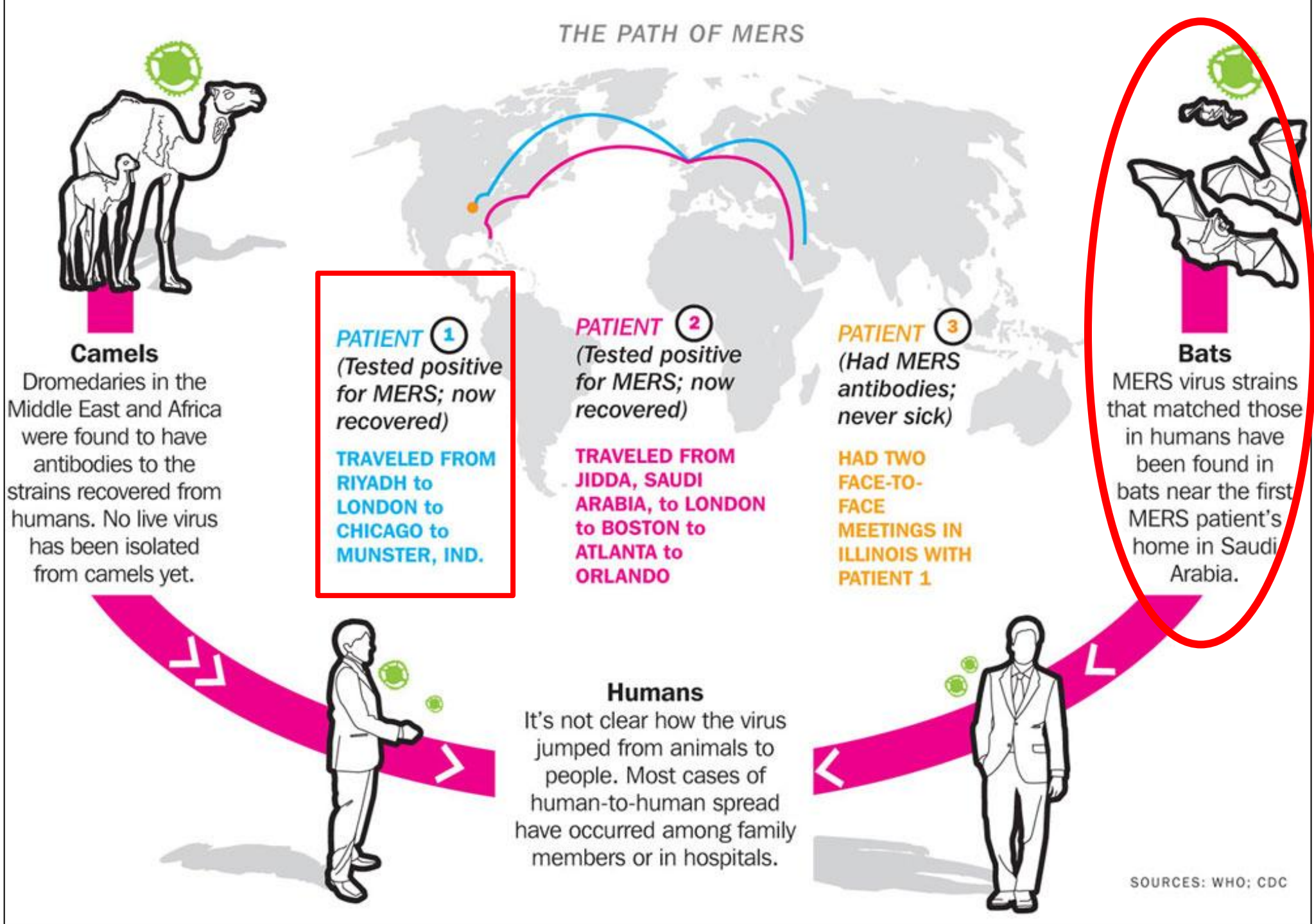
**Did it spread from the “Middle-East” to the USA?**

# Since MERS was Identified in 2012…
# Where have Cases been Seen?

**Countries in or near the Arabian Peninsula that have reported MERS cases**: Bahrain, Iran, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, United Arab Emirates (UAE), and Yemen.

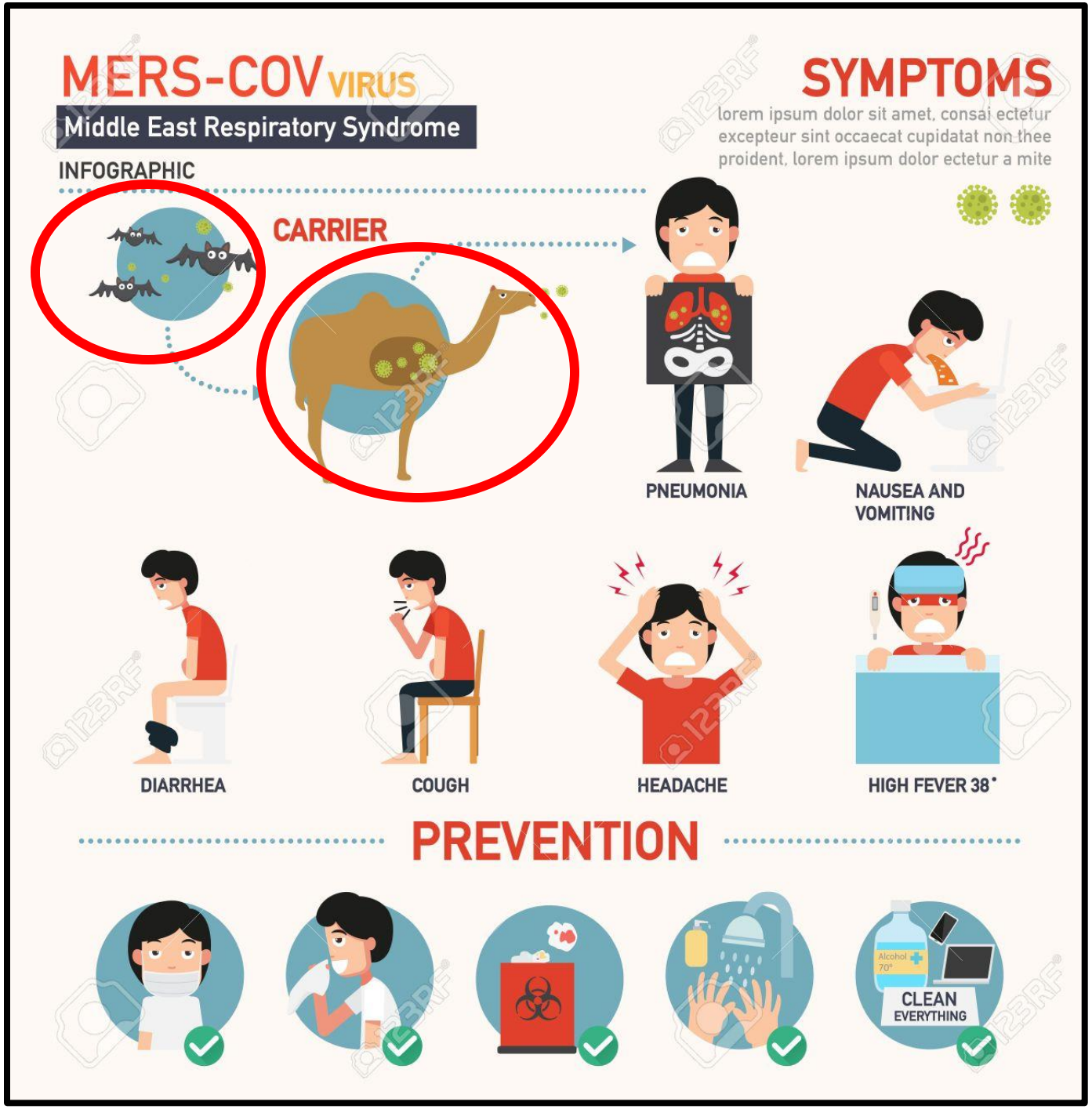
**Countries outside of the Arabian Peninsula with travel-associated MERS cases**: Algeria, Austria, China, Egypt, France, Germany, Greece, Italy, Malaysia, Netherlands, Philippines, Republic of Korea, Thailand, Tunisia, Turkey, United Kingdom (UK), and **United States of America (USA)**

# The Path of Two MERS Cases to the United States




https://time.com/97732/what-is-mers-what-you-need-to-know/

# Example of a MERS-COV Infographic




https://www.123rf.com/photo_43129263_stock-vector-mers-cov-middle-east-respiratory-syndrome-coronavirus-infographic-vector-illustration-.html


**Time Magazine Cover:**
**October 13 , 2014**


CEDEAO
ECOWAS
CAP VERT
SENEGAL
GAMBIE
GUINEE BISSAU
GUINEE
SIERRA LEONNE
LIBERIA
MALI
NIGER
BURKINA FASO
COTE D'IVOIRE
GHANA
BENIN
NIGERIA
TOGO

# 36 Years of Ebola in the World!

| Sum of Cases | Colu | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Row Labels | 1976 | 1977 | 1979 | 1994 | 1995 | 1996 | 2000 | 2001 | 2002 | 2003 | 2004 | 2007 | 2008 | 2011 | 2012 | 2014 | Total |
| DRC | 318 | 1 | | | 315 | | | | | | | 264 | 32 | | 36 | | 966 |
| Gabon | | | | 52 | | 97 | | 65 | | | | | | | | | 214 |
| Guinea, Sierra Leone, Liberia | | | | | | | | | | | | | | | | 441 | 441 |
| Ivory Coast | | | | 1 | | | | | | | | | | | | | 1 |
| Rep of Congo | | | | | | | | 57 | 143 | | | | | | | | 200 |
| S Sudan | 284 | | 34 | | | | | | | 35 | 17 | | | | | | 370 |
| South Africa | | | | | | 2 | | | | | | | | | | | 2 |
| Uganda | | | | | | | 425 | | | | | 149 | | 1 | 17 | | 592 |
| **Total** | **602** | **1** | **34** | **53** | **315** | **99** | **425** | **122** | **143** | **35** | **17** | **413** | **32** | **1** | **53** | **441** | **2786** |

**Ebola: 2786 cases over the past 38 years => ~73 cases per year!**

**Tuberculosis: 8 million TB cases & ~1,000,000 deaths/year**
**21,900 cases & ~2,700 deaths/day**
**900 cases & ~1,000 deaths/hour**

Based on data from:
**http**://www.cdc.gov/vhf/ebola/resources/distribution-map.html

The State
COLUMBIA • SOUTH CAROLINA



# U.S. doctor with Ebola in Atlanta for treatment

## N.C. woman expected soon at Emory Hospital

By RAY HENRY
*The Associated Press*

**ATLANTA** — An American doctor infected with the Ebola virus in Africa arrived in Atlanta for treatment Saturday, landing in a specially equipped plane at a military base and then whisked away to one of the most sophisticated hospital isolation units in the country, officials say.

It marks the first time anyone infected with Ebola, considered one of the world's deadliest diseases, is believed to have been brought into the country for treatment. A second American aid worker infected with the virus was expected to arrive at

THE ASSOCIATED PRESS

**Dr. Kent Brantly, who contracted the Ebola virus while working in Liberia, is helped from an ambulance at Emory University Hospital in Atlanta.**

An ambulance from Atlanta's Grady Memorial Hospi-

Charlotte, worked for N.C.-based Sama

air."

with fever,

# Ebola Cases Treated to Date in the USA

(Some details "unofficial" …. just gathered from news media and web sites)

| N | Name | Profession | Citizen | Sex | Infected in | Onset | Arr. USA | Hospital | Admit | Discharge | LOS | Outcome |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Kent Brantley | Physician | USA | M | Liberia | 27-Jul-14 | 2-Aug-14 | Emory | 2-Aug-14 | 21-Aug-14 | 19 | Recovered |
| 2 | Nancy Writebol | Missionary | USA | F | Liberia | 27-Jul-14 | 5-Aug-14 | Emory | 5-Aug-14 | 19-Aug-14 | 14 | Recovered |
| 3 | Rick Sacra | Physician | USA | M | Liberia | 3-Sep-14 | 5-Sep-14 | Nebraska | 5-Sep-14 | 25-Sep-14 | 20 | Recovered |
| 4 | Unk | Physician | USA | Unk | Sierra Leone | Unk | 9-Sep-14 | Emory | 9-Sep-14 | 19-Oct-14 | 40 | Recovered |
| 5 | Eric Duncan | Visitor | Liberia | M | Liberia | 24-Sep-14 | 20-Sep-14 | Dallas | 28-Sep-14 | 8-Oct-14 | 10 | Died |
| 6 | Ashoka Mukpo | NBC Camera | USA | M | Liberia | 2-Oct-14 | 6-Oct-14 | Nebraska | 6-Oct-14 | 25-Oct-15 | 19 | Recovered |
| 7 | Nina Pham | Nurse | USA | F | USA | 12-Oct-14 | --- | NIH (MD) | 12-Oct-14 | 24-Oct-15 | 12 | Recovered |
| 8 | Amber Vinson | Nurse | USA | F | USA | 14-Oct-14 | --- | Emory | 14-Oct-14 | 22-Oct-15 | 8 | Recovered |
| 9 | Craig Spencer | Physician | USA | M | Guinea | 23-Oct-14 | 17-Oct-14 | Bellevue | 23-Oct-14 | 11-Nov-14 | 19 | Recovered |
| 10 | Martin Salia | Physician | Sierra Leone | M | Sierra Leone | 6-Nov-14 | 15-Nov-14 | Nebraska | 15-Nov-14 | 17-Nov-14 | 2 | Died |
| 11 | Unk | HCW (PIH) | USA | M | Sierra Leone | | | NIH (MD) | 13-Mar-15 | | | |

**3 cases for whom results of extensive community contact investigation have been published in the MMWR**

**CFR = 2/10 = 20%**

**Avg LOS for survivors: 19 days (8-40)**

**September 16, 2014**

http://www.washingtonpost.com/news/to-your-health/wp/2014/09/16/ebola-survivor-kent-brantly-met-with-president-obama-in-the-oval-office/

# Ebola survivor Kent Brantly met with President Obama in the Oval Office

By Abby Phillip September 16 Follow @abbydphillip

(Pete Souza/The White House)

Most Read N

1 Why Reddit can't
Jennifer Lawren
Rihanna's leake

2 Apple's dangero
The strongest c


3 days ago


3 days ago


3 days ago

# And on now to:

- ***Coronaviruses:*** *(the name of* ***a whole family of viruses****)*
- ***SARS-CoV-2*** *(the name of* ***the virus in question****)*
- ***COVID-19*** *(the name of* ***the disease it causes****)*


Asia
Kilometers
0 400 800 1200 1600
0 250 500 750 1000
Arctic Ocean
Norwegian Sea
Barents Sea
Kara Sea
Laptev Sea
East Siberian Sea
Chukchi Sea
Bering Sea
Russia
Sea of Okhotsk
Norway
Sweden
Finland
Poland
Belarus
Ukraine
Romania
Black Sea
Turkey
Kazakhstan
Mongolia
China
Uzbekistan
Turkmenistan
Kyrgyzstan
Tajikistan
Syria
Iraq
Iran
Afghanistan
Pakistan
Saudi Arabia
Red Sea
Sudan
Egypt
Eritrea
Yemen
Oman
Gulf of Aden
Ethiopia
Somalia
Kenya
Arabian Sea
India
Nepal
Bhutan
Bangladesh
Myanmar
Sri Lanka
Maldives
Bay of Bengal
Thailand
Cambodia
Vietnam
Gulf of Thailand
Andaman Sea
South China Sea
Philippine Sea
Philippines
Malaysia
Singapore
Indonesia
Celebes Sea
Banda Sea
Arafura Sea
Java Sea
Timor
Indian Ocean
North Korea
South Korea
Yellow Sea
East China Sea
Sea of Japan (East Sea)
Japan
Pacific Ocean
Taiwan


XINJIANG
HEILONGJIANG
INNER MONGOLIA
JILIN
LIAONING
Beijing
TIANJIN
HEIBEI
NINGXIA
SHANXI
SHANDONG
QINGHAI
GANSU
SHAANXI
HEINAN
JIANGSU
TIBET
SICHUAN
SHANGHAI
HUBEI
ZHEJIANG
Shanghai
JIANGXI
HUNAN
Hubei Province
GUIZHOU
FUJIAN
YUNNAN
TAIWAN
GUANGXI
GUANGDONG
HONGKONG
MACAU
HongKong
HAINAN

# *Coronavirus Pummels Wuhan, a City Short of Supplies and Overwhelmed*

NYT Feb 2, 2020

It is nearly impossible to get the care they need to treat, or even diagnose, the coronavirus, say residents at the crisis' center.

# *China Pledged to Build a New Hospital in 10 Days. It's Close.*

NYT Feb 3, 2020

State news outlets reported that the 1,000-bed facility would accept patients from Monday even as construction workers raced to complete it.

Hospital construction in Wuhan on Jan. 24. Agence France-Presse — Getty Images

Hospital Construction
Wuhan Jan 24, 2020

# *China Pledged to Build a New Hospital in 10 Days. It's Close.*

NYT Feb 3, 2020

State news outlets reported that the 1,000-bed facility would accept patients from Monday even as construction workers raced to complete it.

Hospital Construction
Wuhan February 2, 2020

ScienceTimes
The New York Times



NYT 2/4/2020


DENIS BALIBOUSE/REUTERS

EPA, VIA SHUTTERSTOCK

EZRA ACAYAN/GETTY IMAGES

# A Deadly New Contagion

By RONI CARYN RABIN

A respiratory virus that is so new it does not yet have a name has spread quickly from Wuhan, China, leaving many experts to fear what may become a pandemic of pneumonialike illness. ¶ So far, the virus — a coronavirus whose scientific designation is 2019-nCoV — has spread to at least 23 countries, infecting more than 17,000 people and killing at least 360. Most of the cases, so far, have been in China. ¶ But the Wuhan coronavirus may be highly transmissible, as contagious as seasonal influenza, and the death rate is still unknown.

The World Health Organization has estimated that one in every 50 infected individuals will die, and medical reports suggest the new virus can be transmitted even before an infected individual displays symptoms — a combination of factors that, if accurate, will make it nearly impossible to contain.

Last week the W.H.O. declared a global public health emergency, and made plans to dispatch experts to China to help with the investigation and containment.

The United States also declared a public health emergency and has offered assistance, and is barring entry by most foreign citizens who have visited China recently. American travelers returning from trips in the Wuhan/Hubei region will be quarantined for two weeks.

The outbreak appears to have begun at a seafood and meat market in Wuhan. Since then it has spread to other parts of China, and turned up in other countries in Asia and in Australia, Europe and North America.

Chinese authorities cordoned off Wuhan

CONTINUED ON PAGE D5

The coronavirus, center, that began in Wuhan, China, was declared a global public health emergency by the World Health Organization last week. Tedros Adhanom Ghebreyesus, left, is the director-general of the W.H.O. Above right, Filipinos hoping to buy face masks crowded outside a medical supply shop in Manila on Friday.

# Fears About Coronavirus Rattle World's Markets

NYT 2-25-20

## Stocks Dive as Investors Foresee an Epidemic's Drag on Growth

*This article is by* ***Matt Phillips, Jason Horowitz*** *and* ***Choe Sang-Hun.***

Investors in the United States have mostly shrugged off the impact of the coronavirus ravaging China. That changed on Monday, when news of the outbreak's spread drove them to sell stocks — at a furious pace.

The S&P 500 index, which had reached a record high as recently as Wednesday, fell 3.4 percent, its worst single-day performance since February 2018. As analysts issued new warnings that the outbreak could drag down economies around the globe, stocks fell enough to wipe out all of the index's gains for 2020.

It was a turbulent day for stocks worldwide: European markets recorded their worst session since 2016, and major benchmarks in Asia also closed down.

"There was a cavalier attitude about the virus," said Bruce Bittles, chief investment strategist at Baird, an investment banking and money-management firm. With the worldwide threats appearing to increase, he added, "you have to think about the global economy slipping enough to cause a shortfall in earnings."

On Monday, fears were rising that the outbreak could spread further into Asia and Europe.

Italy reported it had 219 cases and locked down 11 towns, restricting the movements of 50,000 people. Police and military forces were deployed to ensure that only people with special permission left or entered towns covered by the order. Officials in Lyon, France, stopped a bus from Milan on Monday and confined the passengers inside over suspicions of a case onboard, the newspaper Le Parisien reported.

South Korea, a major industrial center, reported 231 new cases a day after its government said it was prepared to use emergency powers if necessary. And state-

*Continued on Page A7*

the outbreak. PAGE B4

NYT 2/25/2020

NYT 2/26/2020

# IT 'COULD BE BAD': VIRAL CRISIS IN U.S. IS DEEMED LIKELY

## *Pregnant and Alone in Strained System*

By ALEXANDRA STEVENSON

HONG KONG — The hospital waiting room was filled with dozens of women wearing homemade hazmat suits. Their hair was tucked tightly under shower caps. Their rain ponchos zipped taut over winter coats. All of the women, anxious and pregnant during

## *Stocks Plunge After Warning by C.D.C.*

By PAM BELLUCK and NOAH WEILAND

Federal health officials starkly warned on Tuesday that the new coronavirus will almost certainly spread in the United States, and that hospitals, businesses and schools should begin making preparations

NYT 2/26/2020

NYT 2/27/2020

# Economists see growing recession risk as coronavirus spreads

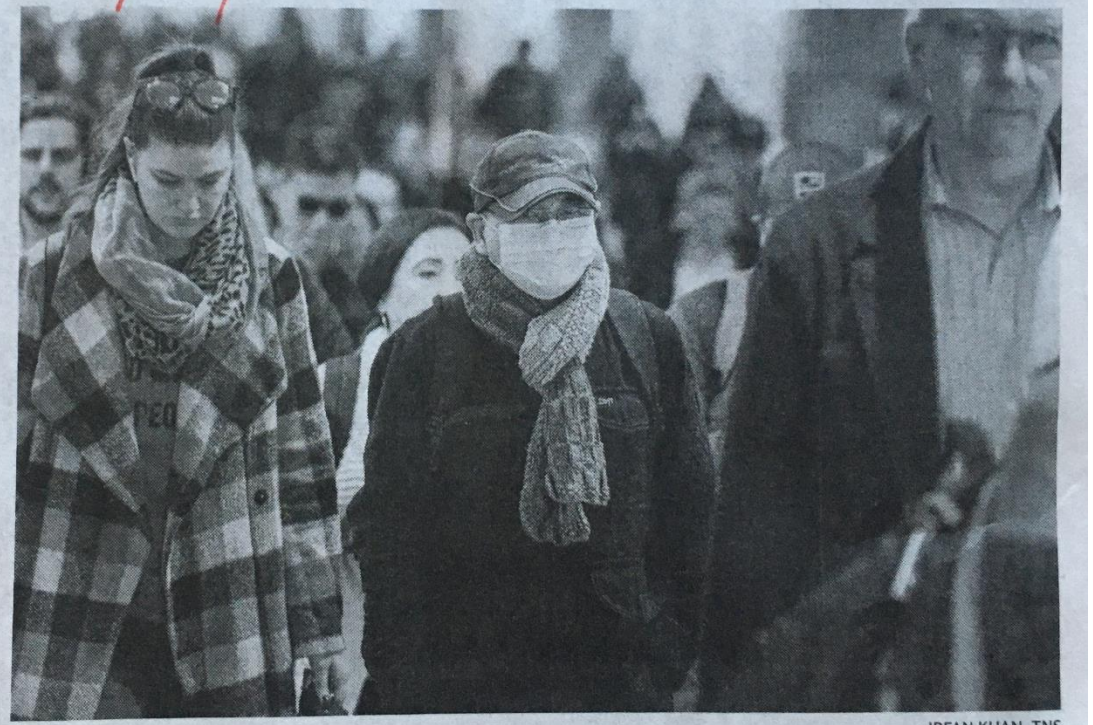
The STATE 2/27/2020

BY DON LEE
*Los Angeles Times*

WASHINGTON

As the coronavirus outbreak enters a potentially dangerous new phase, with cases widening in Europe and expected to spread in the United States, economists have begun to raise their estimates for the risk of a global recession and fallout to the American economy.

Economists say the stock market selloff in recent days reflects a reassessment of the likely magnitude of the hit to corporate earnings in the virus's wake, suggesting the economic pain could last longer and the recovery may not be as swift as



IRFAN KHAN TNS

Some commuters at Union Station in Los Angeles don breathing masks on January 31.

Trump's chief economic

NYT 2/27/2020

The State

# Pence to lead US fight against coronavirus

THE STATE 2/27/2020

BY LAURAN NEERGAARD, RICARDO ALONSO-ZALDIVAR, KIM TONG-HYUNG AND MATT SEDENSKY
*Associated Press*

WASHINGTON

President Donald Trump declared Wednesday that the U.S. is "very, very ready" for whatever the coronavirus threat brings, and he put his vice president in charge of overseeing the nation's response.

Trump sought to minimize fears of the virus spreading widely across the U.S. But he said he was ready to spend "whatever's appropriate," even if that meant the extra billions of dollars that Democrats have said is necessary to beef up the U.S. response. Trump had told Congress earlier this week that the government needed to spend $2.5 billion to fight the virus.

"We're very, very ready for this, for anything," even if it's "a breakout of larger proportions," Trump told a news conference.

Vice President Mike Pence will be working with the government's top health authorities, and Trump's earlier-appointed coronavirus task force, to oversee the response.

Earlier Wednesday, Trump pushed back against criticism that his administration isn't doing enough to meet the coronavirus threat.

Meanwhile, health officials said three new coronavirus cases have been reported in the U.S., bringing the tally here to 60.

Senate Democratic Leader Chuck Schumer of New York presented a $8.5 billion plan that calls for more than triple Trump's request. It includes $4.5 billion for the Department of Health and Human Services to work to contain the outbreak in the U.S., $1 billion to develop and manufacture a vaccine, $1 billion to help other countries battle the coronavirus, and $2 billion to reimburse states for costs incurred in tackling the outbreak.

Around the world, crews

SEE CORONAVIRUS, 4

NYT 2/28/2020

# STOCKS TAKE DIVE NOT SEEN SINCE 2011 OVER VIRUS CRISIS

NYT: 2/28/2020

## Sixth Straight Day of Losses as Pressure Rises on Global Supply Chains

By MATT PHILLIPS

The global stock market slid for the sixth straight day on Thursday, as the S&P 500 index plunged to its worst loss in almost nine years and investors worldwide grew increasingly fearful that the

to do so.

Scott Clemons, the chief investment strategist for private banking at Brown Brothers Harriman, said the outbreak's potential to alter American consumers' habits was at the heart of the sell-off.

**OK OK!  Enough about disease and politics and such….**

**How about something pleasant we can all enjoy such as sports?**

# Tokyo 2020 Olympics will now take place in July 2021, due to coronavirus

The International Olympic Committee has announced new dates for the Olympics in 2021.

## Some Past Olympic Games

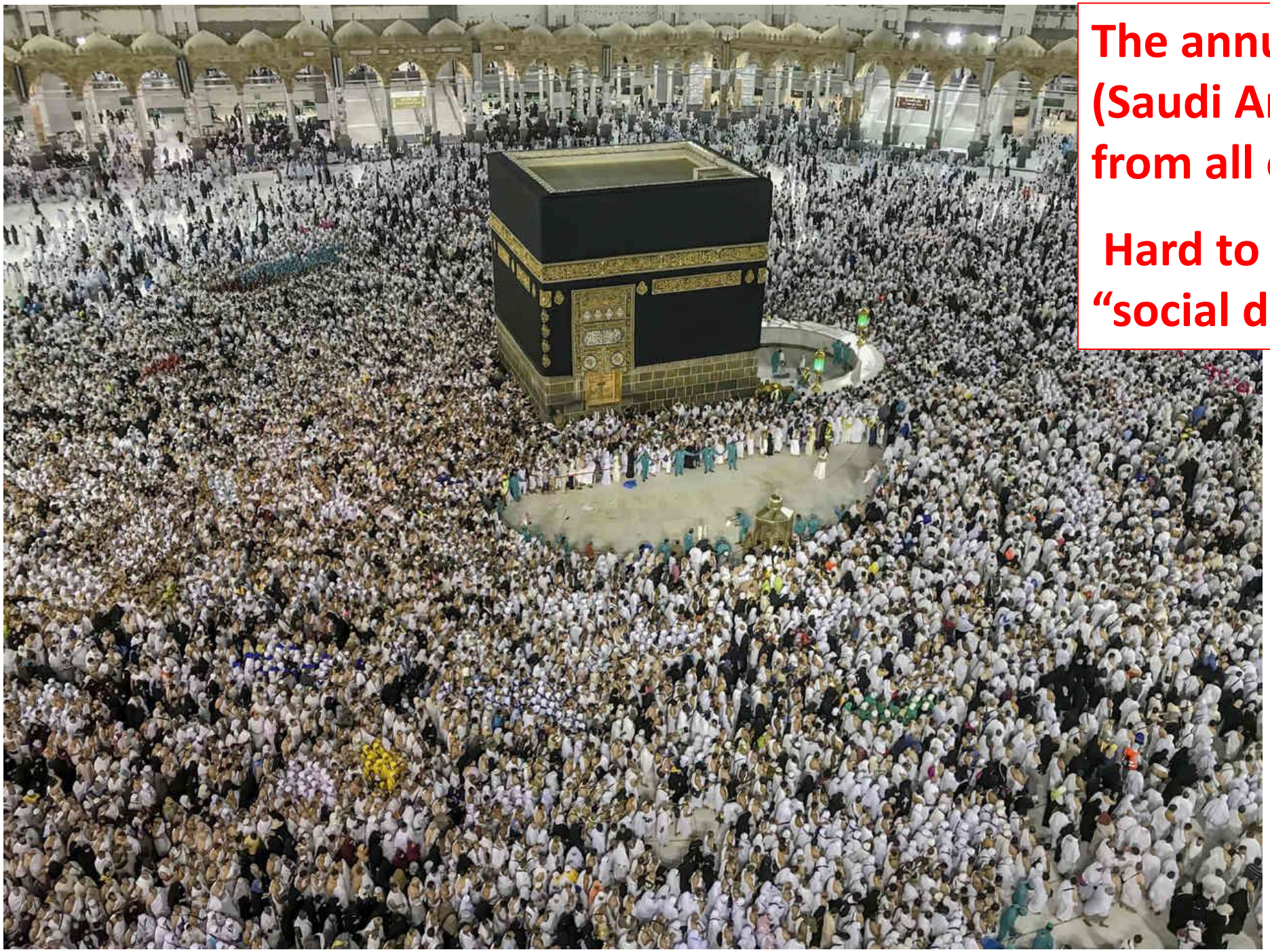
1932 Los Angeles
1936 Berlin
1940
1944
1948 London
1952 Helsinki
1956 Melbourne
. . . . . .
2016 Rio de Janeiro
2020

**Thus…. In memory the Olympic Games have only been stopped by:**

- * (Zika… almost in 2016)
- **World War II, and by**
- **SARS-CoV-2**

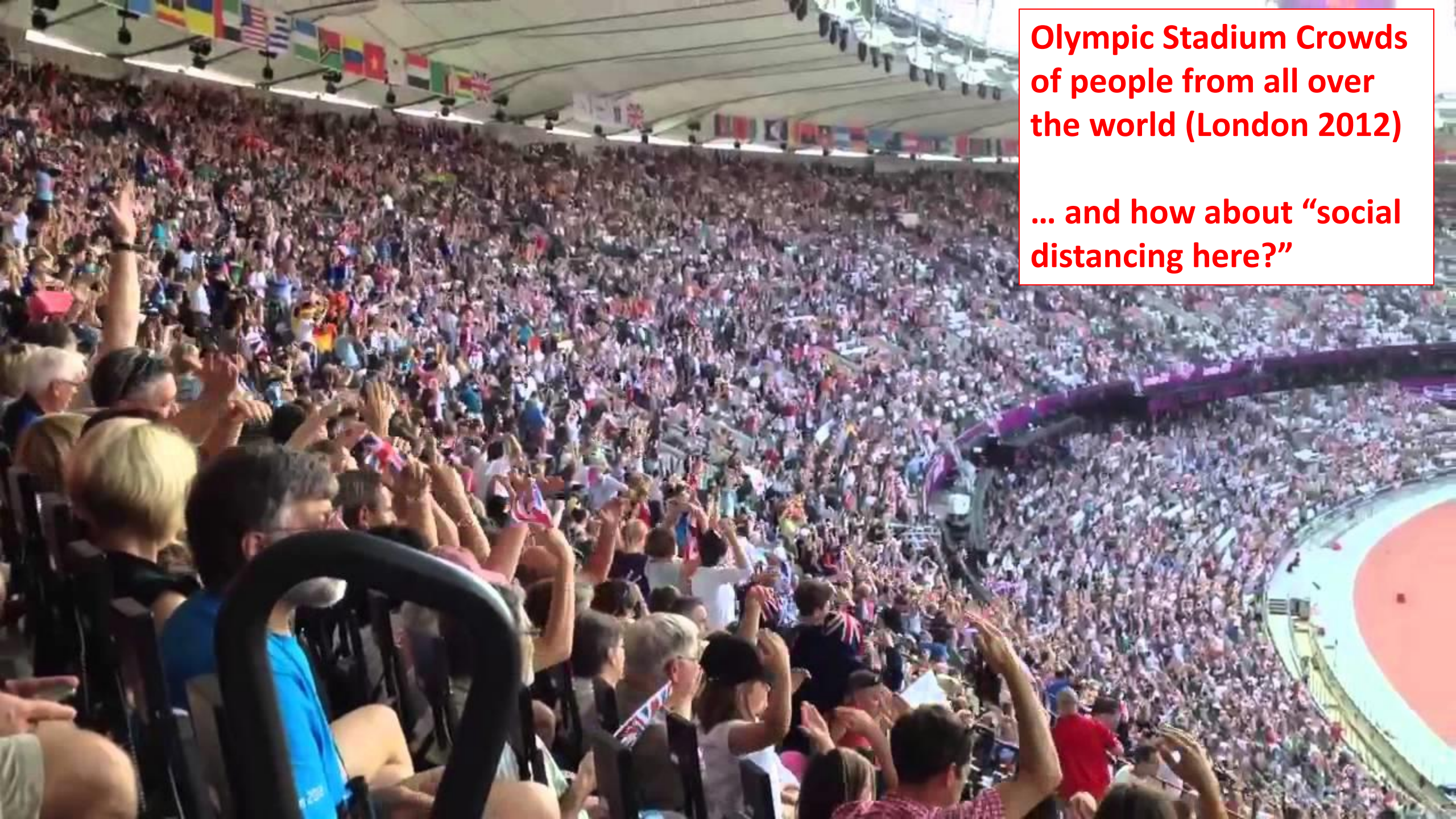
# Perspectives on Epidemic Infectious Disease and Mass International Gatherings

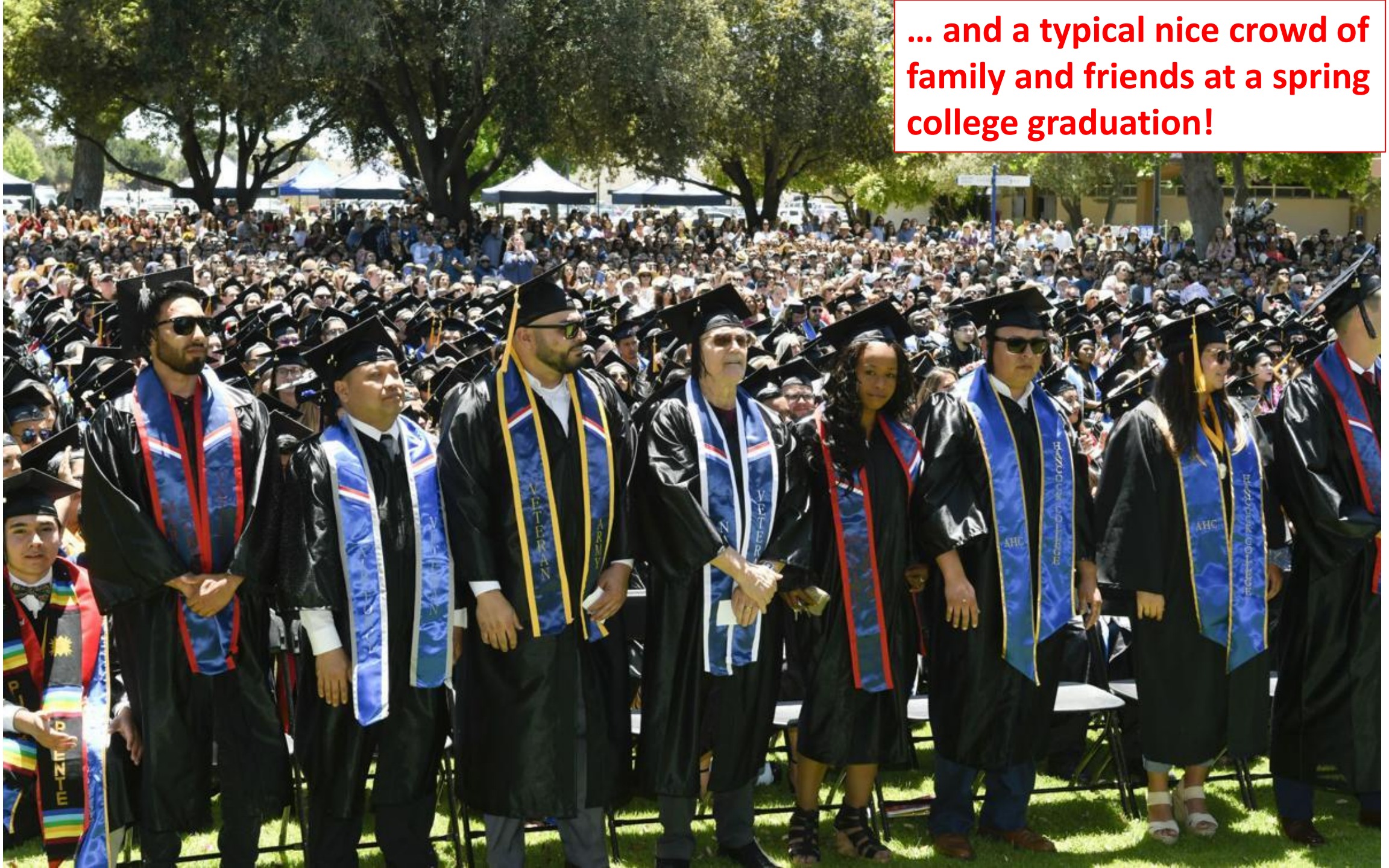
- 2020 Summer Olympics in Tokyo…. and Coronavirus!
- 2016 Summer Olympics in Brazil… and Zika virus!
- 1987 and 2000 The Hajj in Mecca… and Meningococcal meningitis!
- 1972 Hajj in Mecca…. and subsequent reintroduction of smallpox into Europe!



**The annual Hajj in Mecca (Saudi Arabia)… pilgrims from all over the world.**

**Hard to maintain much “social distancing”!**


Olympic Stadium Crowds of people from all over the world (London 2012)
… and how about “social distancing here?”

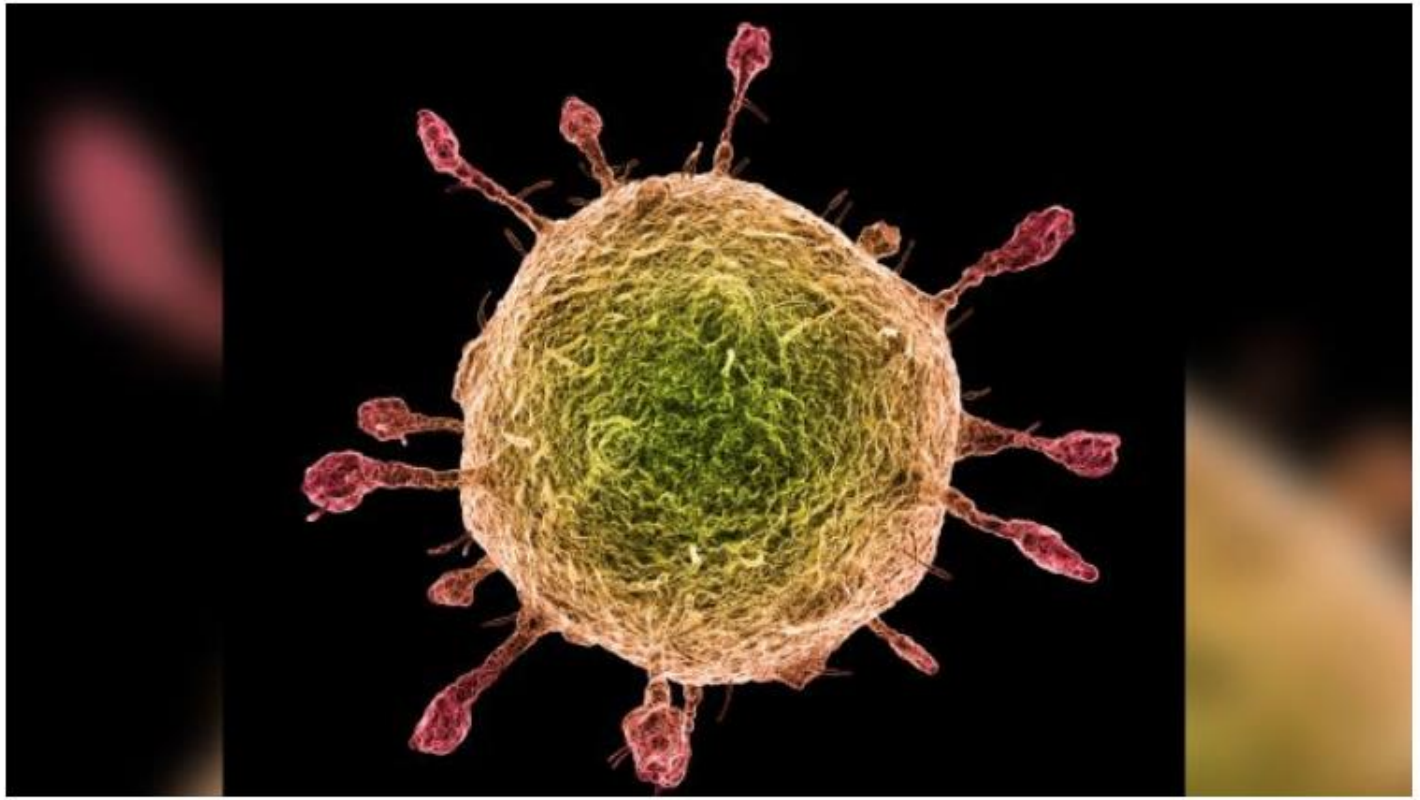

… and a typical nice crowd of family and friends at a spring college graduation!
VETERAN
ARMY
VETER
AHC
AHC
ENTE

# How does the new coronavirus compare with the flu?

By Rachael Rettner - Senior Writer 9 days ago

Which one is more worrisome?

Comments (14)



The coronavirus particle has a crown of spikes on its surface.
(Image: © Alfred Pasieka/Science Photo Library via Getty Images)

www.livescience.com/new-coronavirus-compare-with-flu.html 2/28/2020

# 2019-2020 U.S. Flu Season: Preliminary Burden Estimates

Español

CDC estimates* that, from **October 1, 2019**, through **February 22, 2020**, there have been:

32,000,000 – 45,000,000
flu illnesses

14,000,000 – 21,000,000
flu medical visits

310,000 – 560,000
flu hospitalizations

18,000 – 46,000
flu deaths

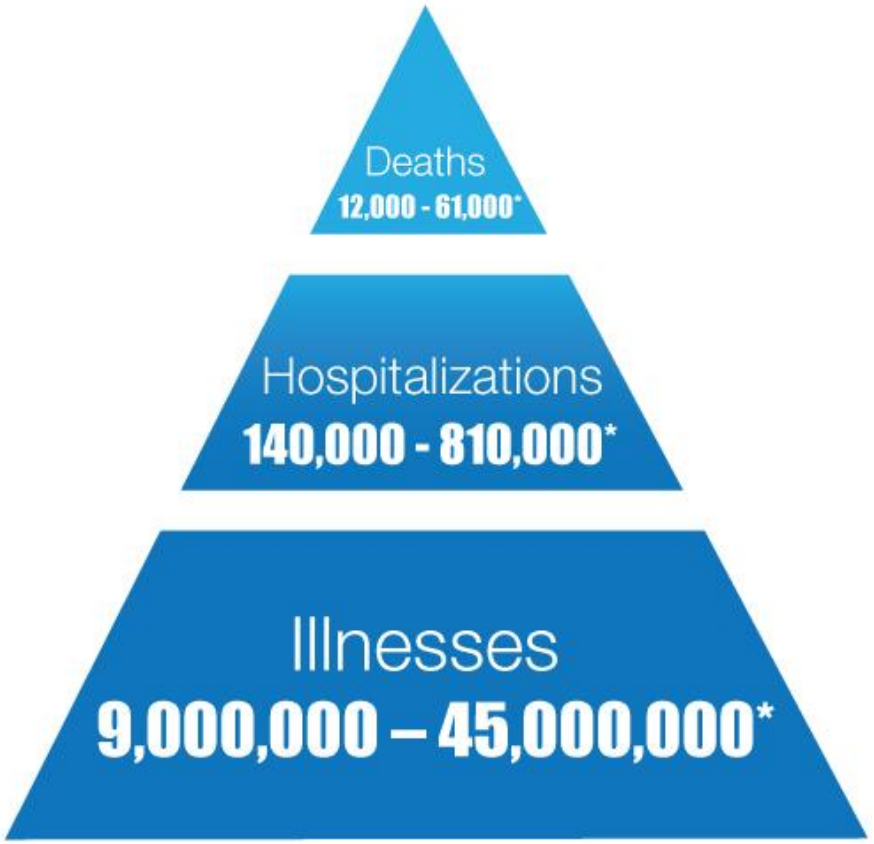
*Because influenza surveillance does not capture all cases of flu that occur in the U.S., CDC provides these estimated ranges to better reflect the larger burden of influenza. These estimates are calculated based on CDC's weekly influenza surveillance

https://www.cdc.gov/flu/about/burden/preliminary-in-season-estimates.htm
(2/28/2020)

# Estimated Range of Annual Burden of Flu
# United States, 2010-11 through 2017-18 Influenza Seasons

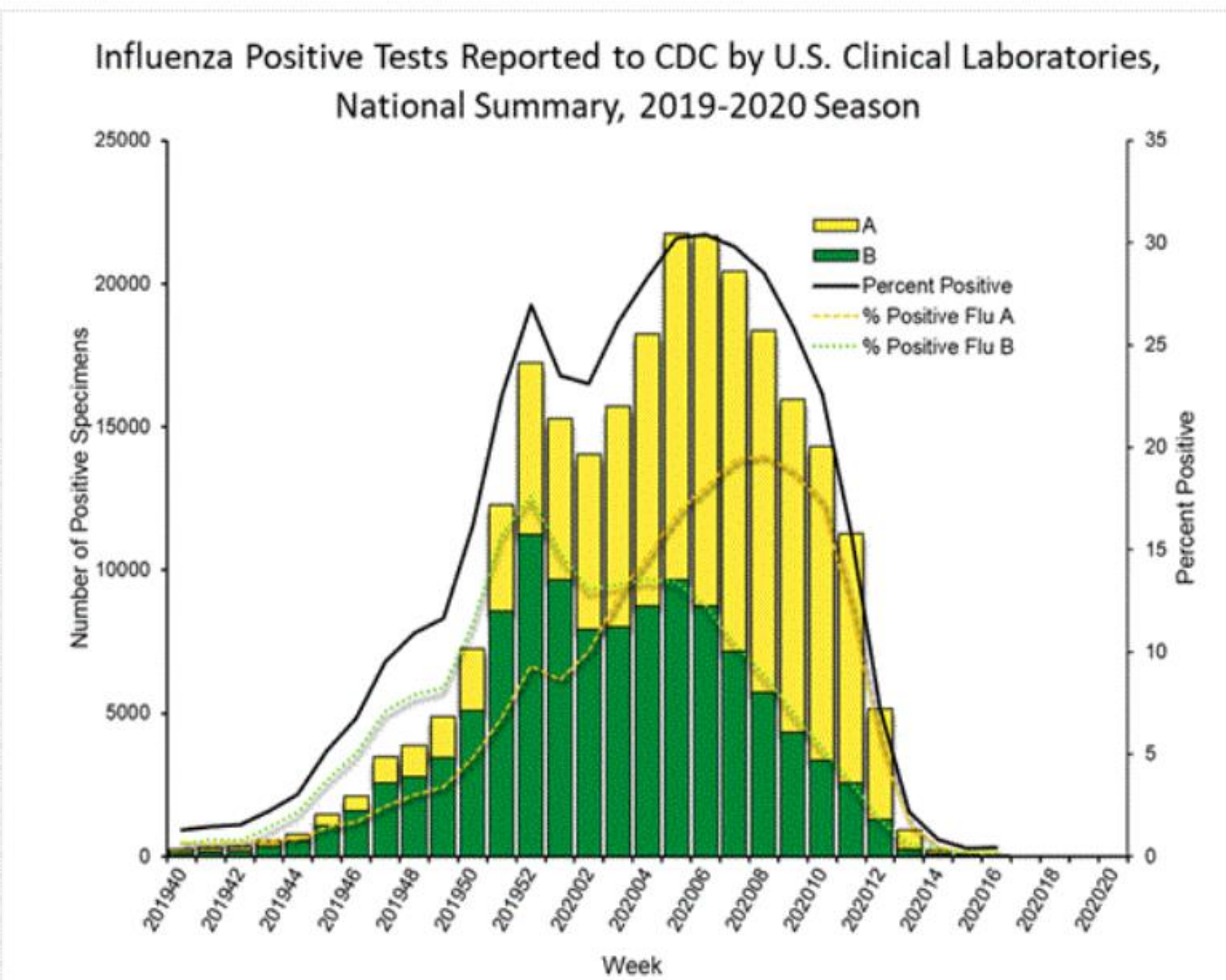
**The burden of influenza disease in the United States can vary widely and is determined by a number of factors including the characteristics of circulating viruses, the timing of the season, how well the vaccine is working to protect against illness, and how many people got vaccinated. While the impact of flu varies, it places a substantial burden on the health of people in the United States each year.**

**CDC estimates that influenza has resulted in between 9 million – 45 million illnesses, between 140,000 – 810,000 hospitalizations and between 12,000 – 61,000 deaths annually since 2010.**

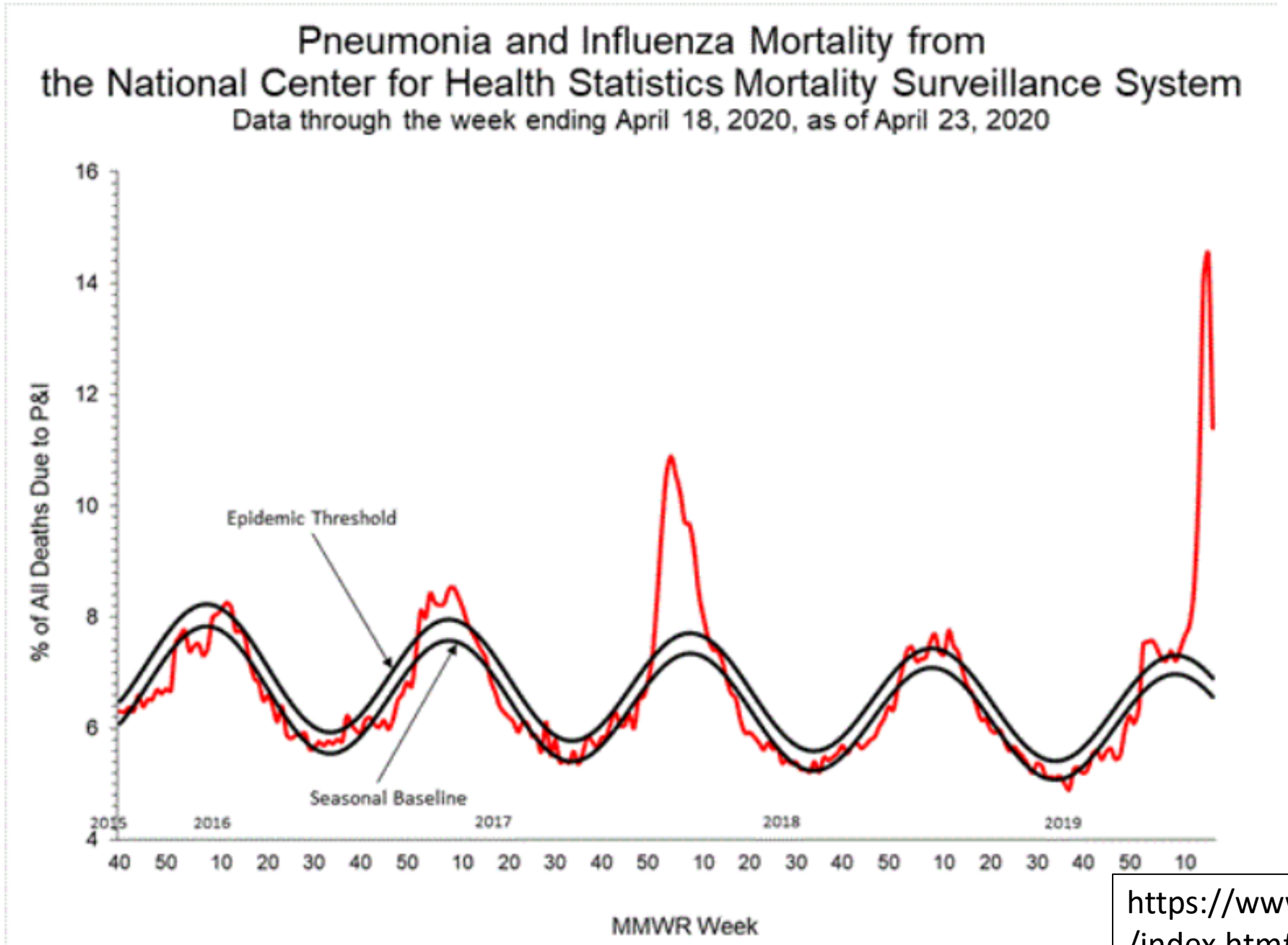



*The top range of these burden estimates are from the 2017-2018 flu season. These are preliminary and may change as data are finalized.

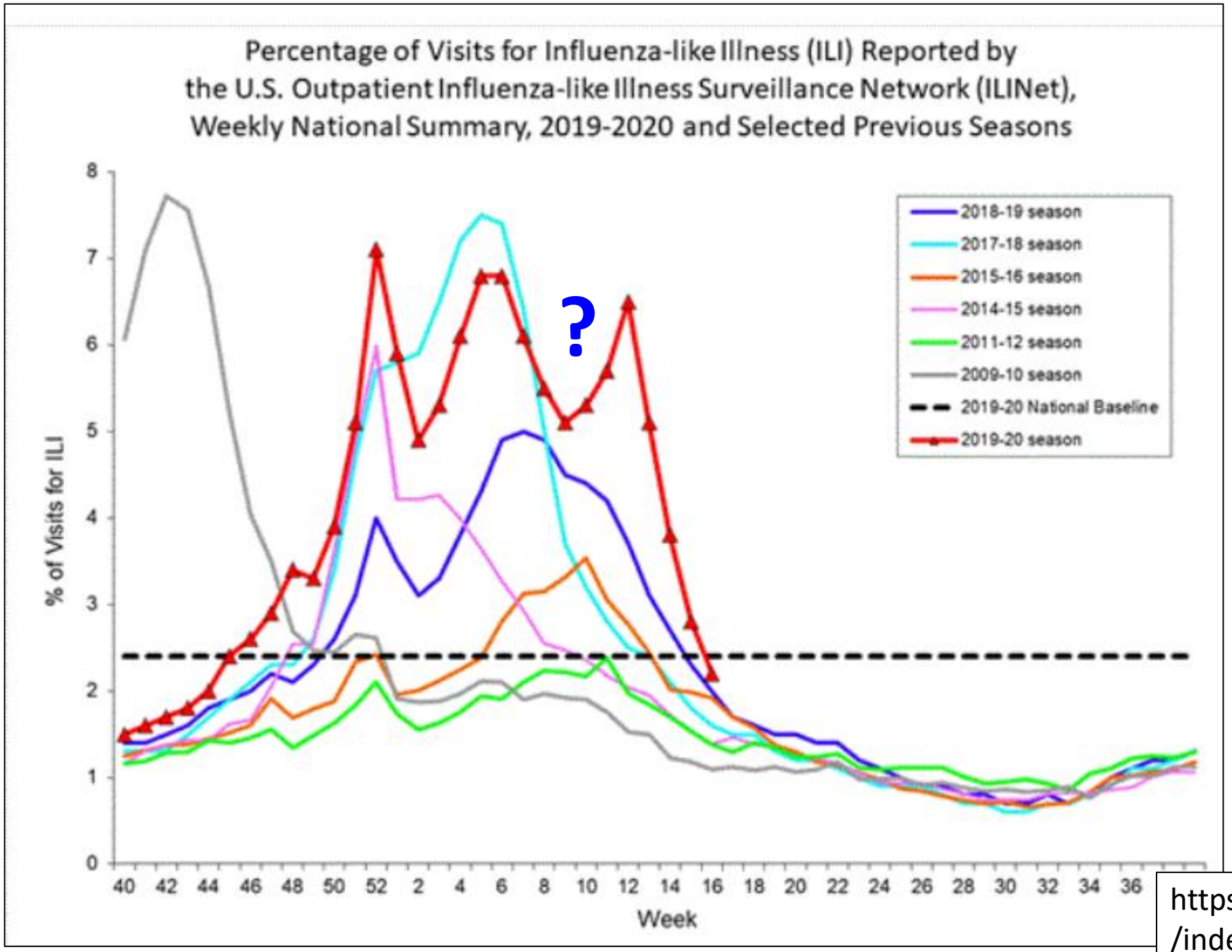
https://www.cdc.gov/flu/about/burden/index.html




https://www.cdc.gov/flu/weekly/index.htm#ILIActivityMap



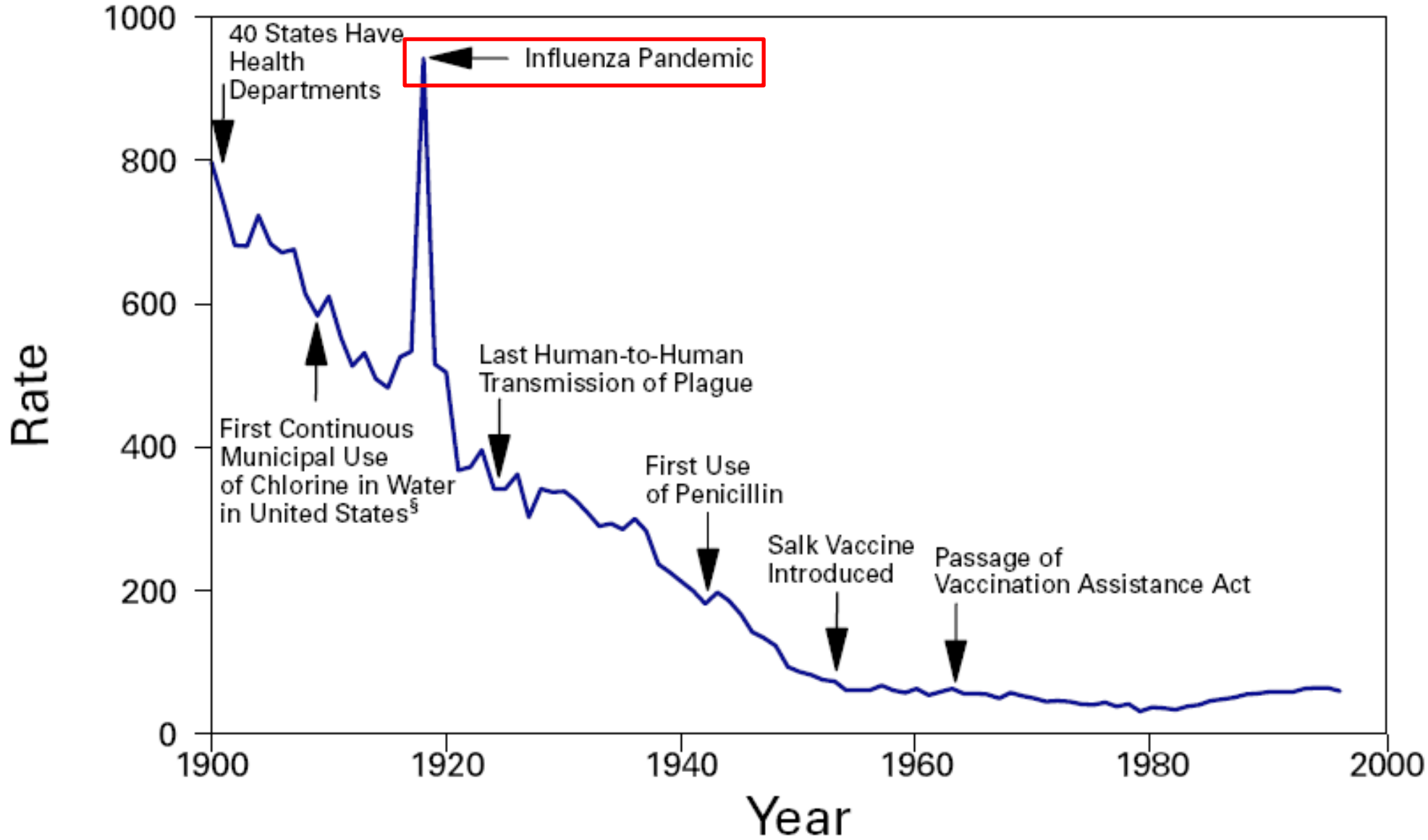

https://www.cdc.gov/flu/weekly/index.htm#ILIActivityMap




https://www.cdc.gov/flu/weekly/index.htm#ILIActivityMap

# Flash mini-look-back tp the great influenza pandemic of 1918

**FIGURE 1. Crude death rate* for infectious diseases — United States, 1900–1996†**




*Per 100,000 population per year.

**MMWR July 30, 1999**

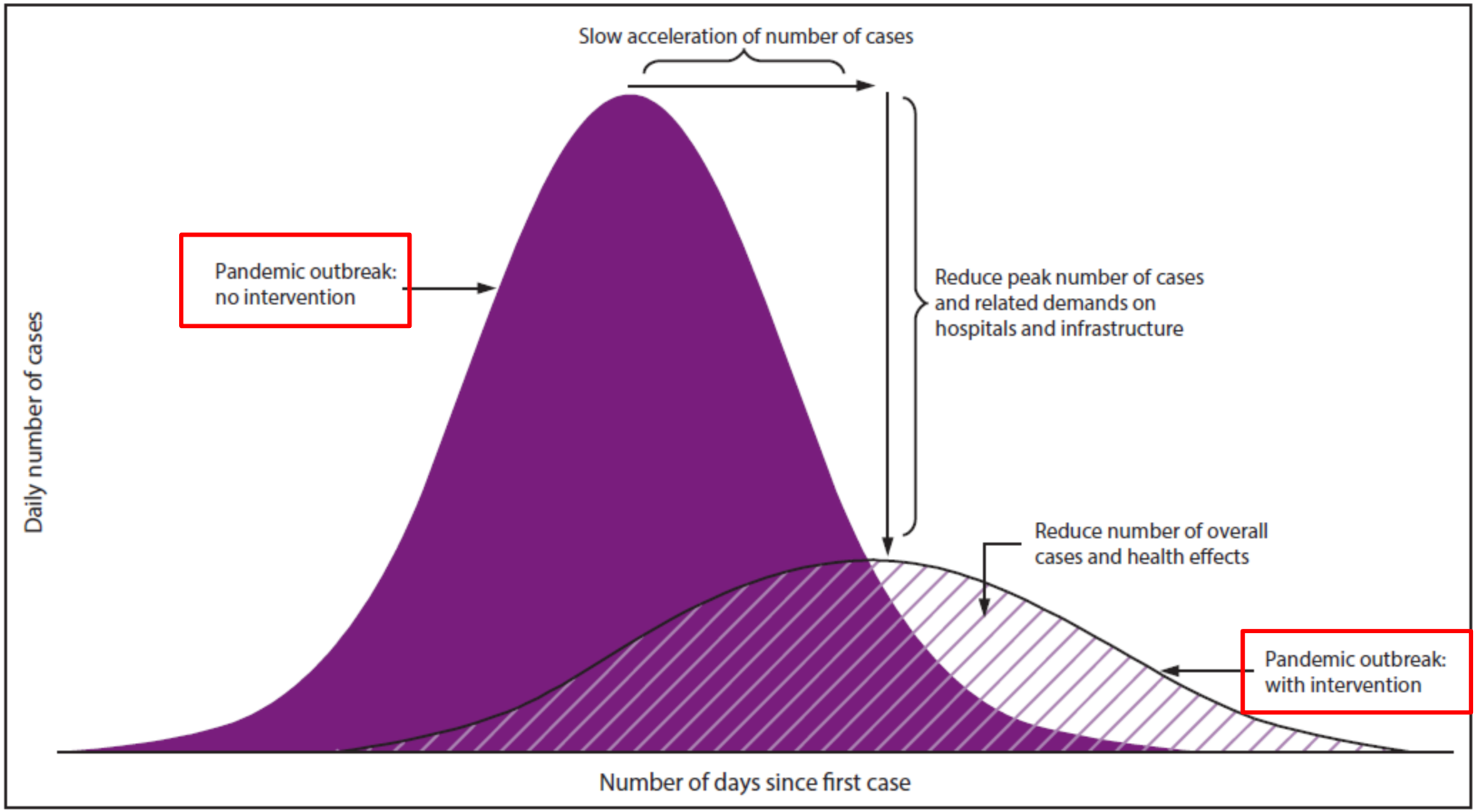
21. In most cities all public meetings were banned, all public gathering places—churches, schools, theaters, and saloons—closed. Most churches simply canceled services but this one in California met outdoors, a technical violation of the closing order but a response to the congregation's need for prayer.

Centers for Disease Control and Prevention
MMWR
Morbidity and Mortality Weekly Report
Recommendations and Reports / Vol. 66 / No. 1
April 21, 2017

# Community Mitigation Guidelines to Prevent Pandemic Influenza — United States, 2017

**What lessons to be gained -- or at least food for thought ! -- from this careful document regarding "Community Mitigation" of an illness that so resembles that produced by COVID-19!?**

FIGURE 1. Goals of community mitigation for pandemic influenza




**Source:** Adapted from: CDC. Interim pre-pandemic planning guidance: community strategy for pandemic influenza mitigation in the United States—early, targeted, layered use of nonpharmaceutical interventions. Atlanta, GA: US Department of Health and Human Services, CDC; 2007. https://stacks.cdc.gov/view/cdc/11425.

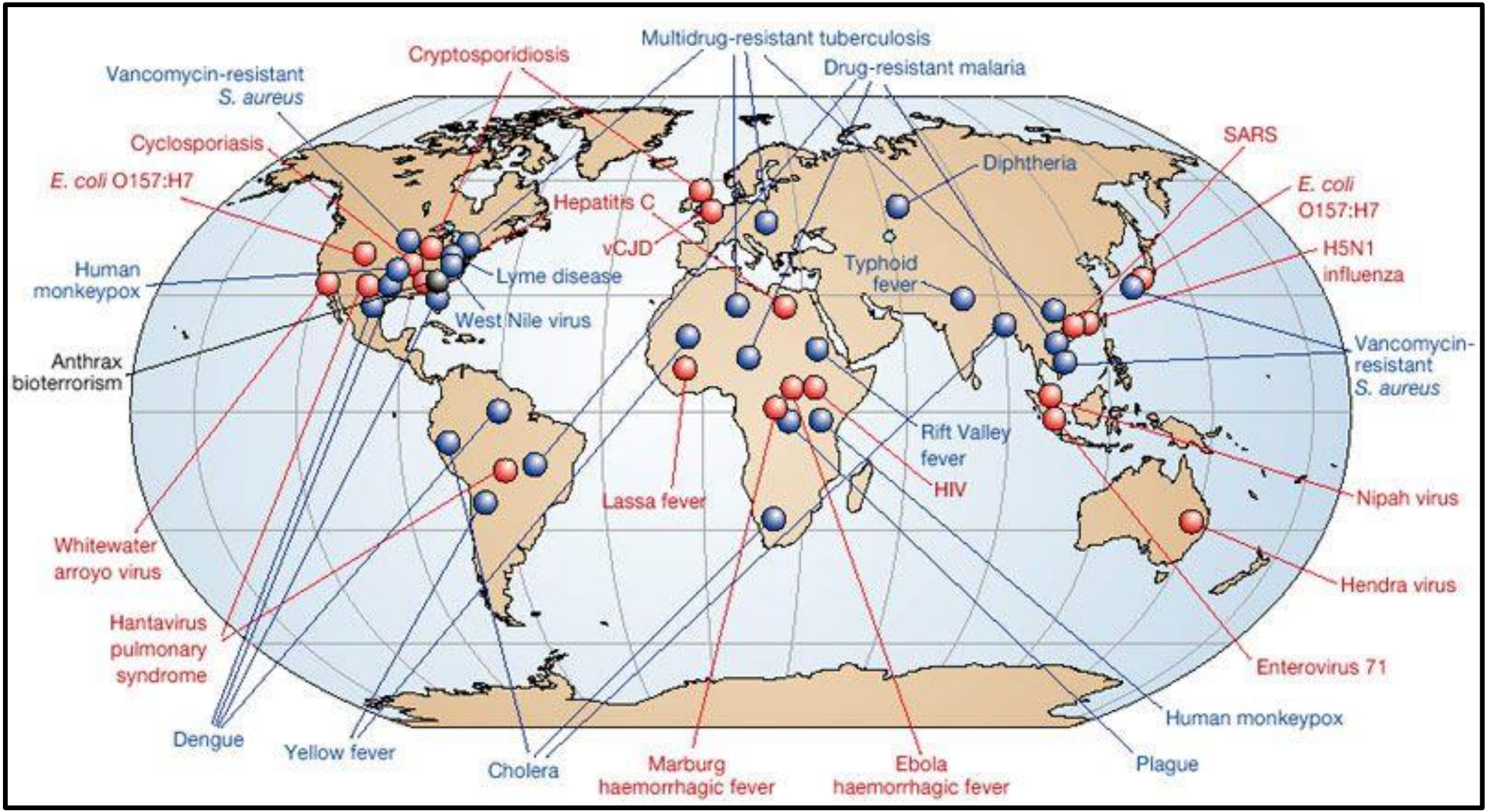
# *Emerging Infectious Diseases (Just a few examples)*

- Pandemic Influenza: 1918
- Ebola in Zaire:  1976
- HIV in the USA:  1981
- WNV in the USA: 1999
- SARS: Hong-Kong 2003
- Ebola in West Africa: 2014
- Zika in Western Hemisphere: 2016
- COVID-19: China 2020

# What are “Emerging Infectious Diseases”

- **New diseases (previously unknown**
  - HIV 1981
  - Ebola 1976
  - **COVID-19 (2019-2020)**

- **Old diseases…. But “up to new tricks”**
  - WNV appearance in the Western Hemisphere (1999)
  - Multi-drug resistant Tuberculosis (MDR-TB) (~ 1990s)
  - Extensively-drug-resistant Tuberculosis (XDRTB) (~2000s)




www.nature.com/articles/nature02759

Published in Nature
7/4/2004



# The challenge of emerging and re-emerging infectious diseases

**David M. Morens, Gregory K. Folkers & Anthony S. Fauci**

*National Institute of Allergy and Infectious Diseases, National Institutes of Health, Department of Health and Human Services, Bethesda, Maryland 20892-2520, USA (e-mail: afauci@niaid.nih.gov)*

**Infectious diseases have for centuries ranked with wars and famine as major challenges to human progress and survival. They remain among the leading causes of death and disability worldwide. Against a constant background of established infections, epidemics of new and old infectious diseases periodically emerge, greatly magnifying the global burden of infections. Studies of these emerging infections reveal the evolutionary properties of pathogenic microorganisms and the dynamic relationships between microorganisms, their hosts and the environment.**

Emerging infections (EIs) can be defined as "infections that have newly appeared in a population or have existed previously but are rapidly increasing in incidence or geographic range"[1]. EIs have shaped the course of human history and have caused incalculable misery and death. In 1981, a new disease — acquired immune deficiency syndrome (AIDS) — was first recognized. As a global killer, AIDS now threatens to surpass the Black Death of the fourteenth century and the 1918–1920 influenza pandemic, each of which and later as 'pestilences', 'pestes', 'pests' and 'plagues'. Many examples can be cited in addition to the Black Death and the 1918 influenza pandemic, such as certain biblical pharaonic plagues and the unidentified Plague of Athens, which heralded the end of Greece's Golden Age[11]. The Age of Discovery, starting in the fifteenth century, was a particularly disastrous period with regard to the spread of infectious diseases. Importation of smallpox into Mexico caused 10–15 million deaths in 1520–1521, effectively ending Aztec civilization[12,13]. Other Amerindian and Pacific civilizations

# EMERGING INFECTIOUS DISEASES®

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## Expedited Articles

Potential Presymptomatic Transmission of SARS-CoV-2, Zhejiang Province, China, 2020 Z. Tong et al.

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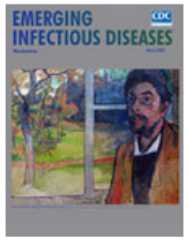



### Volume 26, Number 3—March 2020

[PDF - 20.72 MB - 246 pages]

Last Issue - Volume 26, Number 2—February 2020 Podcasts

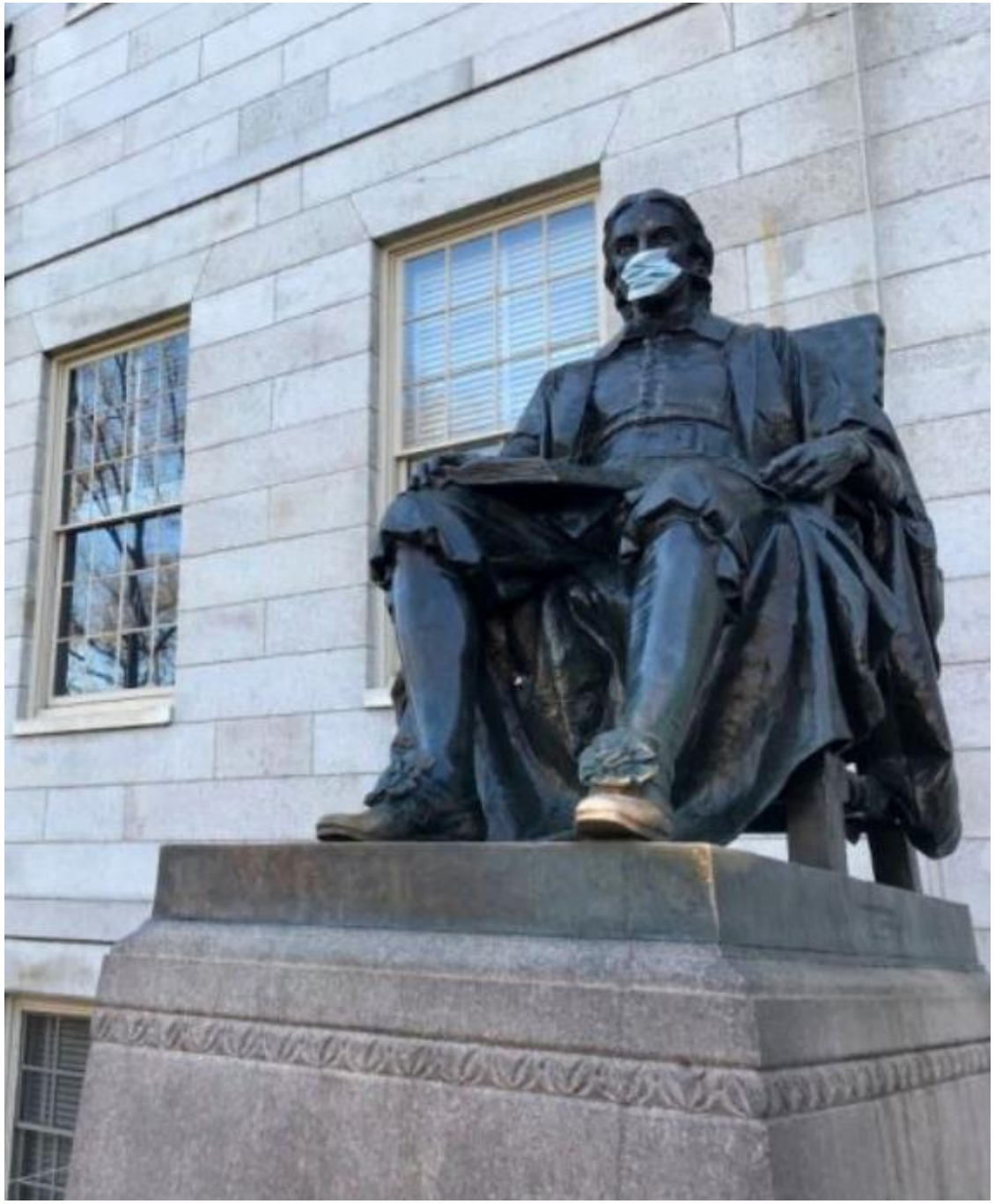
## Synopses

MEDSCAPE CME ACTIVITY

Clinical Characteristics of Disseminated Strongyloidiasis, Japan, 1975–2017 [PDF - 1.51 MB - 8 pages]

M. Mukaigawara et al. View Abstract Cite This Article Email this Article


**A CHANGED CAMPAIGN** Biden and Sanders bump elbows instead of shaking hands before their March 15 debate



# Conceptual Perspectives on the “stages” of SARS-CoV-2 Infection (*)

| Stage | IInfected | Ill | Seen by a doctor at this stage | Likely to be "counted" as a case | May transmit virus to the community at this stage | May transmit to HCWs at this stage |
|---|---|---|---|---|---|---|
| 1 Asymptomatic | + | - | No | No | Possibly | No |
| 2 Presymptomatic | + | - | No | Possibly later | Possibly | No |
| 3 Mild illness | + | + | No | No | Yes | No |
| 4 Moderate illness | + | ++ | Yes | Yes | Yes | Yes |
| 5 Hospitalization | + | +++ | Yes | Yes | No | Yes |
| 6 ICU & Ventilator | + | ++++ | Yes | Yes | No | Yes |
| 7 Dying | + | +++++ | Yes | Yes | No | Yes |

*(*) Note: though the table is broadly useful conceptually, several individual cells merit nuanced discussion!*

# Questions for the Coming Months - 1

- Continued global transmission… Geography? Extent?
- Transmission interruption as with SARS in 2003?
- N. hemisphere transmission halt in the summer (cf. flu!?)
- Epidemiologic and serological studies to help assess the "pyramid" & natural Hx
  - E.g. evaluation of *infections => cases => hospitalizations =>deaths*
- Eventual effectiveness of antiviral drug trials?
- Eventual (e.g. 1-2 years) vaccine development? => Exploding Research Ongoing Already

# *Profits and Pride at Stake, the Race for a Vaccine Intensifies*

Governments, companies and academic labs are accelerating their efforts amid geopolitical crosscurrents, questions about safety and the challenges of producing enough doses for billions of people.

**NYT May 2**

By David E. Sanger et al.  NYT  May 2, 2020

WASHINGTON — Four months after a mysterious new virus began its deadly march around the globe, **the search for a vaccine has taken on an intensity never before seen in medical research**, with huge implications for public health, the world economy and politics.

**Seven of the roughly 90 projects being pursued by governments, pharmaceutical makers, biotech innovators and academic laboratories have reached the stage of clinical trials.** With political leaders — not least President Trump — increasingly pressing for progress, and with big potential profits at stake for the industry, drug makers and researchers have signaled that they are moving ahead at unheard-of speeds.

But the whole enterprise remains dogged by uncertainty about whether any coronavirus vaccine will prove effective, how fast it could be made available to millions or billions of people and **whether the rush — compressing a process that can take 10 years into 10 months — will sacrifice safety.**

Contents lists available at ScienceDirect

Vaccine

journal homepage: www.elsevier.com/locate/vaccine

# Extraordinary Diseases Require Extraordinary Solutions

By Stanley Plotkin

**The world is experiencing a major pandemic with a high mortality**. One can hope that the outbreak will end spontaneously after most people are infected, but the SARS-2 coronavirus may become endemic and continue to cause cycles of respiratory disease and fatal pneumonias.

**A vaccine that is shown to give immunity is the only practical way of preventing the virus from continuing to cause widespread serious and often fatal illness and economic destruction**. Developing one and distributing an effcacious vaccine as quickly as possible is a moral imperative for the world.

**Vaccine development is usually a long process, requiring years to move from animal tests to a series of human trials to regulatory licensure.** Safety of a vaccine must be confirmed by extensive animal work, followed by the inoculation of dozens of humans, then escalating to thousands.

The demonstration of efficacy normally depends on collecting and comparing cases in thousands of individuals who randomly receive vaccine or placebo [1]. That process normally takes months to years, during which SARS-2 will infect and possibly kill millions. **Acceleration of that standard process is necessary.**

**Might it be necessary to evaluate VE by having persons volunteer to be (i) vaccinated and then (ii) purposely exposed to the virus!**

**This approach to rapidly demonstrate VE could save countless lives…. but raises consequential ethical issues!?**

# Questions for the Coming Months - 2

- Global economic impact: transient or long-term?
- Societal impact (e.g. Quarantines? Business and school closings? Tourism? Cruises? Tokyo 2020 summer Olympic Games?)
- Local, state, federal and international decisions about "how rapidly to reopen society"…
  - Possible **tug o'war** between (i) interest in reducing transmission => avoiding many illnesses and saving lives vs. (ii) need to avoid a tremendous economic catastrophy which would have both short and long-term consequences
- In longer run… question as to whether we will return to the same "normality" we have known for the past 50+ years… or will society be changed as a result of this pandemic?

# The Harsh Future of American Cities

## How the pandemic will alter our urban centers, now and maybe forever

Steve LeVine Follow

May 4 · 14 min read ★

But alongside the displays of liberation, and for years after, American cities and towns seem likely to see untold scars of both the pandemic and the depression-like recession. On the nation's current trajectory, one of the most probable post-Covid future scenarios in our cities is stark austerity, with empty coffers for the very services and qualities that make for an appealing urban life — well-paying jobs, robust public transportation, concerts, museums, good schools, varied restaurants, boutiques, well-swept streets, and modern office space. There will be hopping pockets of the old days with adjustments for pandemic safety, but for years, many businesses could be shuttered and even boarded up, unable to weather Covid-19 and the economic downturn. Joblessness will be high, and many of the arts may go dark.

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And… what collective sense of purpose do we have regarding the importance of **"social distancing"** ?

# People flood Five Points as coronavirus restrictions relax

5/6/20

SEAN RAYFORD For SodaCitizen.com

People stand in line outside of Jake's in Five Points on Monday in Columbia. South Carolina restaurants were allowed to reopen for outdoor dining on Monday under the condition that patrons maintain social distancing guidelines.

# COVID-19 and Government Tyranny

**To promote "social distancing" Governors have closed schools… and beaches… and restaurants… and more.**

**The disease + these "closures" have resulted in tremendous loss of jobs, wages, access to food and… "sense of loss of freedom" in our "land of the free".**

**These "government closures" have thus now also prompted increasingly vocal protestors… who complain of government tyranny!**

https://www.pbs.org/newshour/world/imf-cancels-debt-payments-for-6-months-for-25-poor-nations

PBS NEWS HOUR

Menu

*Left:* IMF Managing Director Kristalina Georgieva speaks during a conference hosted by the Vatican on economic solidarity, at the Vatican, February 5, 2020. REUTERS/Remo Casilli/File Photo

*By* –
Edith M. Lederer, Associated Press

Leave a comment

# IMF cancels debt payments for 6 months for 25 poor nations

Related

**Government loans start flowing to small businesses**

*By* Joyce M. Rosenberg, Associated Press

**Short-term financial aid may not be enough during pandemic**

*By* Paul Wiseman, Associated Press

**Analysis: How we can prevent the next pandemic**

*By* Roger Cohn, Yale Environment 360

Opinion

# This Pandemic Is Bringing Another With It

More suffering is ahead for the developing world.

By Nicholas Kristof
Opinion Columnist

April 22, 2020

424

A woman in Nairobi, Kenya, waiting for volunteers to distribute food. Luis Tato/Agence France-Presse — Getty Images

Opinion

# This Pandemic Is Bringing Another With It

More suffering is ahead for the developing world.

By Nicholas Kristof
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April 22, 2020

424

**Another pandemic is looming** on the heels of the coronavirus: **a pandemic of starvation, illiteracy and poverty**.

"We are not only facing a global health pandemic but also a global humanitarian catastrophe," **David Beasley**, a former South Carolina governor who is executive director of the United Nations World Food Program**, warned the Security Council** this week. "We could be looking at famine in about three dozen countries."

**The world, he said, faces its most serious humanitarian crisis since World War II.** Developing countries have enormous vulnerabilities, such as overcrowded slums and health systems in which doctors are scarce and ventilators almost nonexistent. Ten countries in Africa have no ventilators at all.

# Questions for the Coming Months - 3

- Given the global Infectious Disease Challenges we have seen just in the past 100 years….
  - What type of “preparedness” should be maintained in anticipation of recurrent global epidemic crises?
  - Who will provide what expertise and do what type of planning?
  - In the US: who will pay? (US Federal funds vs State funds? International donors?)
  - Globally, what institutions will lead the way
    - Individual Governments ?
    - The G-8 ?
    - The World Health Organization ?
    - A new organization built from scratch for this purpose?

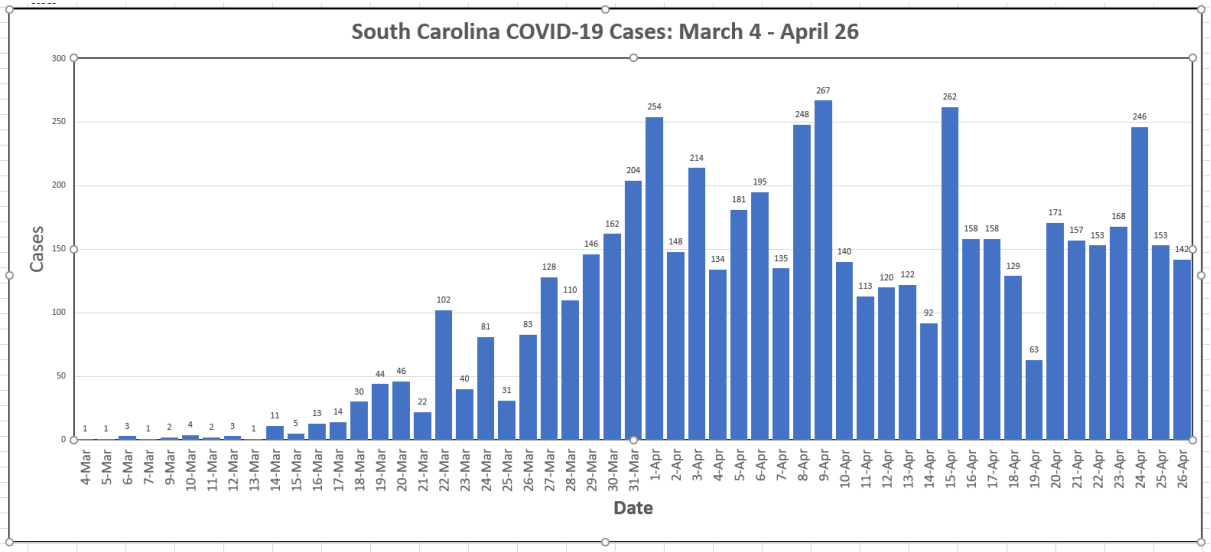
# Thus… what Manner of Issues are Raised by the Unfolding COVID-19 Pandemic ?

- Medical care
- Epidemiological
- Public Health
- Economics
- Legal
- Ethical
- Disparities (USA & Global)

- Role of Governance, Planning and Response at Different Levels
  - Local ?
  - state ?
  - Federal ?
  - International ?

# Thank you !

- Comments?
- Questions?
- Discussion?





www.cdc.gov

www.dhec.sc.gov

https://coronavirus.jhu.edu/

P.S. Those interested may consider enrolling in USC's new GIC-765: A special semester-long multidisciplinary course covering all aspects of COVID-19 disease!