

# Rescue from the Tiger King and Viral King

Ali S. Khan, MD, MPH, MBA

Assistant Surgeon General USPHS (Ret.)

Dean, College of Public Health

April 28<sup>th</sup> 2020





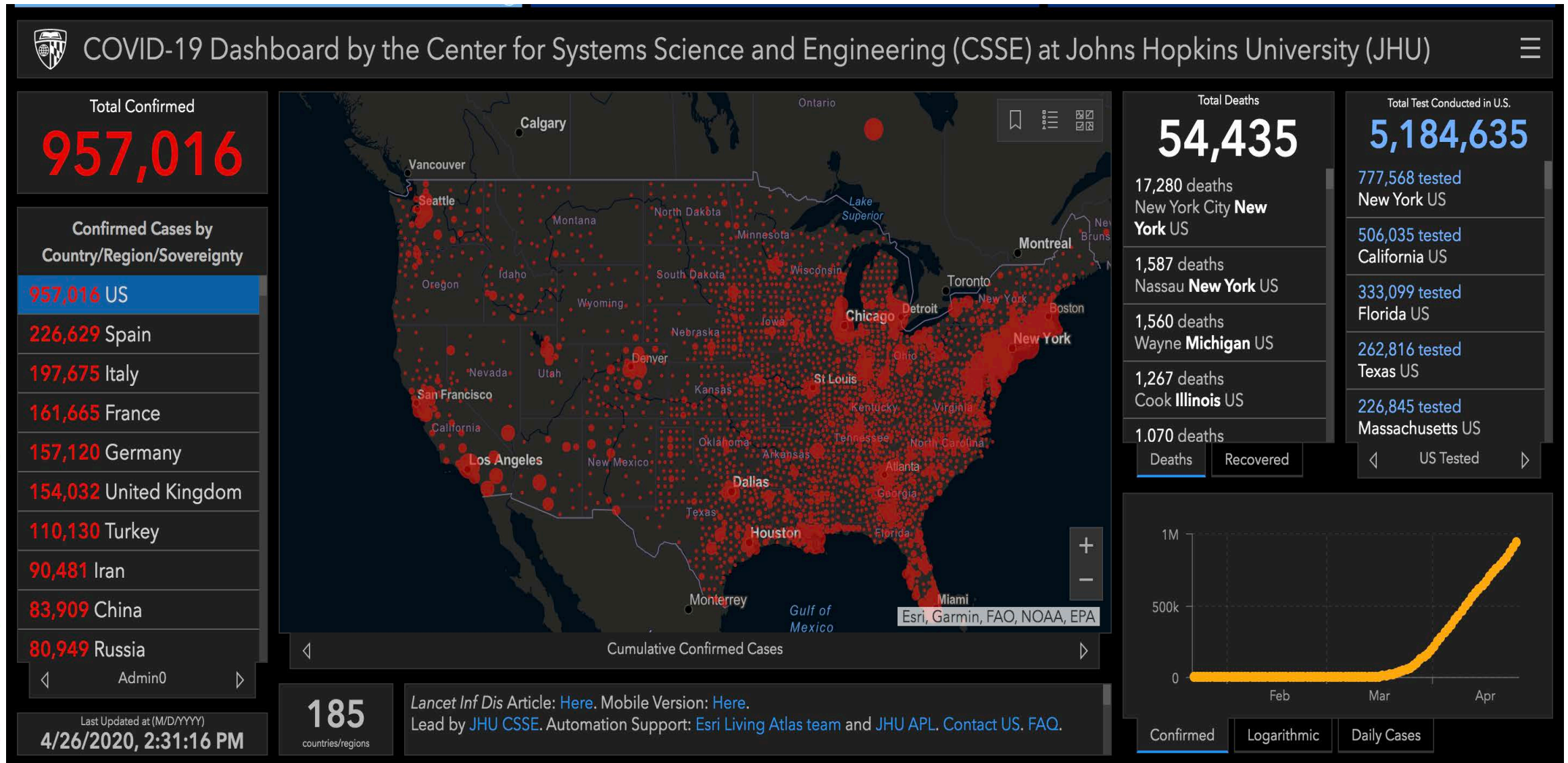
- What does it mean to peak and why is it important?
- How will we know when we peak, is it possible to peak again if we move too quickly?
- How long does it take to resume to some form of normalcy?
- Will guidelines move to 25 people, then 50, then 100 and so on?
- What is summer going to look like?



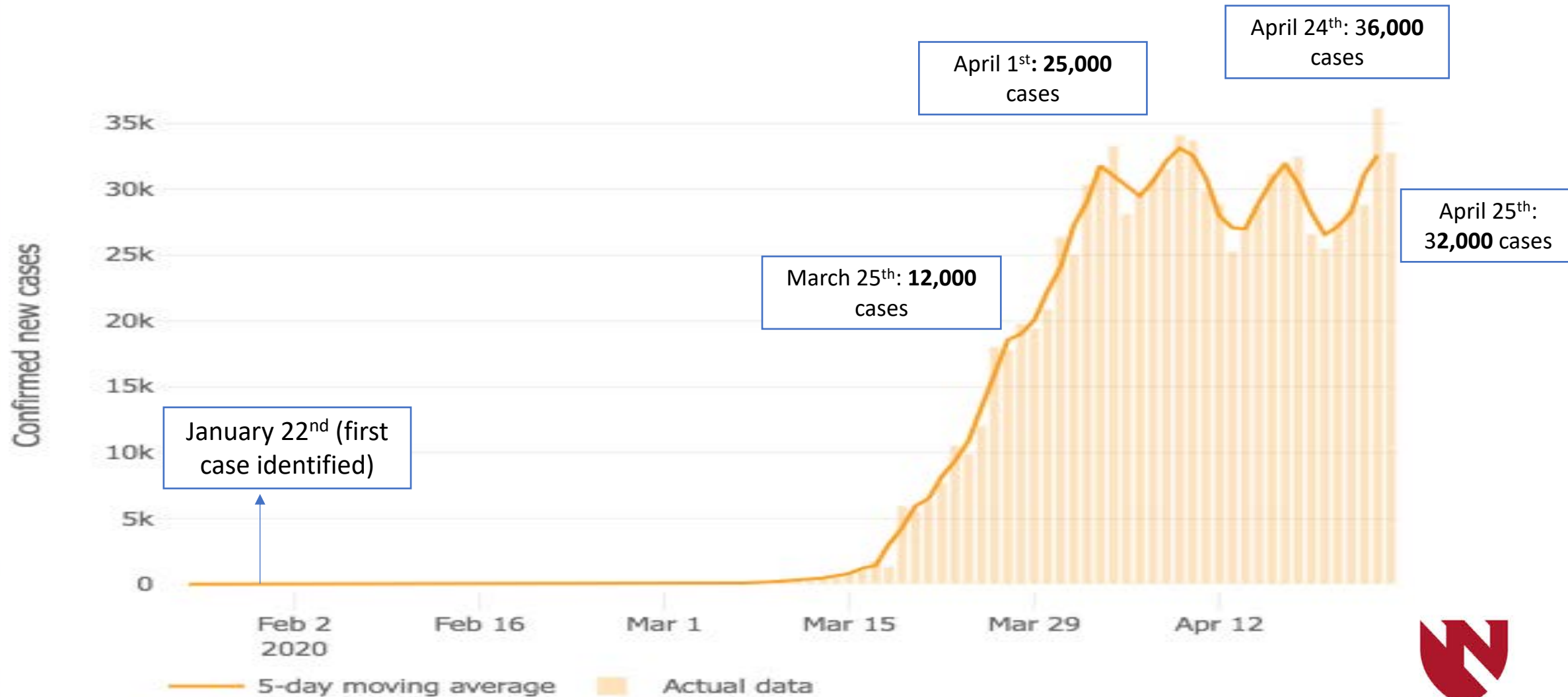




# COVID-19 in the United States



# Daily confirmed new cases in U.S





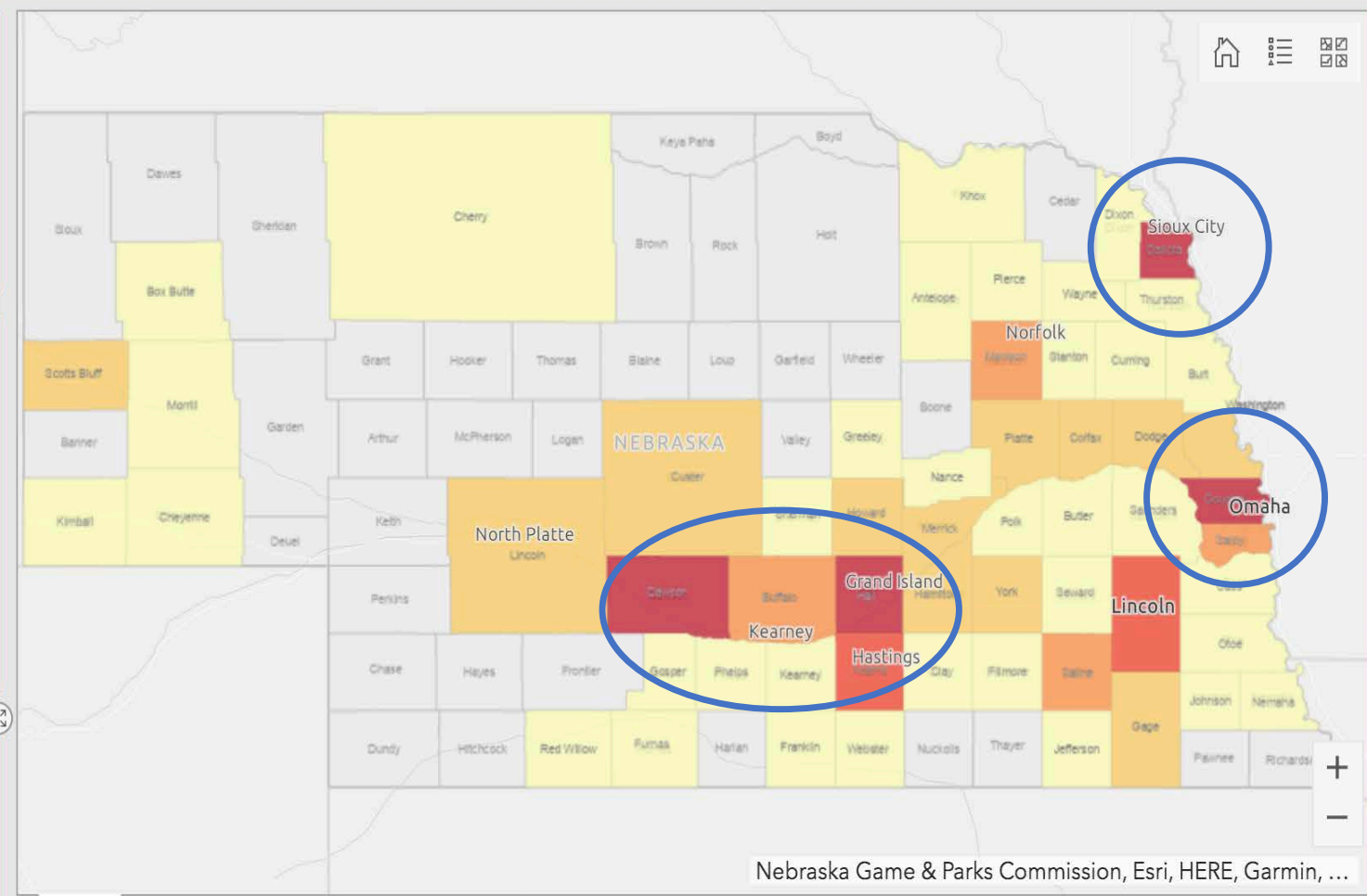
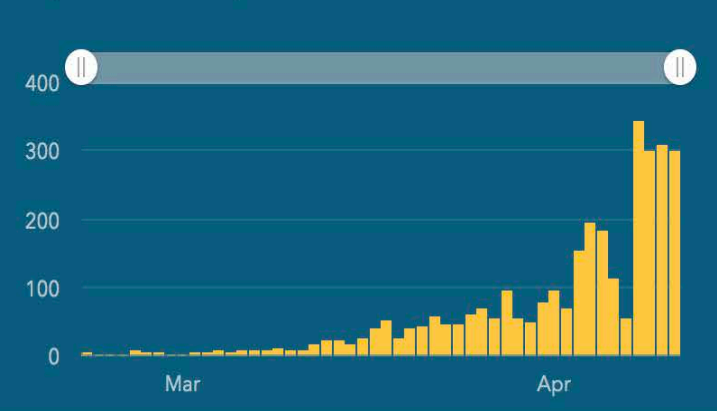
Total positive cases  
**3,028**

Total tested  
**22,525**

Tested: Not detected  
**19,335**  
\*Does not include inconclusive results

Deaths  
**56**

New positive cases by date results were received



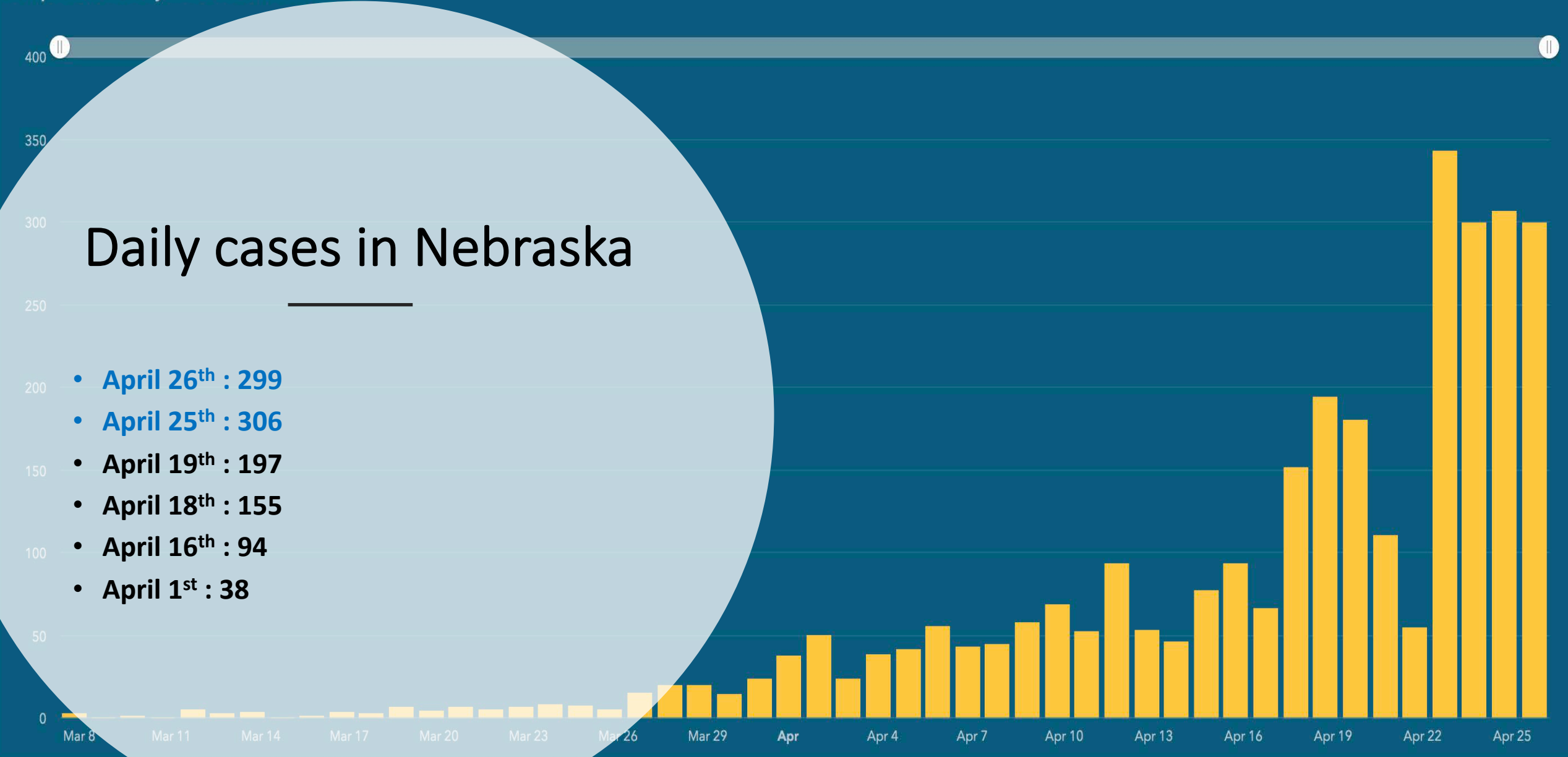
Number of positive tests by county	
876	Hall
419	Douglas
403	Dakota
367	Dawson
140	Lancaster
129	Adams
87	Sarpy
86	Buffalo
65	Madison
60	Saline
46	Hamilton
45	Dodge
29	Gage
27	Scotts Bluff
27	Platte

Map Hospital Capacity About the Data

Contact Nebraska Department of Health and Human Services (DHHS)  
<http://dhhs.ne.gov/coronavirus>  
Information Line: (402) 552-6645  
*Data are representative of Nebraska residents, are provisional and data reported by the local health department should be considered the most up to date.*  
Updated 5:45 PM CDT, 4/26/2020



New positive cases by date results were received



## Tyson Foods suspends its largest pork plant amid Iowa outbreak

The plant can process about 19,500 hogs per day, accounting for nearly 4% of U.S. pork processing capacity, according to the National Pork Board.



## 12 outbreaks reported at Iowa's long-term care facilities

40  
Shares



Updated: 11:05 AM CDT Apr 23, 2021

# Super spreading events

HOME / NEWS / BEST STATES / NEBRASKA NEWS

## 10 Workers at Nebraska Beef Plant Test Positive for COVID-19

Ten workers at a central Nebraska beef plant have tested positive for the new coronavirus as the number of confirmed cases continues to rise.

By Associated Press, Wire Service Content April 3, 2020, at 6:40 p.m.



## 92 percent of inmates tested for COVID-19 at Indiana prison receive positive results

BY ARIS FOLLEY - 04/23/20 12:48 PM EDT

131 COMMENTS

2,695 SHARES

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# Escape Plans

- Elimination/Eradication
- Vaccine
- Drug
- Herd Immunity
- Containment & a New Better Normal



# SARS 2003 Eradication

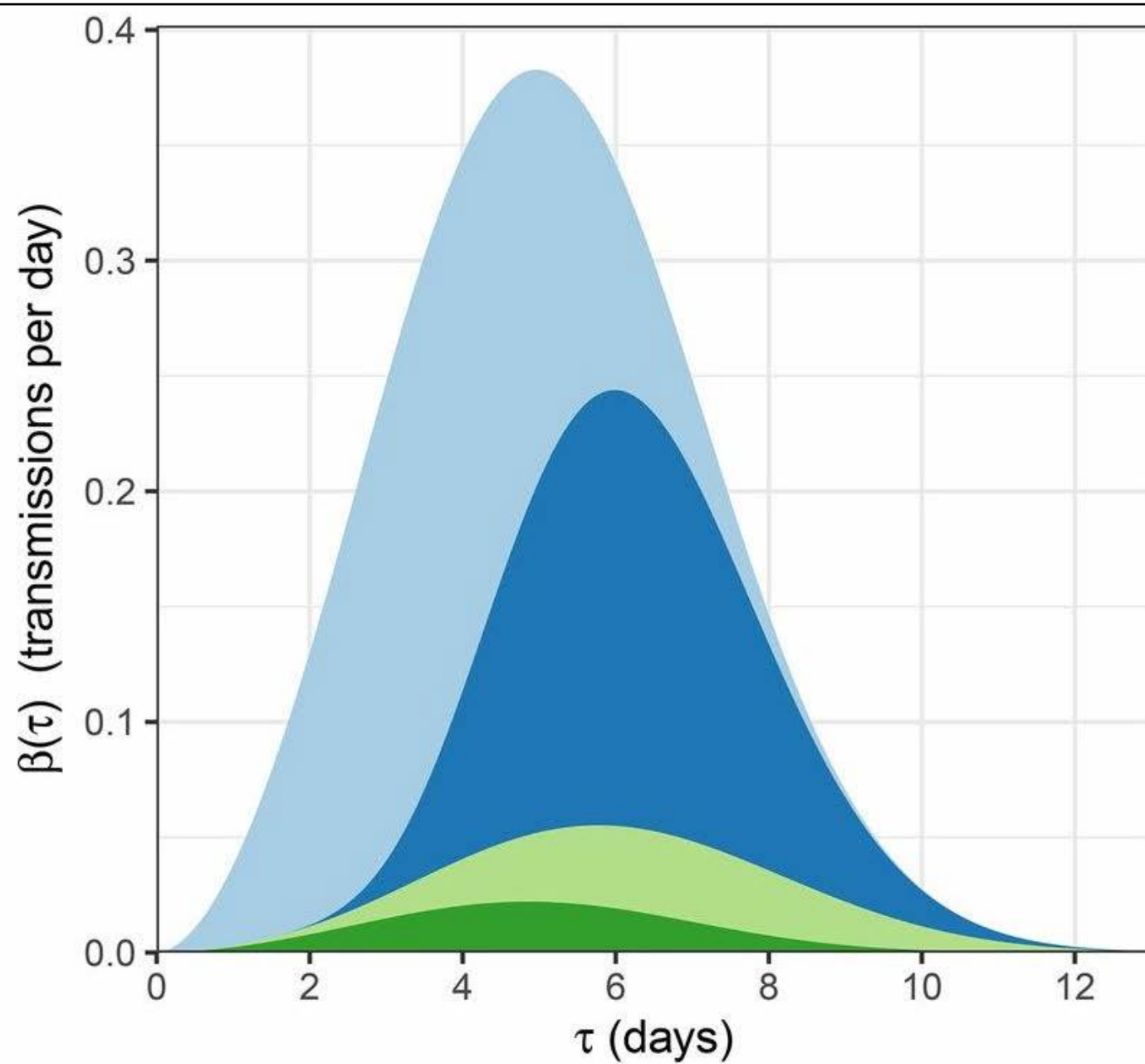


## Pathogen features also helped

- No presymptomatic transmission – mainly healthcare
- Did not spread widely to developing countries



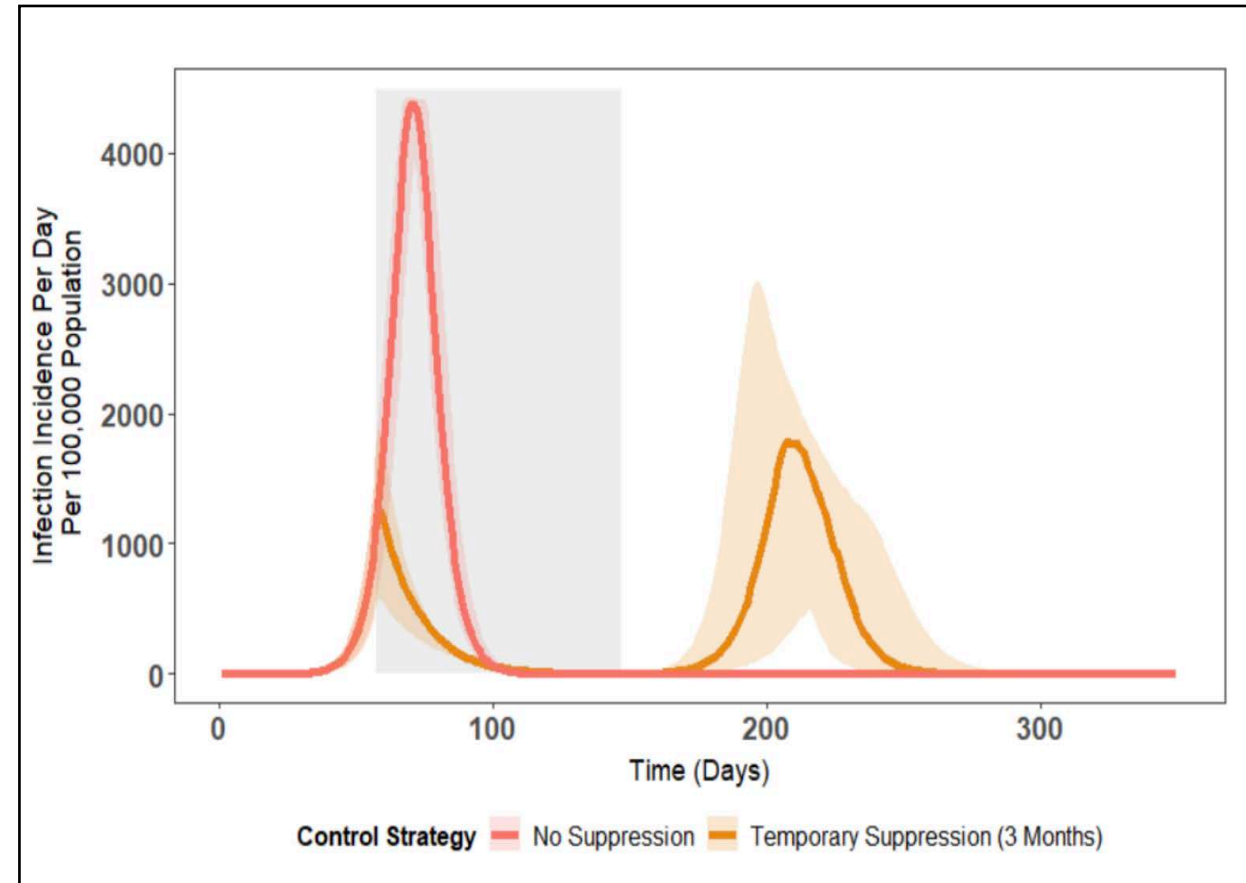
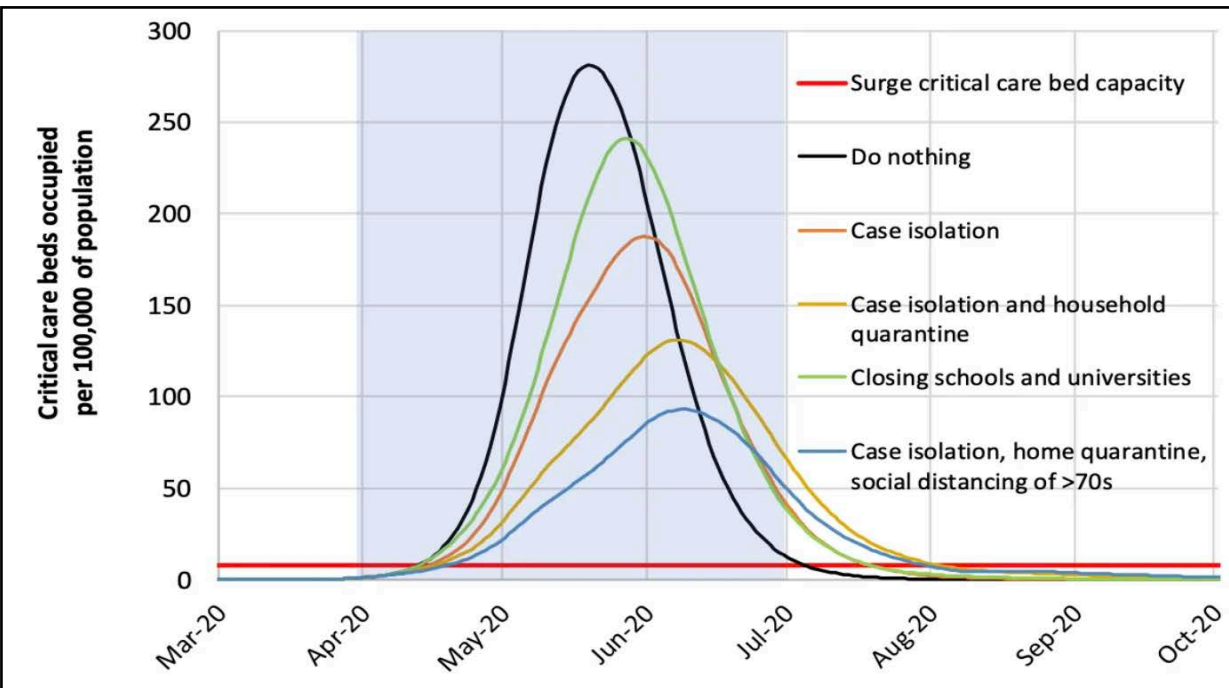




$R_0 = 2.0$ :

- $R_p = 0.9$  from pre-symptomatic
- $R_s = 0.8$  from symptomatic
- $R_e = 0.2$  from environmental
- $R_a = 0.1$  from asymptomatic

# Mitigation or Suppression or Containment



Source: Patrick GT Walker, Charles Whittaker, Oliver Watson et al. The Global Impact of COVID-19 and Strategies for Mitigation and Suppression. Imperial College London (2020), doi: <https://doi.org/10.25561/77735>



# Opening Up America Again

## ➤ WHO 6 steps

1. Disease under control
2. Able to detect, test, isolate & trace
3. Hot spot risks minimized
4. Prevention at schools & other essential places
5. Manage imported cases
6. Educated, engaged communities

## ➤ President 3-phases

### Phase 1

- ALL VULNERABLE INDIVIDUALS should continue to shelter in place.
- MINIMIZE NON-ESSENTIAL TRAVEL
- ENCOURAGE TELEWORK

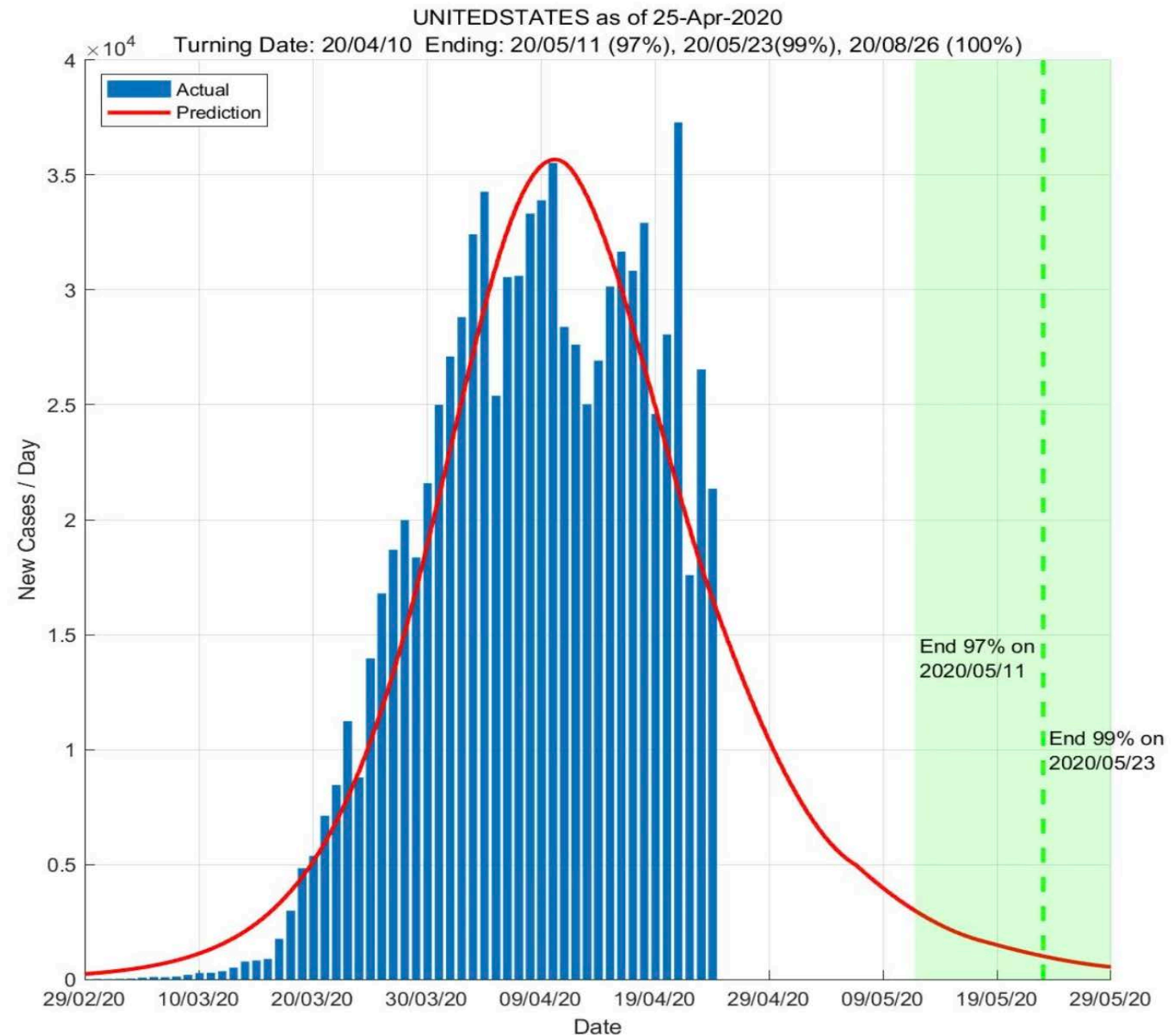
### Phase 2

- ALL VULNERABLE INDIVIDUALS should continue to shelter in place.
- NON-ESSENTIAL TRAVEL can resume.
- ENCOURAGE TELEWORK

### Phase 3

- VULNERABLE INDIVIDUALS can resume public interaction
- Resume UNRESTRICTED STAFFING of worksites.

# When will COVID-19 End?



Data-Driven Estimation of end dates (As of April 25, 2020)

Source: <https://ddi.sutd.edu.sg/>



# CoVID-2019 Model Projections for Nebraska (Hospital resources use)

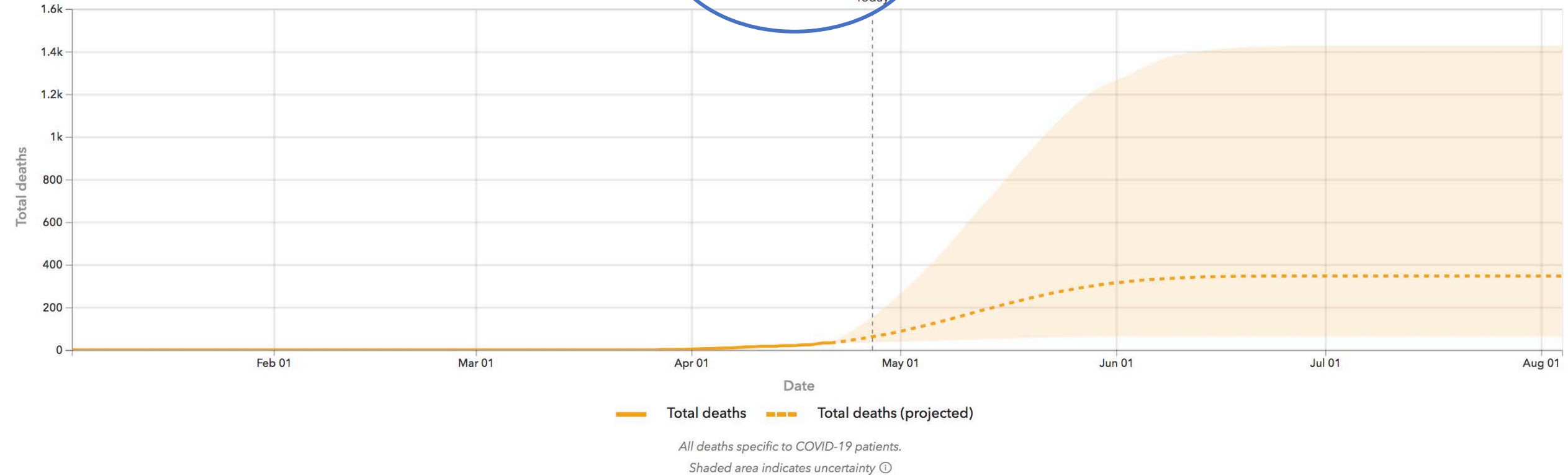


Total deaths

**347 COVID-19 deaths**

projected by August 4, 2020

Today



**CoVID-2019 Model Projections for Nebraska (total deaths)**

## US Daily Cumulative Totals - 4 pm ET

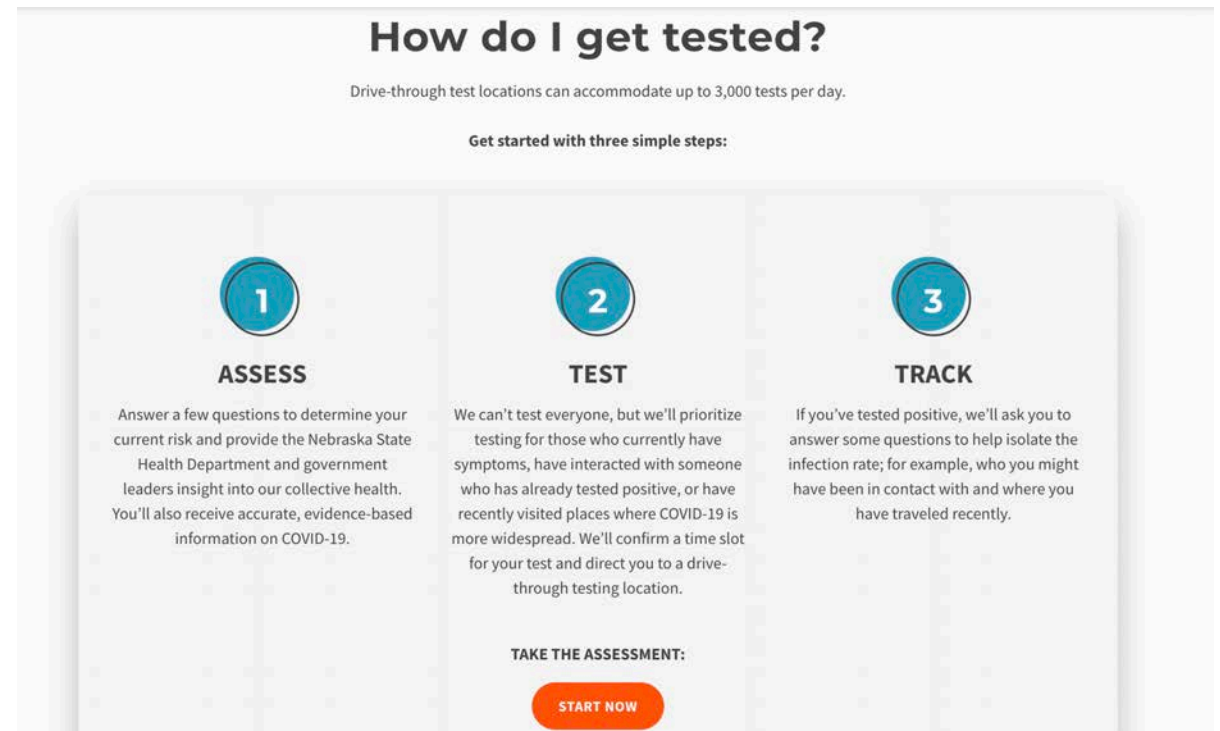
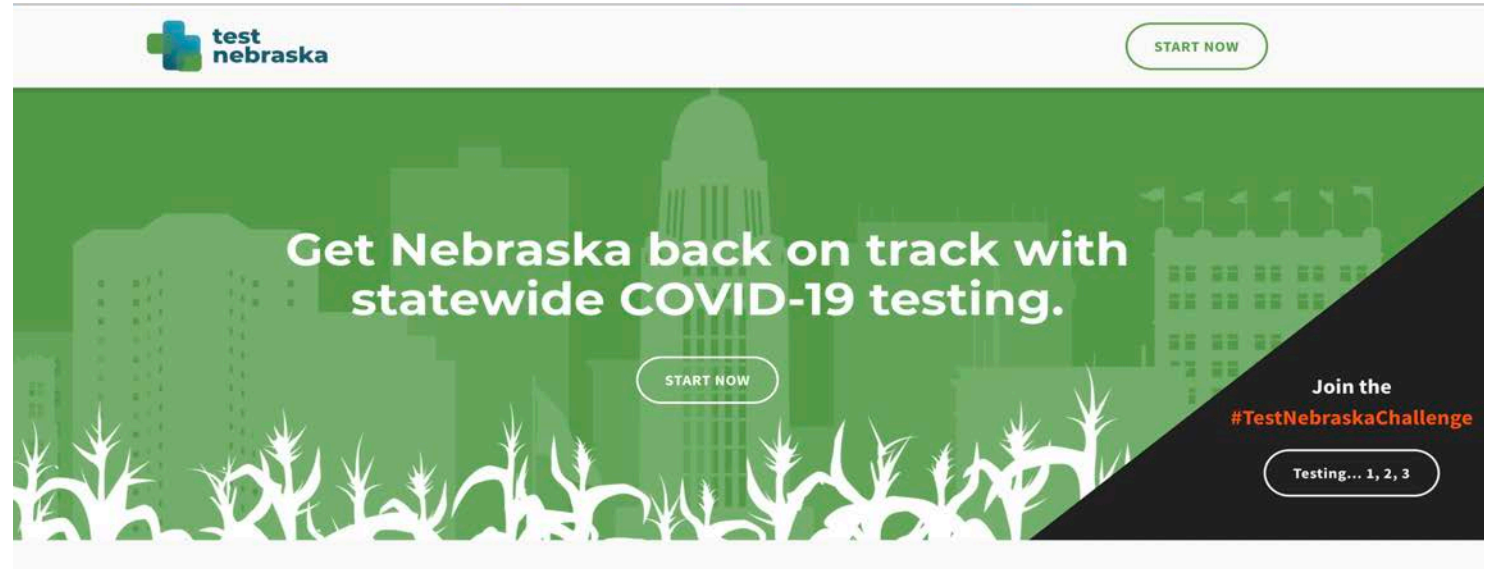
Date	States Tracked	New Tests	Positive	Negative	Pos + Neg	Pending
Sun Apr 26 2020	56	256,444	959,056	4,482,023	5,441,079	4,445
Sat Apr 25 2020	56	298,284	931,698	4,252,937	5,184,635	5,315
Fri Apr 24 2020	56	226,101	890,816	3,995,535	4,886,351	4,396
Thu Apr 23 2020	56	191,055	859,318	3,800,932	4,660,250	4,258
Wed Apr 22 2020	56	313,608	827,963	3,641,232	4,469,195	4,191
Tue Apr 21 2020	56	151,540	800,305	3,355,282	4,155,587	3,956
Mon Apr 20 2020	56	137,900	773,020	3,231,027	4,004,047	4,037





# Nebraska expanding testing

- On its first day (April 21<sup>st</sup>), over **20,000 registered** for testing.
- Governor Ricketts; “the state will be able to conduct **3,000 tests a day** with federal funding paying for the cost”.



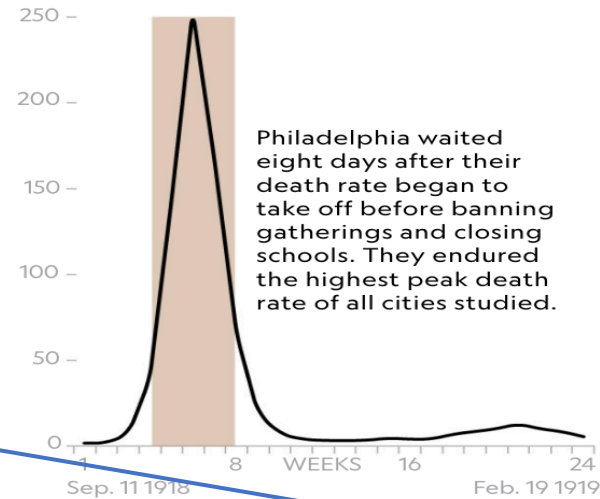
# The history could repeat itself!!

## Evidence from the 1918 flu pandemic

St. Louis and San Francisco had double curve (2<sup>nd</sup> wave) after **social distancing, face masks, and public gathering restrictions were relaxed**

### Philadelphia

**748** Deaths per 100,000 after 24 weeks of pandemic



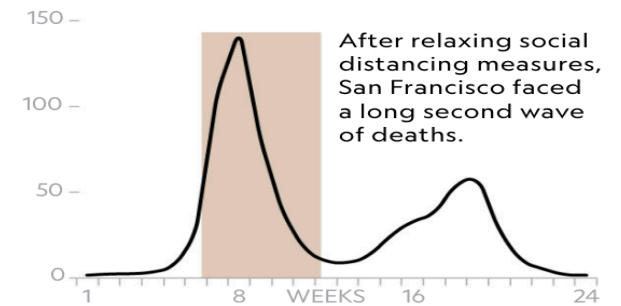
Weekly deaths per 100,000 from 1918 pandemic above the expected rate



Duration of social distancing measures

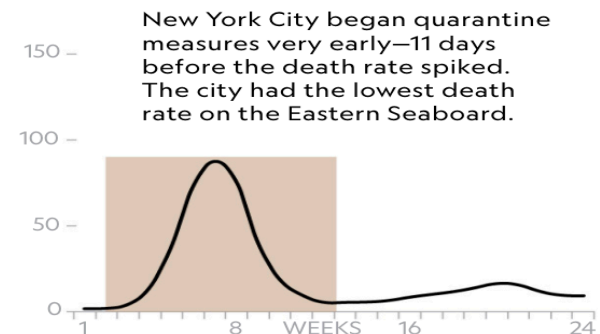
### San Francisco

**673** Deaths per 100,000



### New York

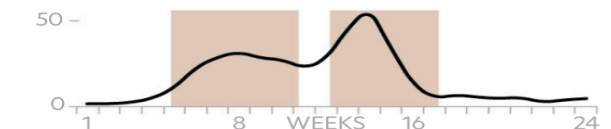
**452** Deaths per 100,000



### St. Louis

**358** Deaths per 100,000

St. Louis had strong social distancing measures and a low total death rate. The city successfully delayed its peak in deaths, but faced a sharp increase when restrictions were temporarily relaxed.



Source: <https://www.nationalgeographic.com/history/2020/03/how-cities-flattened-curve-1918-spanish-flu-pandemic-coronavirus/>

RILEY D. CHAMPINE, NG STAFF. SOURCE: MARKEL H, LIPMAN HB, NAVARRO JA, ET AL. NONPHARMACEUTICAL INTERVENTIONS IMPLEMENTED BY US CITIES DURING THE 1918-1919





**The New BETTER Normal post COVID-19**





# University of Nebraska Medical Center<sup>SM</sup>

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