






# COVID-19: Maintaining Operations in a Pandemic World

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## COVID-19: Maintaining Operations in a Pandemic World

April 23, 2020

# Presentation Topics

- The immediate future: Stages of a Pandemic
- Current Impact on the Food Industry
- Spread of the Virus and Mitigation Strategies
- Effectiveness of Face Masks
- Epidemiology Update
- Screening Employees & Visitors for Symptoms or Exposure to COVID-19
- Limiting the Spread of the Virus in the Workplace
- Considerations for Testing Employees for Infection

# The 5 Stages of a Pandemic

- **Stage 1 – Containment.** We try to keep the virus from entering and spreading in the community
- **Stage 2 – Mitigation.** We try to slow the spread of the virus so that our health system is not overwhelmed with cases. We are in Stage 2 now.
- **Stage 3 – Pre-Vaccine Containment.** We have a repeated period of containment, but with expanded testing and case contact tracing and targeted “social distancing.”
- **Stage 4 – Containment with a vaccine.** We campaign to vaccinate nearly all the population. Covid-19 will become a recurring disease much like seasonal flu.
- **Stage 5 – Preparation for the next Pandemic.** We will now recognize that pandemic disease is a national security priority. This pandemic will lead to fundamental changes in how many businesses operate and how we prepare for pandemic disease.

# Current Impact on the Food Industry

- COVID-19 has impacted every segment of the food industry
  - Several Food production facilities have been forced to cease operation due to employee illness with COVID-19
  - Foodservice sales rapidly decreased to a fraction of pre-pandemic levels
  - Transportation capacity is strained
  - Lead times for new packaging and equipment have increased
  - Food manufacturers are operating at reduced capacity and finding it difficult to maintain a safe environment for staff
  - Agricultural products cannot be harvested without a marketplace to receive them
  - Global supply chains are struggling to function

# Transmission of SARS-CoV-2 and Mitigation Strategy

- Person-to-person spread through aerosols continues to be viewed as the major means of spreading the virus
- Viral spread by talking, yelling, or singing is significant
- Viral spread by contact with contaminated surfaces undoubtedly occurs, but the significance of this route has not been quantified
- Fecal – oral spread remains a possibility
- Wearing masks is now seen as an important way of limiting the spread by aerosols
- Limiting face-to-face interaction, social distancing, isolating persons behind barriers to airflow, increased air filtration and frequent surface disinfection must become routine
- Increased use of screening for illness and COVID-19 testing to keep infected persons out of the workplace is needed

# Effectiveness of Face Masks

- Although in short supply, face masks can reduce the risk of virus transmission, and make employees feel safer
- No mask is effective if it does not fit tightly to the face and cover both the nose and mouth
  - N95 masks filter out 95% of viral containing aerosol droplets
  - KN95 masks are comparable to N95 masks
  - An N95 mask with an exhale valve protects the wearer, but not those nearby
  - Surgical masks made from non-woven polypropylene fiber filter about 56% of virus-containing particles, their utility is to protect others from the wearer
  - Cloth masks are only about 2%-38% effective in filtering virus-containing particles, depending on the number of layers and fabric used, their utility is to protect others from the wearer

<https://www.cidrap.umn.edu/news-perspective/2020/04/commentary-masks-all-covid-19-not-based-sound-data>  
<https://multimedia.3m.com/mws/media/4099030/respiratory-protection-against-biohazards.pdf>

# Preventing the Spread of SARS-CoV2

- We should expect to be without a vaccine for at least 2 years, and plan to operate our businesses in a way that limits the spread of the virus.
  - Continue work-at-home policies to the extent possible
  - Discourage employees from using mass transit systems
  - Screen employees for illness as they report for work (COVID-19 exposure and symptoms questions, monitoring for fever), and exposure history
  - Employees in an office environment should be physically separated by barriers or in private rooms if possible, need to decrease density
  - Common use equipment (copiers, fax machines, printers, touch screens, etc.) should be sanitized by employees before use.
  - Employees who must work near other employees should be supplied with protective masks, face shields, gloves and over-garments as necessary



# Employee Screening for Symptoms

- Screening is appropriate for employees who must frequently encounter other employees.
- Screening may not be effective in areas where there is minimal community transmission of the virus.
- Screening will not identify persons who are infected, but asymptomatic.
- Not all persons with COVID-19 will have fever and other symptoms may vary. Also, persons with a fever may not have COVID-19.
- Screening should be done in a way that protects employee privacy.
- Encourage employee self-monitoring.
- The EEOC has confirmed that employers may ask employees who work on-site:
  - If they have been diagnosed with COVID-19
  - If they have symptoms of COVID-19
  - If they recently traveled from an area with increased community transmission
  - If they have been in close contact with someone with COVID-19 or symptoms of COVID-19

# Screening Employees for Fever<sup>1</sup>

- Companies who choose to screen employees for a fever should clearly communicate the purpose, implement the procedure consistently and maintain confidentiality.<sup>2</sup>
- Screening is done with an infrared (IR) thermometer to avoid contact and the need to sanitize thermometers between use. IR thermometers read surface temperatures and convert to a body temperature.
- IR thermometers are subject to error from environmental factors
  - Cold air temperatures can depress the reading and warm clothing or sitting in a hot car can increase the reading
  - The skin needs 2 to 5 minutes to equilibrate to indoor temperatures if the person is coming in from a hot or cold environment or has been
  - Consider taking a second temperature measurement after a waiting period if the first reading is abnormal

<sup>1</sup>[Screening Food Industry Employees for COVID-19 Symptoms or Exposure 3/30/2020](#)

<sup>2</sup>[EEOC's Pandemic Preparedness Memorandum](#)

# Continuing Employee Education

- Everyone in the food industry should understand that they are serving the country and they are needed as much as doctors, nurses, and hospital workers.
- The education of employees about the virus and how to prevent the spread of the virus must be continual. Employees are exposed to social media and news that may discount the importance of social distancing and other containment strategies and we must correct misinformation. **Many persons continue to deny the importance of containment strategies.**
- Try to emphasize the importance of preventing the spread of the virus in a way that connects with the employee on an emotional level, e.g., the need to protect vulnerable family members and co-workers.
- Hold training and information sessions where employees can ask questions and express their concerns.
- Tell employees what you are doing to protect their health and maintain the ability to supply Americans with food. Talk about the impact of a food shortage.

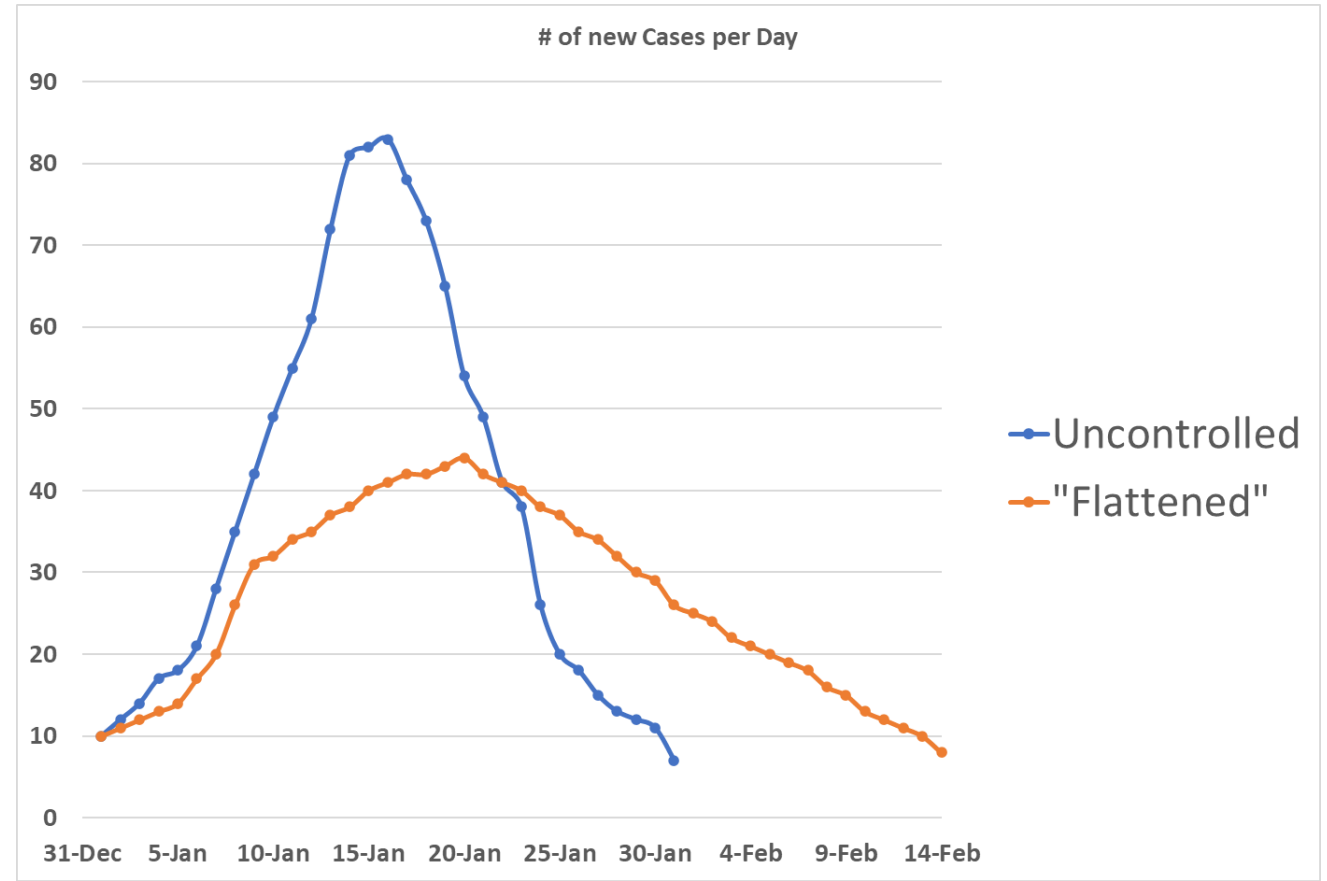
## Practices for Limiting the Spread of the Virus in the Workplace

- Establish a Business Crisis Management Team (BCMT) to oversee and manage the response to workers who become infected with SARS-CoV-2. The team should include key staff from operations, HR, food safety/quality, and safety.
- Investigate every incident involving an employee infected with SARS-CoV.
  - Notify government and local health officials of the illness (if required).
  - Determine the ill employee's movements and close contacts. Advise close contacts that they may have been exposed to the virus but protect the identity and health status of the ill employee.
  - If possible, restrict access to impacted areas until they can be properly sanitized.
  - The BCMT determines whether an employee(s) must be quarantined using CDC guidelines and/or recommendations of local health officials

# What is “Flattening”?

Flattening an Epi Curve means to distribute the new cases more evenly over time to eliminate a high peak.

In this case, there are 1,200 total cases, just spread out over 1 ½ months instead of 1 month



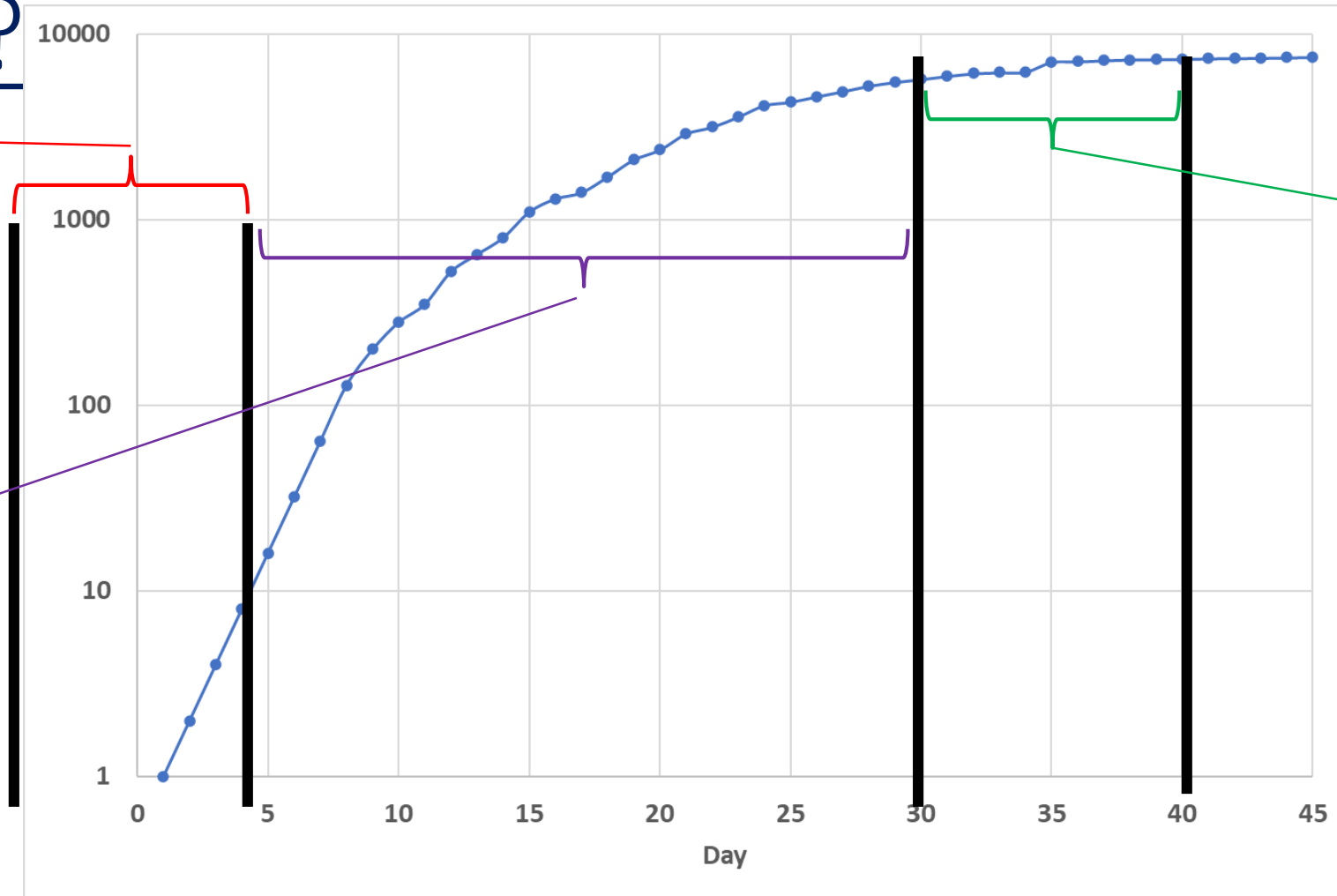
# What is

# “Flattening”?

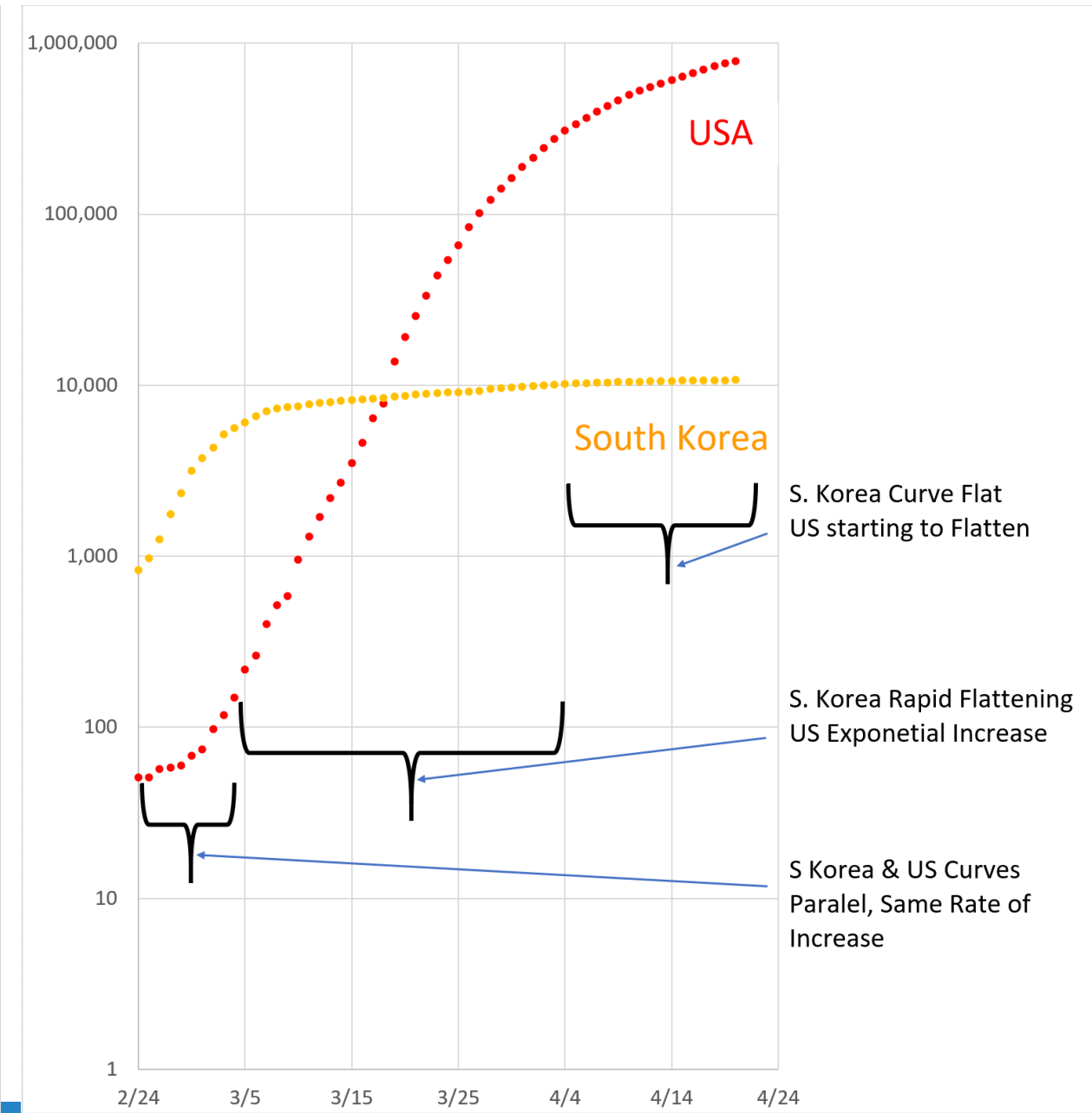
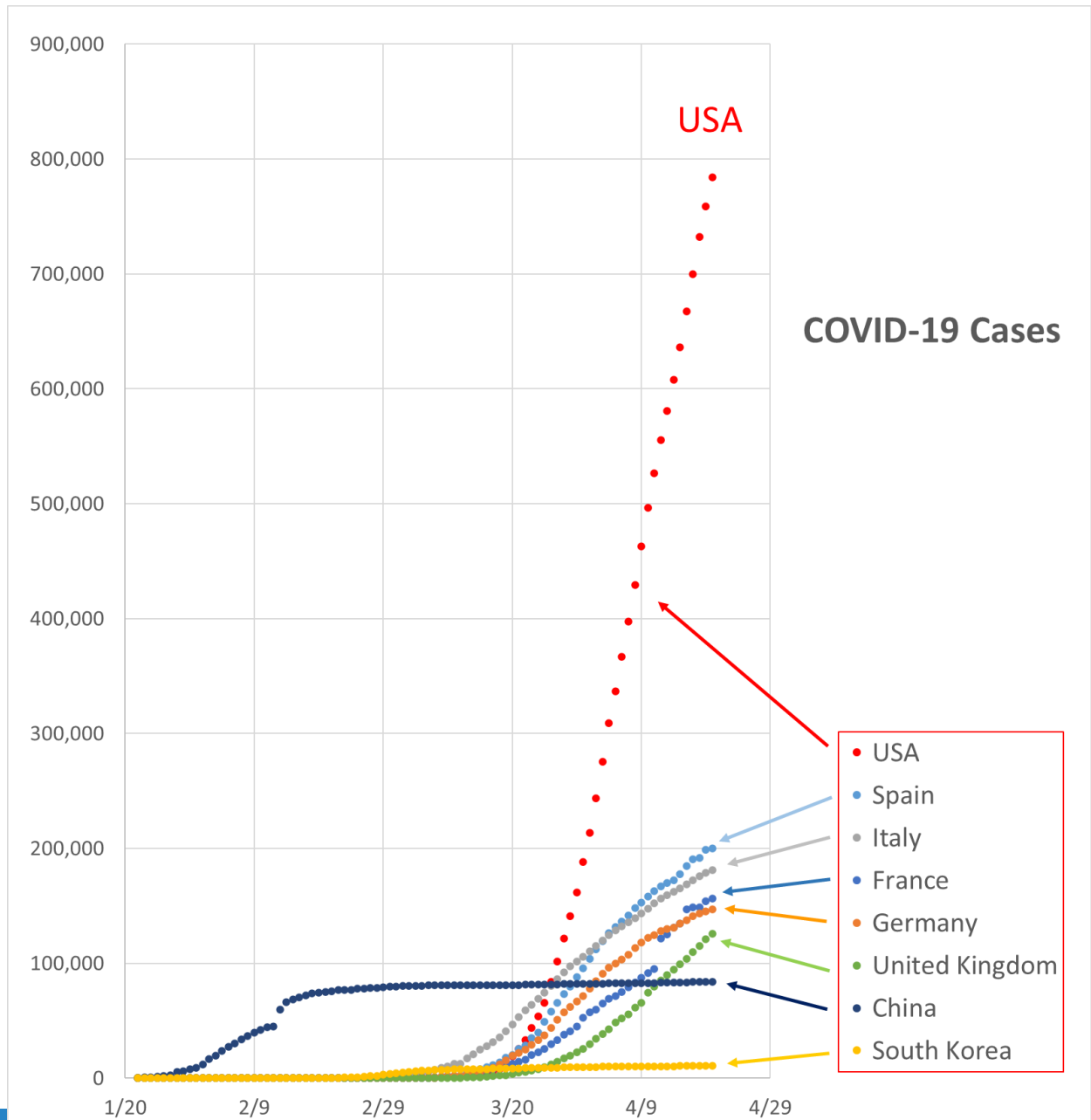
Flattening a cumulative case curve means the rate of increase in the total number of cases decreases

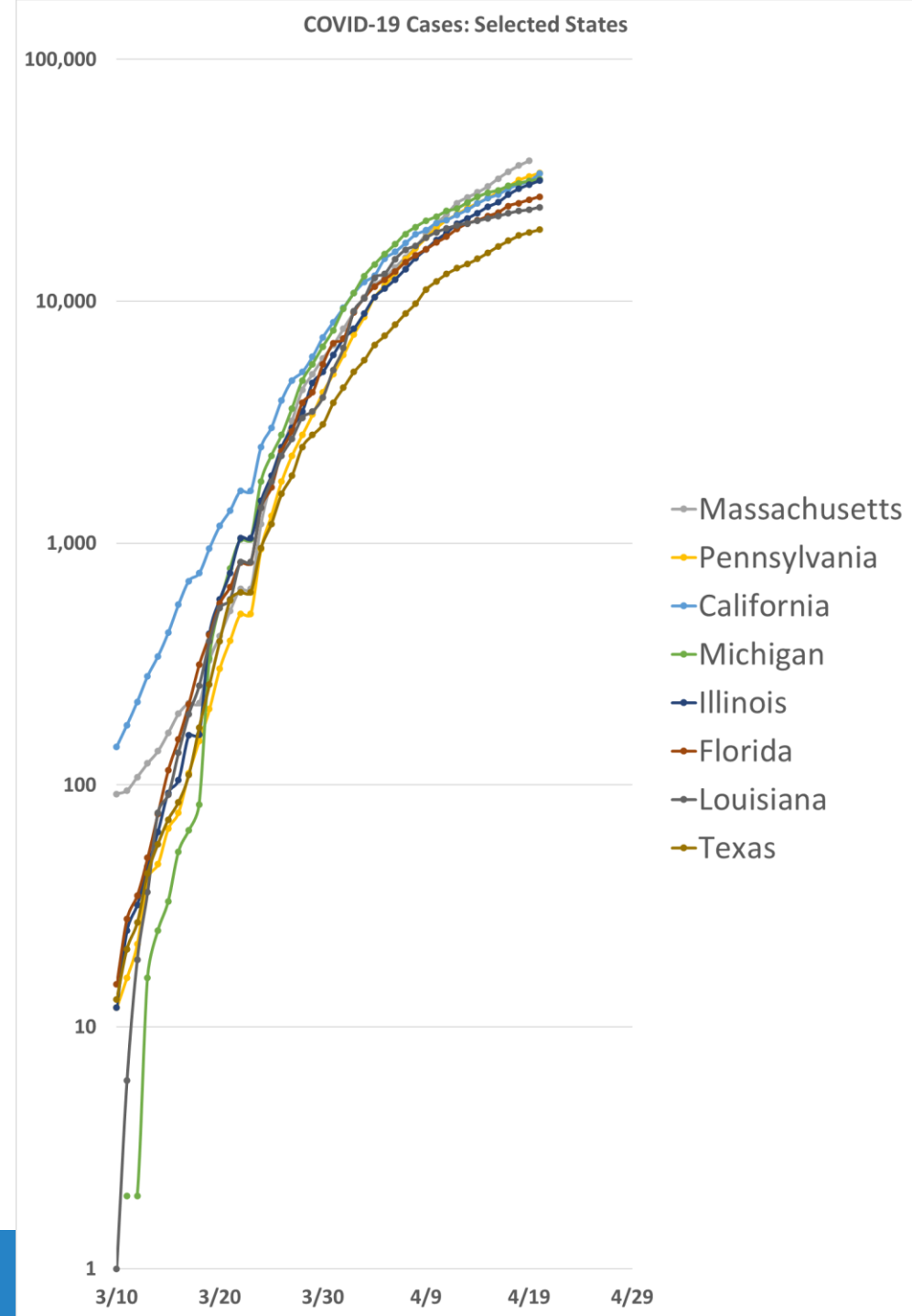
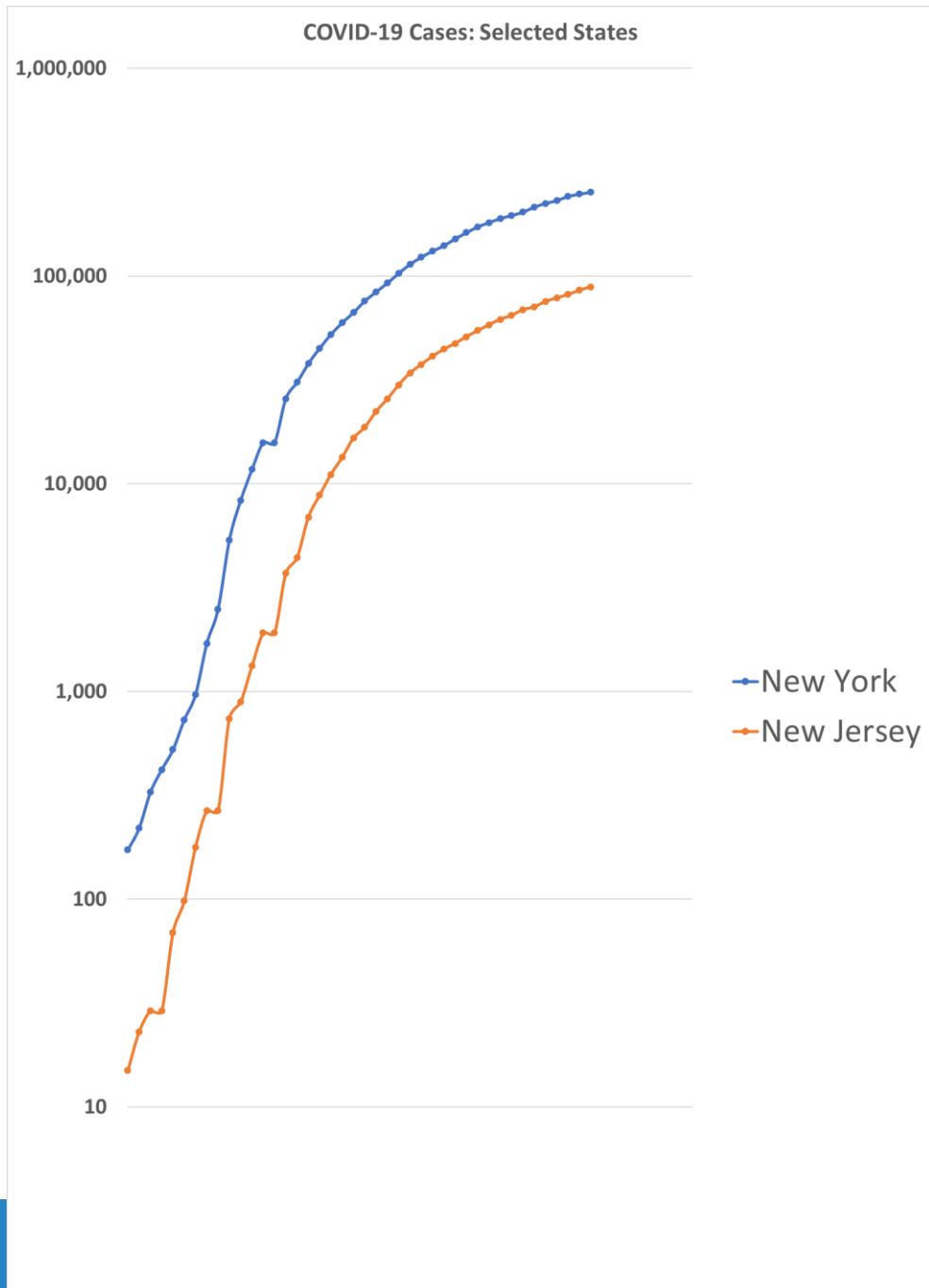
Exponential Phase:  
Exponential increase  
in the # of new cases  
per day

Transition Phase;  
Cases increasing but  
not as fast, curve  
starting to “flatten”



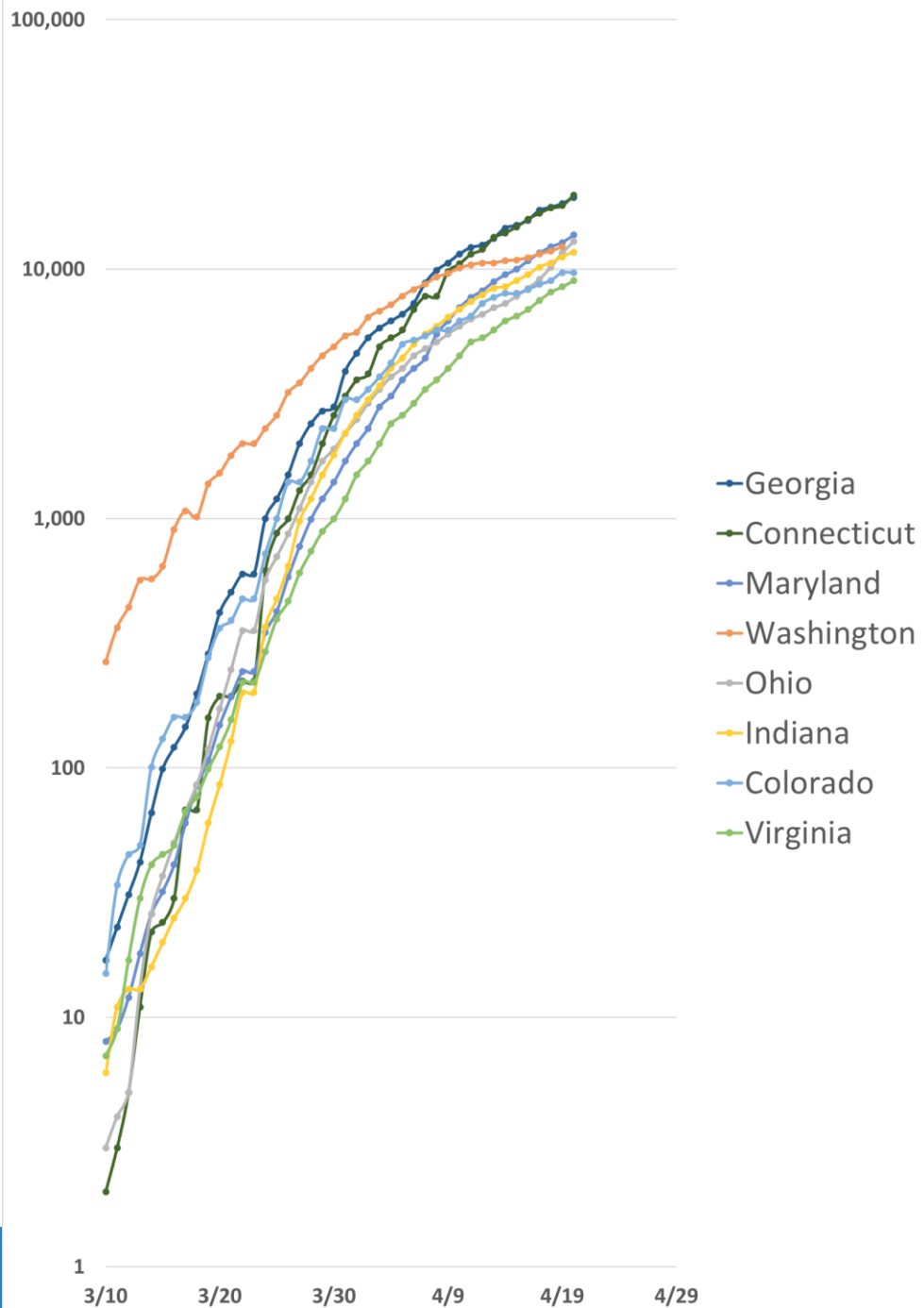
Very slow  
rate/no new  
cases, curve  
“flattened”



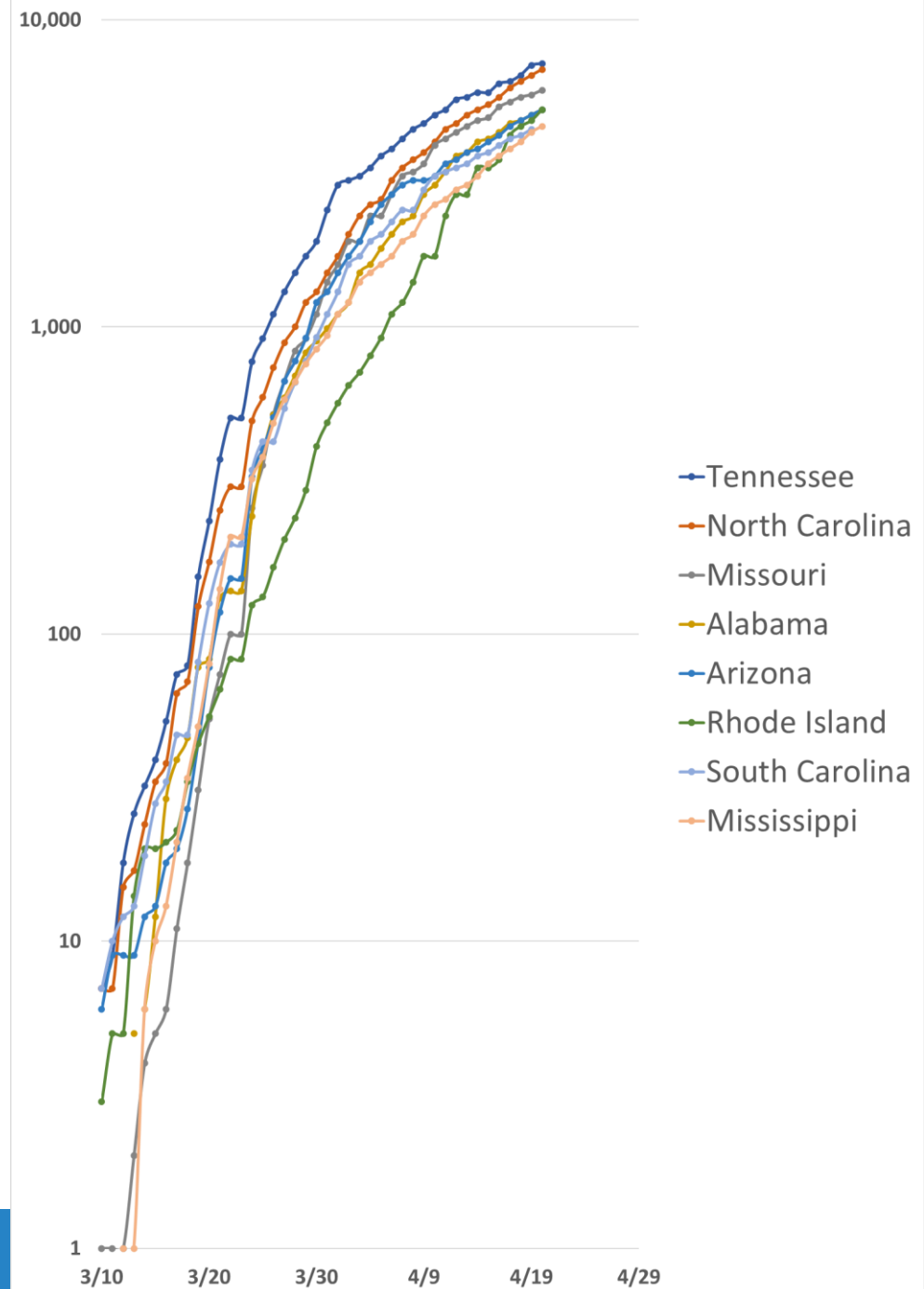




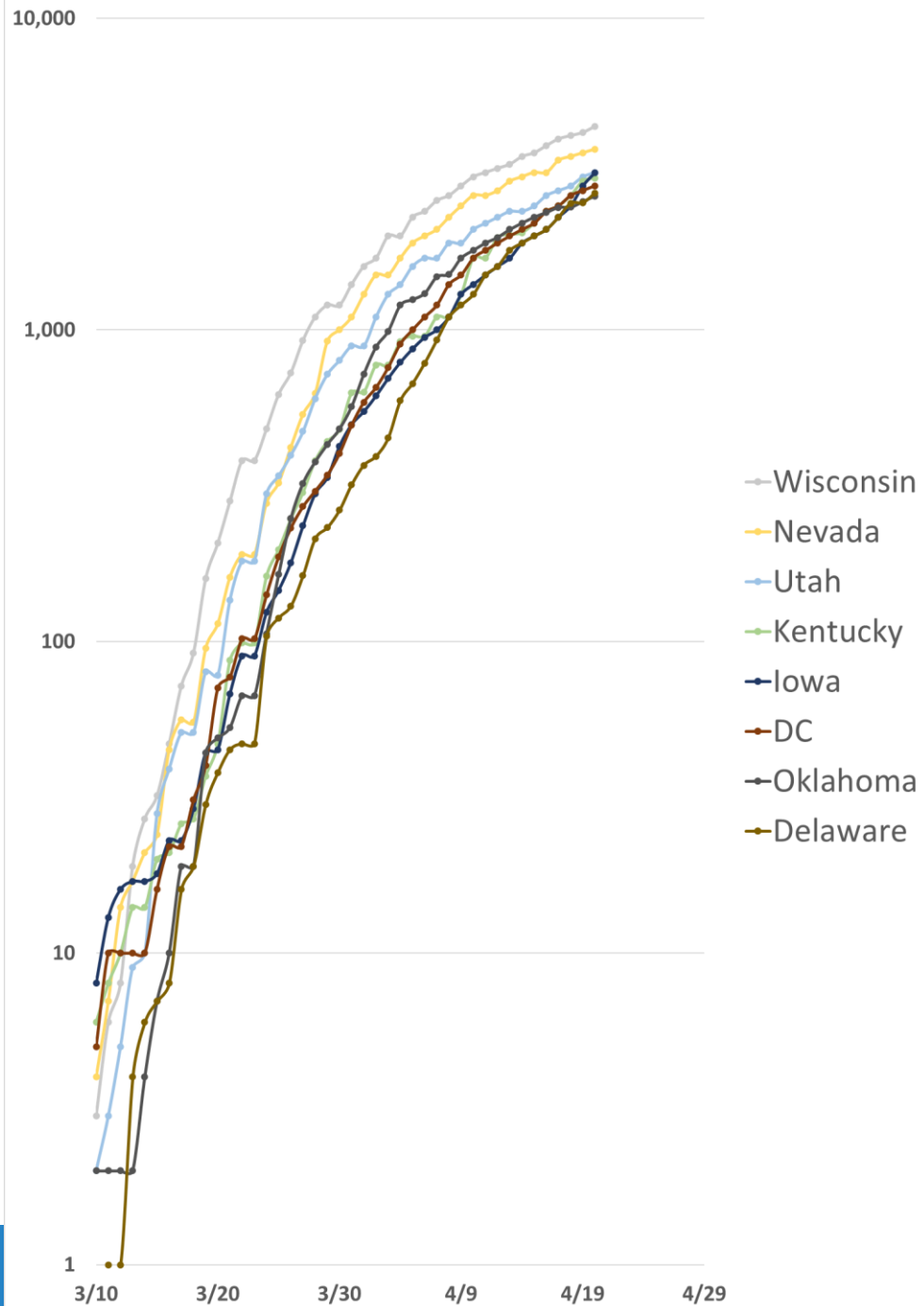
COVID-19 Cases: Selected States



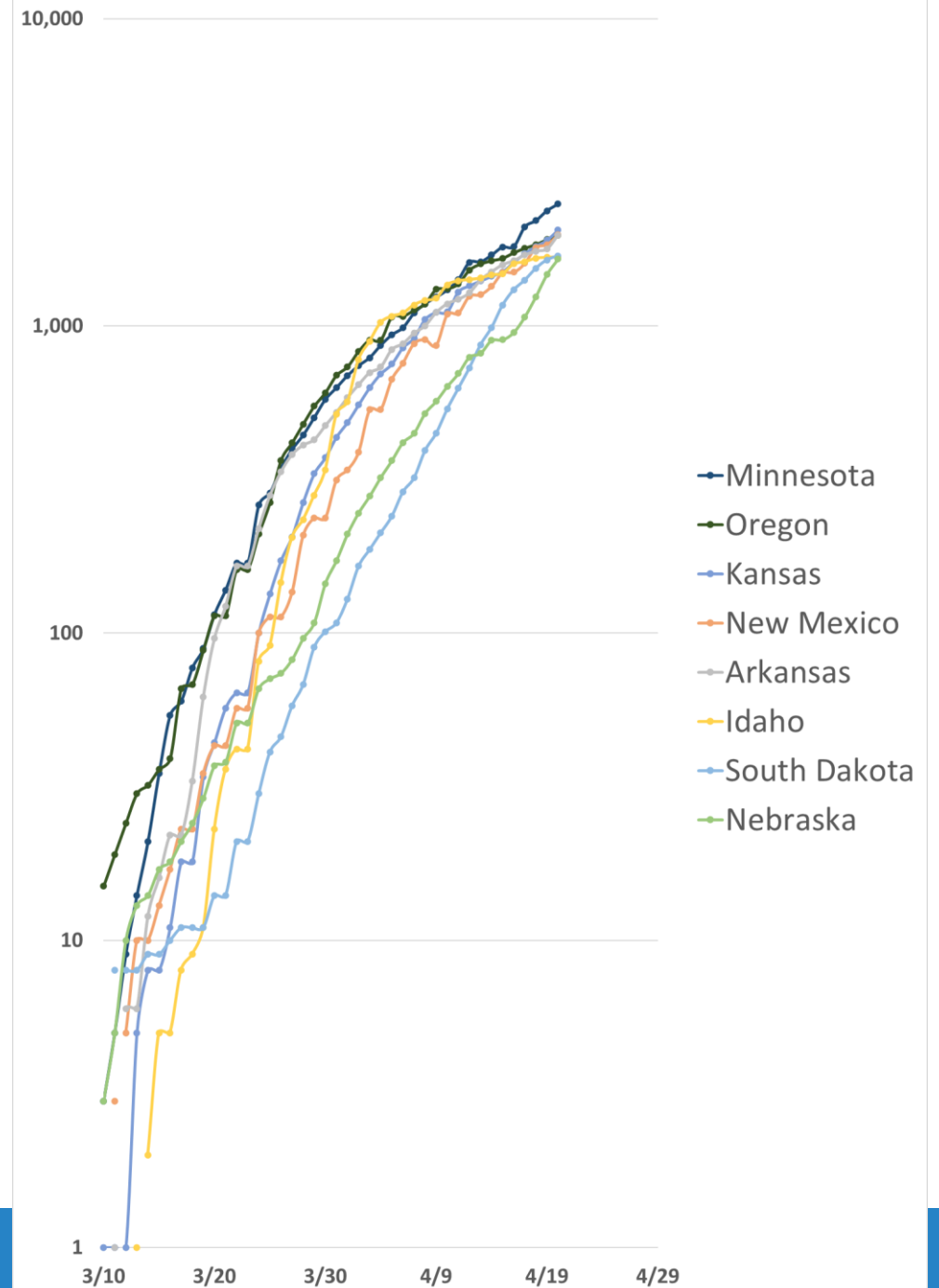
COVID-19 Cases: Selected States



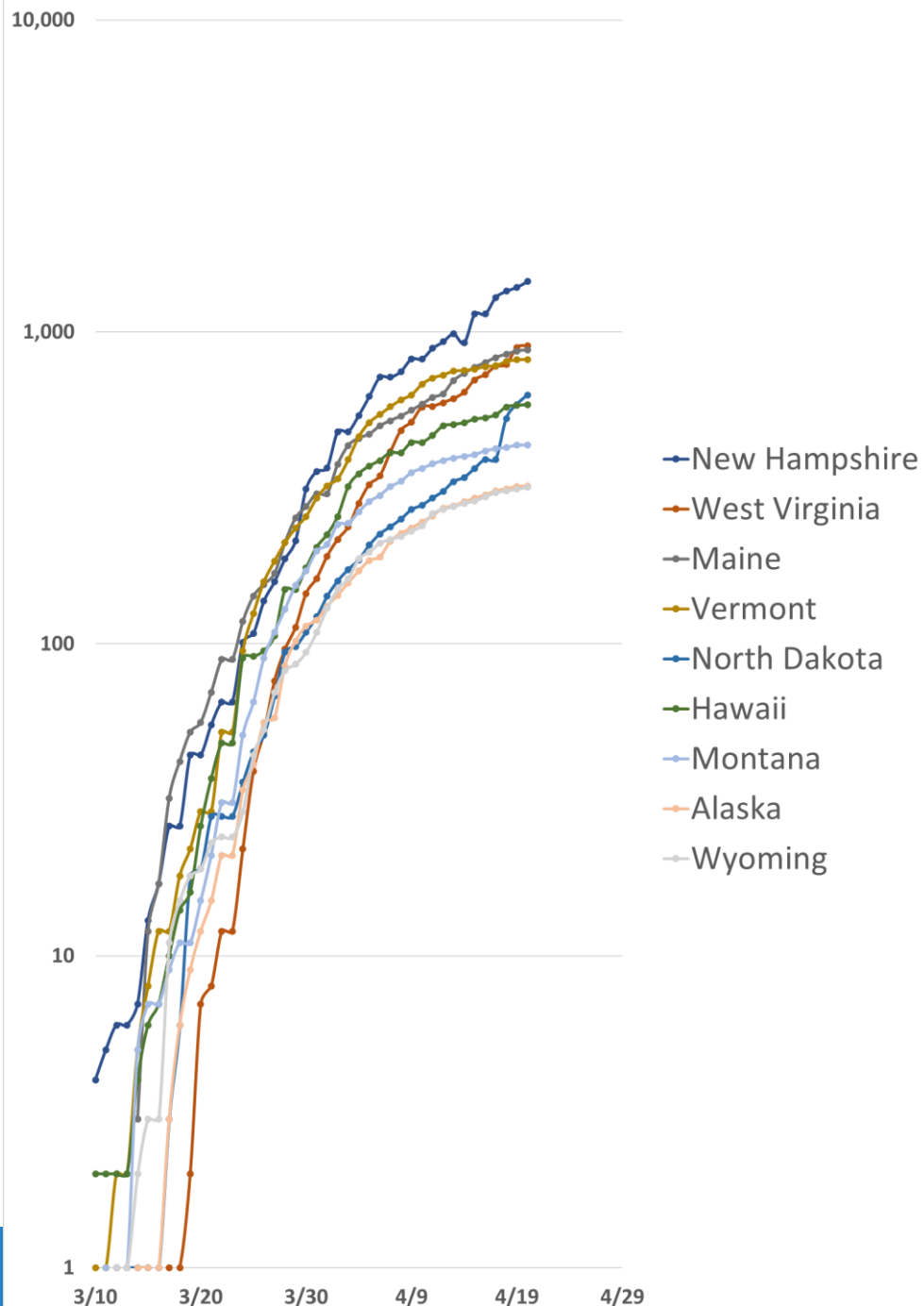
COVID-19 Cases: Selected States



COVID-19 Cases: Selected States



COVID-19 Cases: Selected States



- As evident in the previous slides, virtually all states have passed the Exponential Phase and are now in the Transitional Phase. Unfortunately, only a few are close to “Flattening”
- It isn’t unreasonable to expect to break 1,000,000 cases in the US by the end of the month and 2,000,000 by the mid/end of May if the current trends continue

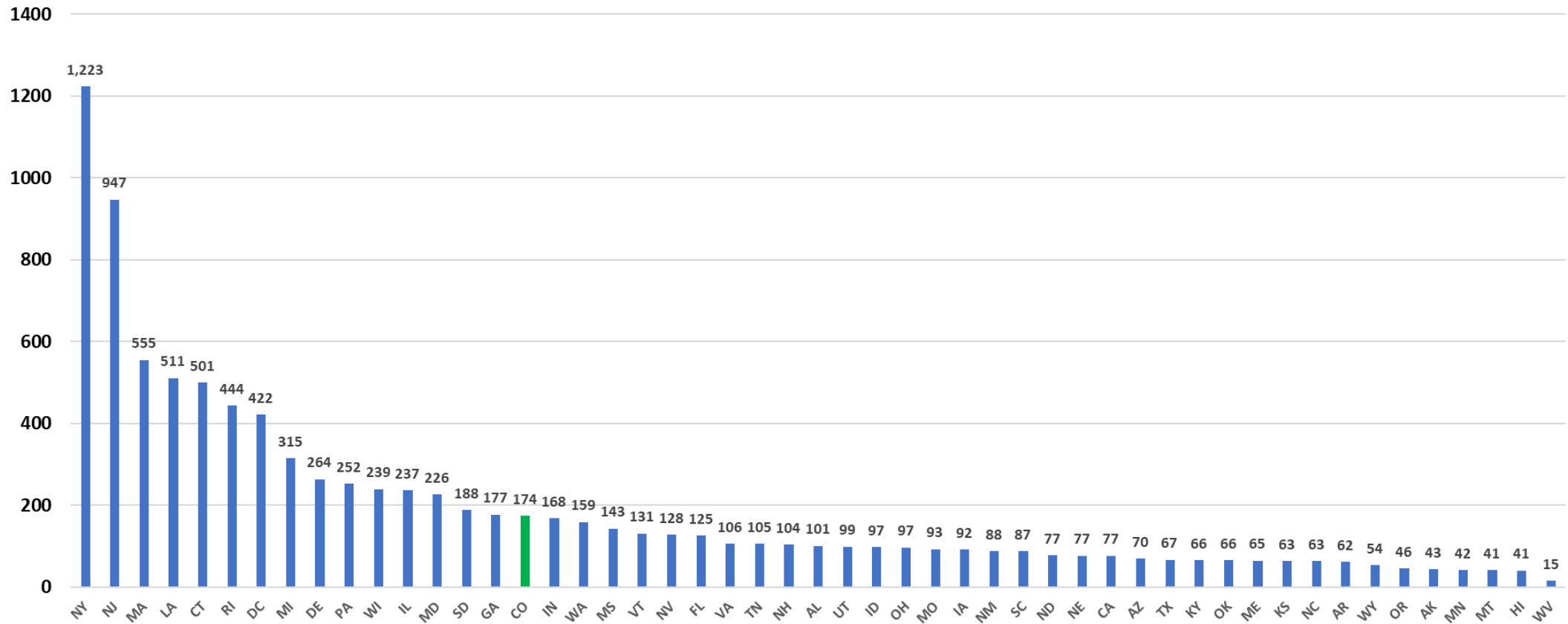
# Determining Local COVID-19 Rates

- There are substantial differences in local rates vs. state, country and world rates
- Some states post data by county/city
- For those that don't, information is posted at John Hopkins COVID-19 Dashboard<sup>1</sup>

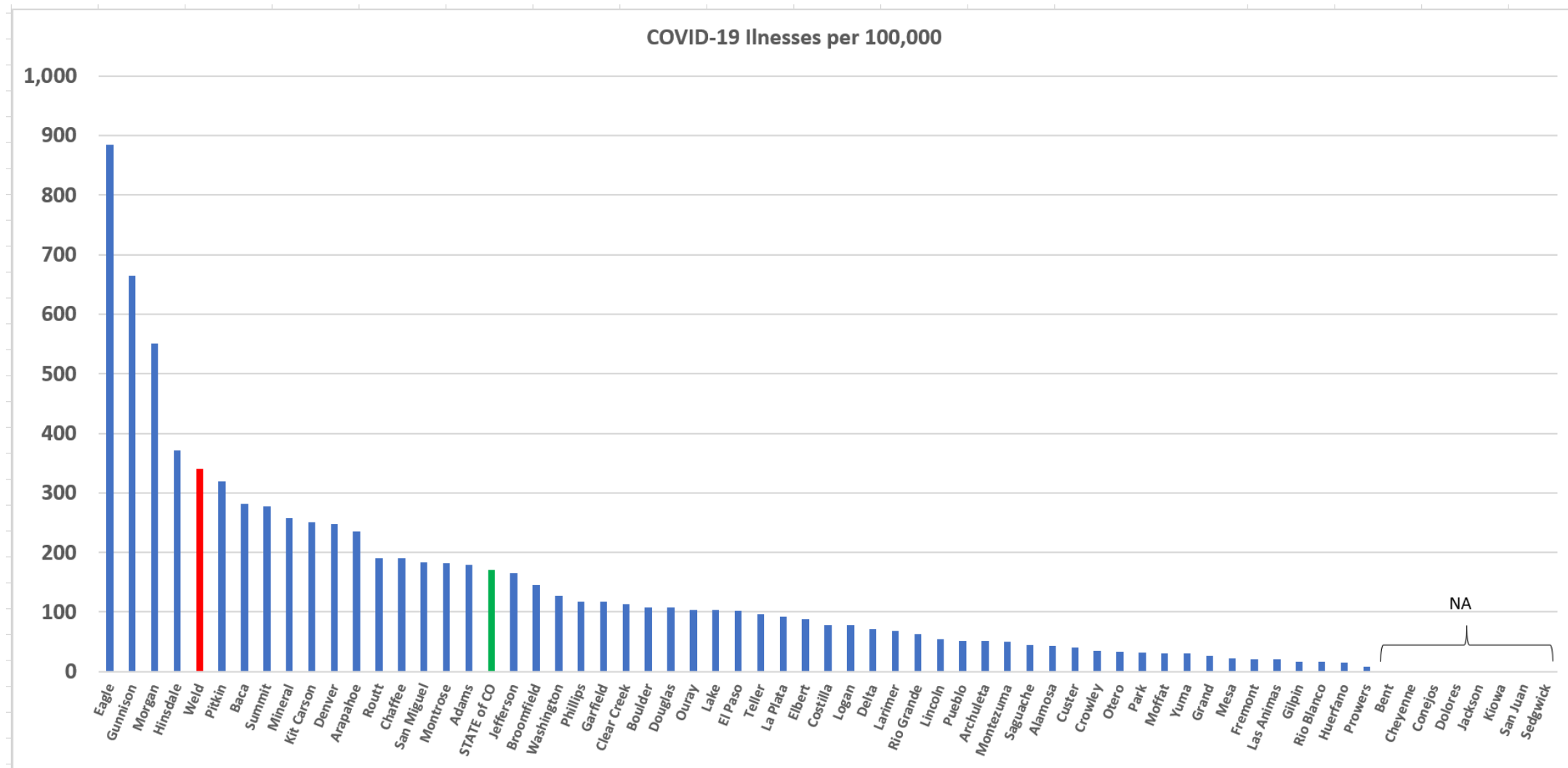
<sup>1</sup> <https://coronavirus.jhu.edu/map.html>

# COVID-19 Rates by State

Covid-19 Cases: Illnesses per 100,000 (4/19)

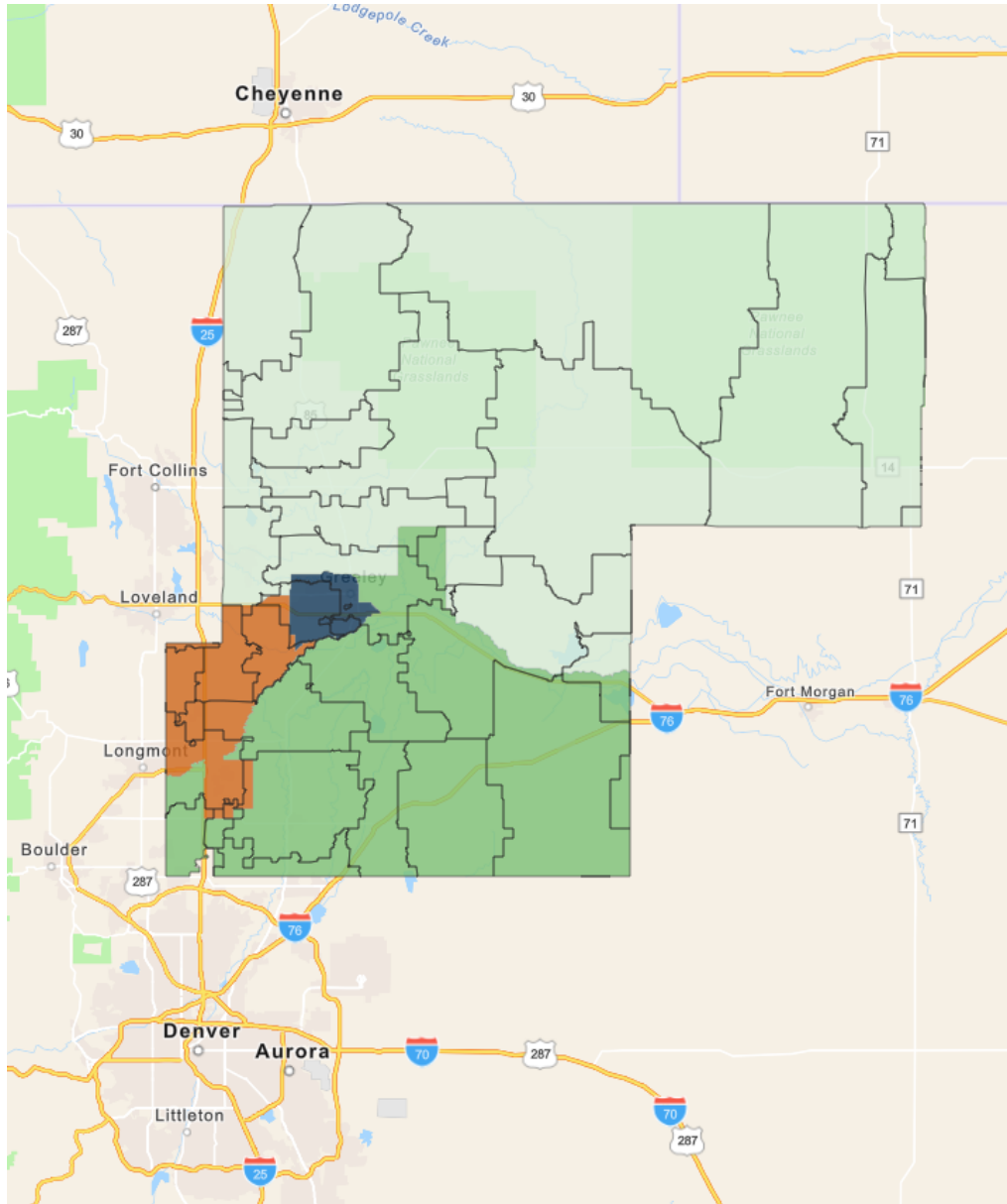
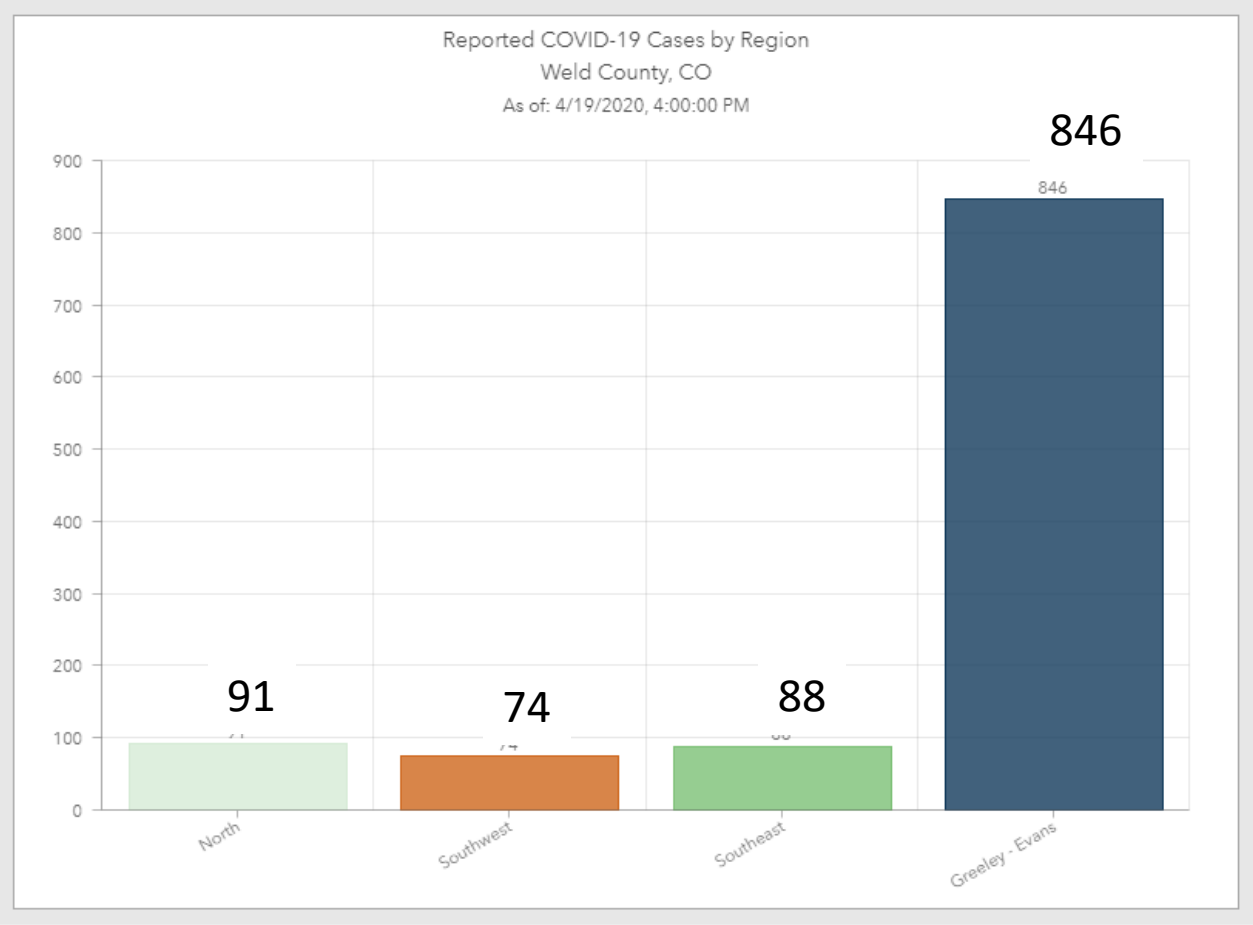


# COVID-19 Rates by County in Colorado



# Weld County Colorado

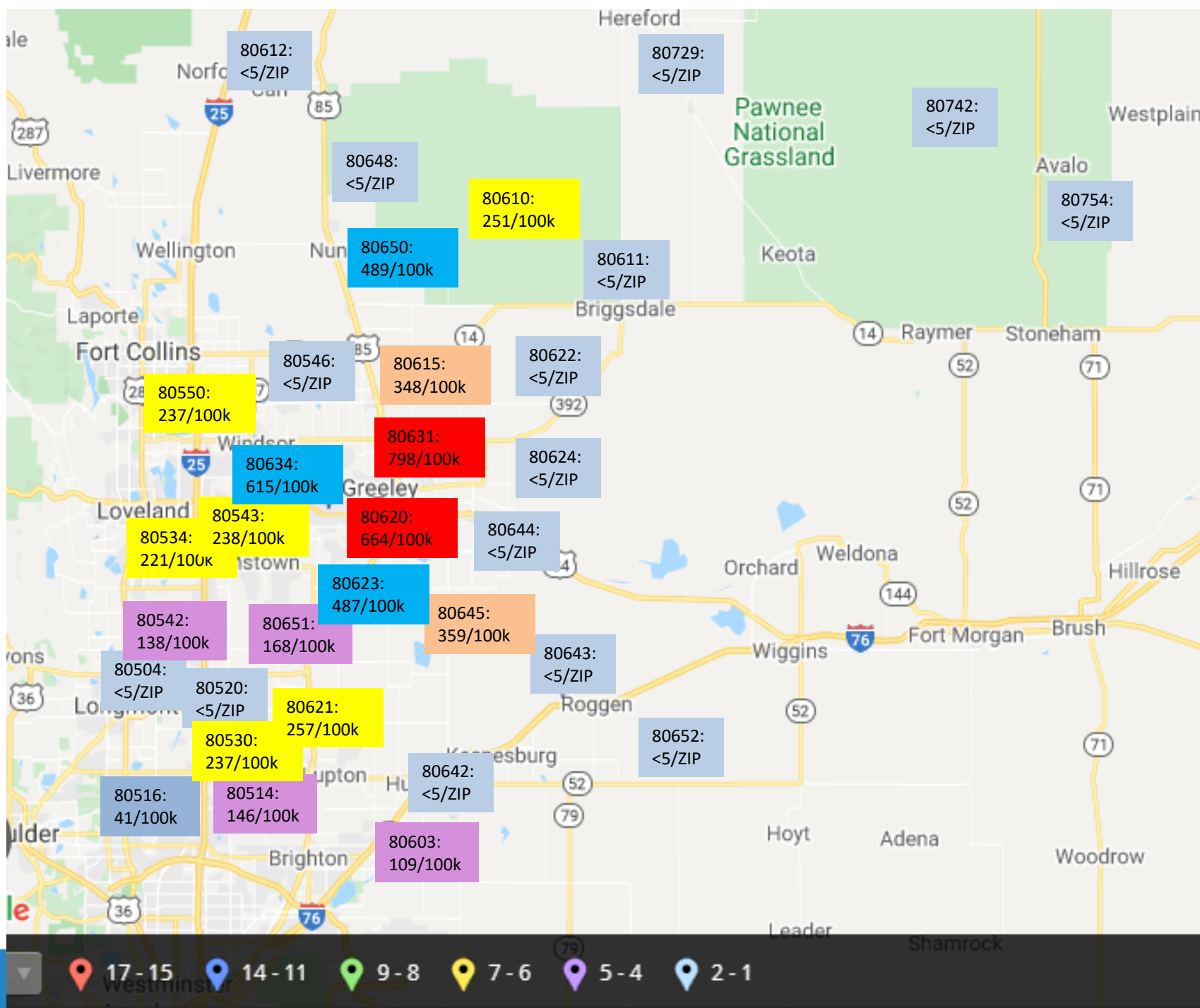
## COVID-19 Cases by Region



# Weld County CO by ZIP Code (4/19)

Illnesses per  
100,000

1	<5 per ZIP
2	5 to 50
3	51 to 100
4	101 to 150
5	151 to 200
6	201 to 250
7	251 to 300
8	301 to 350
9	351 to 400
10	401 to 450
11	451 to 500
12	501 to 550
13	551 to 600
14	601 to 650
15	651 to 700
16	701 to 750
17	751 to 800





# Testing Employees for COVID-19 Infections

- There are two types of testing available:
  - **Molecular testing** (using RT-PCR, isothermal amplification or signal amplification) ) for the presence of specific viral nucleic acid in the sample. These tests directly detect the virus genetic material in a sample taken from the nose or naso-pharynx, sputum, or feces. A positive test indicates that the person is currently infected and may be able to shed the virus.
  - **Antibody testing** that detects the presence of antibodies to the SARS-CoV-2 virus. This test detects antibodies to the virus that were likely formed as a result of a past infection with the virus. Typically, antibodies to the virus form within 2 to 3 weeks after infection and may be present in the blood for many months. This test is not useful in determining whether someone is currently infected with the virus.

See [FDA FAQ on Diagnostic Testing for COVID-19](#)

# Testing Employees for COVID-19 Infections

- Testing for the viral RNA will detect the virus during the time that the person is contagious.
  - A poorly collected sample may not collect detectable numbers of virus particles. Like food testing, sampling is an important part of testing
  - While infected personnel can easily be identified, the asymptomatic infected individuals can only be detected by testing
- All test methods have some risk of false negative and false positive results
- The blood antibody test does not determine whether a person is infected now. It can determine if a person has been infected in the past (sometime before 14-21 days ago).
- The utility of the antibody test is to measure herd immunity.

# Testing Employees for COVID-19 Infection

- The goal of testing:
  - To identify infected persons who are asymptomatic or in the early stages of illness before symptoms develop,
  - As an added measure to reduce the risk of having an infected person in the workplace.
- Testing should be limited to employees who must work on-site.
- Testing should be done only with the written consent of the employee.
- Samples for testing should be collected by a medical professional who is experienced in collecting samples for COVID-19 testing and who has appropriate personal protective equipment.

# Testing Employees for COVID-19 Infection

- The communication of test results must be compliant with HIPAA regulations.
- HIPAA generally requires an authorization signed by the patient to allow a covered entity to disclose health information to an employer.
- Authorizations must meet specific requirements described in the regulations, including that they:
  - Be in writing
  - Be signed by patient or patient's legal representative
  - State what information may be disclosed and who is authorized to receive it
  - Provide specified information about the patient's rights
- State-specific laws may further restrict disclosures of health information to employers beyond what HIPAA permits.

*This does not constitute legal advice and is not intended to convey legal counsel. To obtain legal advice on this subject an attorney-client relationship must exist. Please contact us to discuss your specific requirements.*

# Testing Employees for COVID-19 Infection

- HIPAA allows health care providers to make an authorization to disclose health information a condition of providing specific health care.
  - For example, if a test is being performed for the purpose of providing the results to an individual's employer, a health care provider can refuse to perform the test unless the individual signs an authorization allowing the disclosure of the test results to the individual's employer.
- Additional employment considerations relating the requirement of release of medical information, such as OSHA, and ADA and limiting access to information.

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# How to Setup a Testing program

- Execute a legally-binding contract with a duly licensed local Physician(s)/Nurse Practitioner who will order and receive the results of the COVID-19 testing for the Employees that receive testing
- The Physician must agree to collect and submit Employee's sample with the test requisition, and to notify the applicable state or local public health authority of the COVID-19 test results in accordance with applicable state and local law.
- The Employer will secure from each Employee to be tested an appropriate signed written informed consent, in accordance with applicable laws:
  - a. authorizing the lab to perform the COVID-19 test as requested
  - b. requesting and authorizing the Physician to report the COVID-19 test results to the Employer
  - c. notifying the Employee that test results will also be released by the Physician to the applicable state or local public health authority, to the extent required by law

# Environmental Monitoring for SARS-CoV-2

- Welfare areas: Lunchrooms, locker rooms, bathrooms, door nubs, high touch areas can be sampled and analyzed for the presence of the virus
- Testing can be done proactively to detect the virus
- Testing can be done to document sanitation after employees test positive, or a plant is shut down.
- We have found the virus in locker rooms, bathrooms, door knobs, and desks

# IEH SARS-CoV-2 Resources

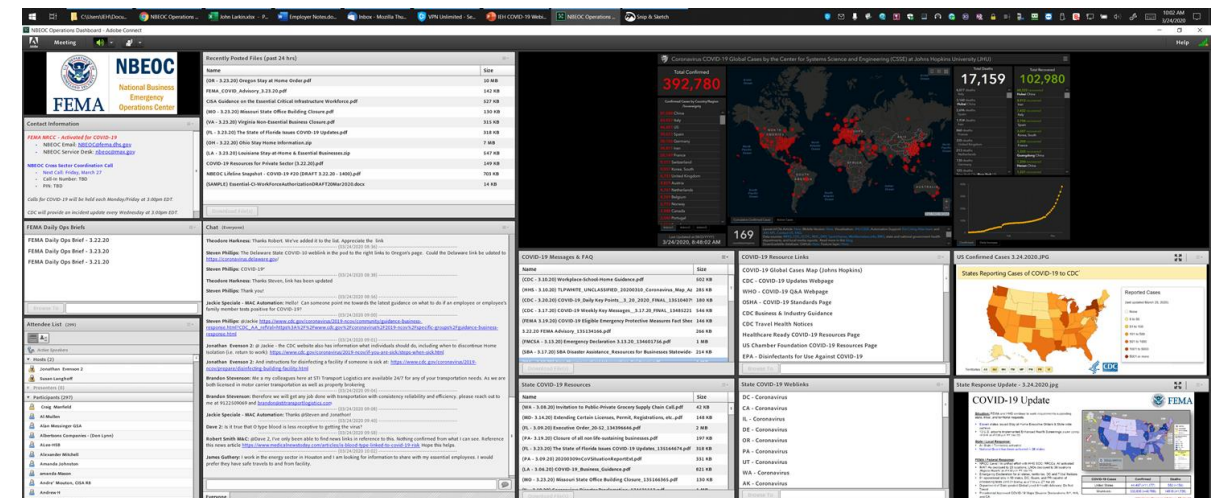
- We have set up a high complexity clinical laboratory in Seattle
- We have developed a test for the detection of SARS-CoV-2 genome
- The test is validated to FDA standards, and filed with FDA for approval
- Turnaround time for samples: <24 hours
- We are in the process of developing an antibody test
- We have a supply of face masks (surgical and KN95) and face shields for our clients
- We have purchased surgical mask production lines to reduce dependency on imported masks





# Important Web Links

- [IEH Website for SARS-CoV2 Updates](#)
- [Food Industry Recommended Protocols When Employee/Customer Tests Positive for COVID-19](#)
- FEMA - National Business Emergency Operations Center (NBEOC)  
Dashboard - <https://fema.connectsolutions.com/nbeoc>  
Email – [NBEOC@fema.dhs.gov](mailto:NBEOC@fema.dhs.gov)
- [OSHA – Preparing Workplaces for COVID-19](#)





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# Thank You

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