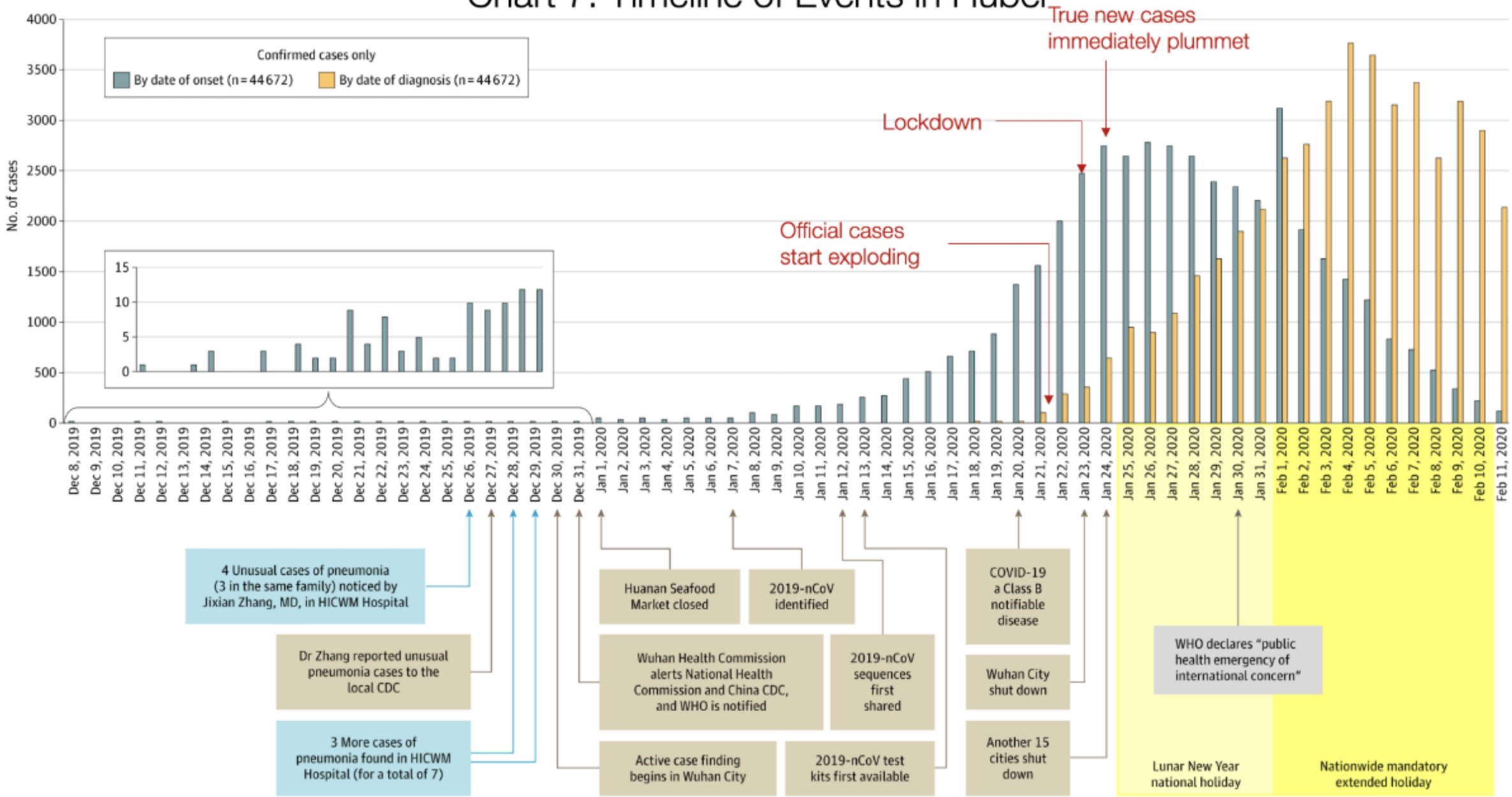
Coronavirus: Why You Must Act Now

Politicians, Community Leaders and Business Leaders: What Should You Do and When?

Tomas Pueyo Follow
Mar 10 · 26 min read

1. How Many Cases of Coronavirus Will There Be in Your Area?

Chart 7: Timeline of Events in Hubei



Source: Tomas Pueyo analysis over chart from the Journal of the American Medical Association, based on raw case data from the Chinese Center for Disease Control and Prevention

1. How Many Cases of Coronavirus Will There Be in Your Area?

2. What Will Happen When These Coronavirus Cases Materialize?

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3. What Should You Do?

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2. What Will Happen When These Coronavirus Cases Materialize?

3. What Should You Do?

4. Conclusions

Chart 1: Total Worldwide Cases of Coronavirus

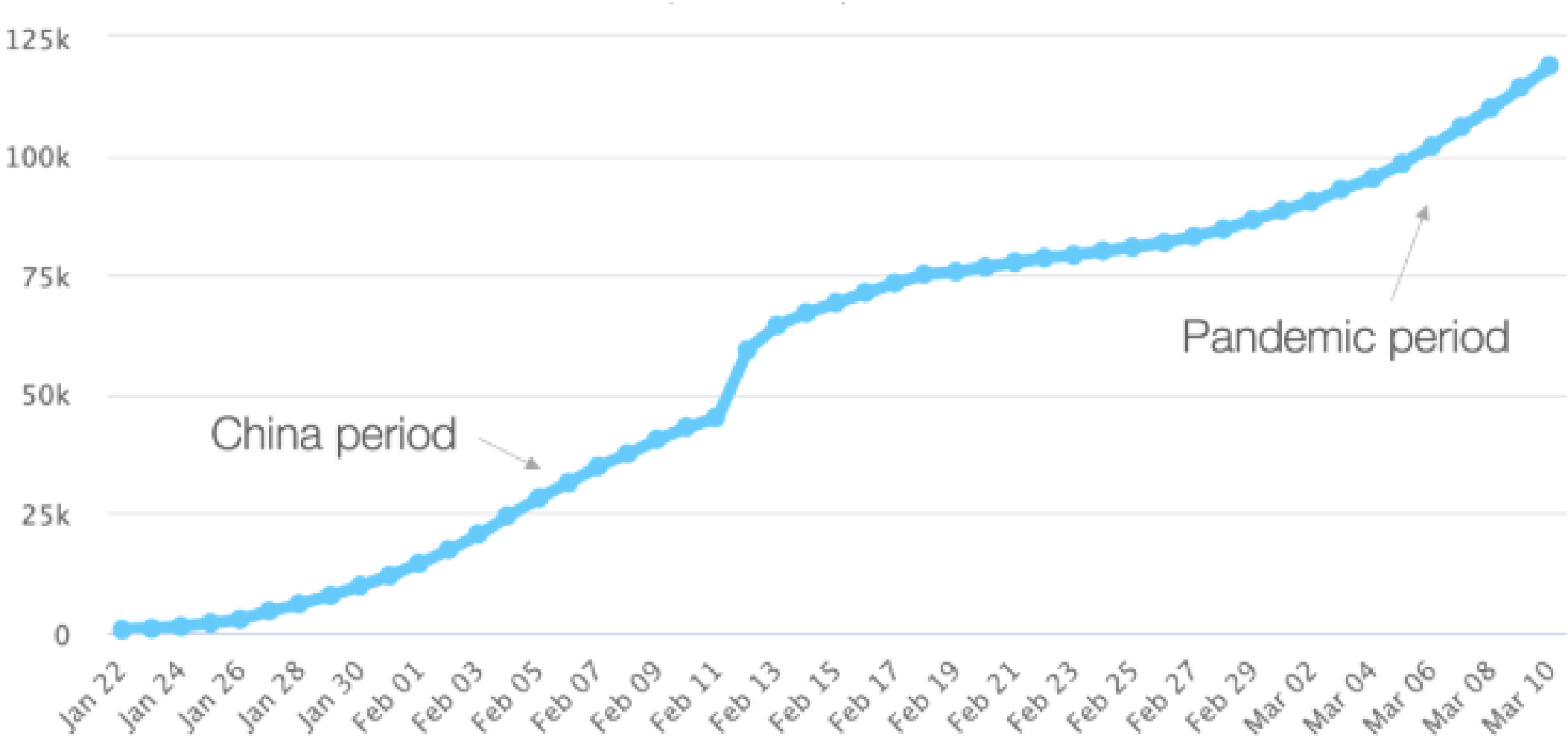
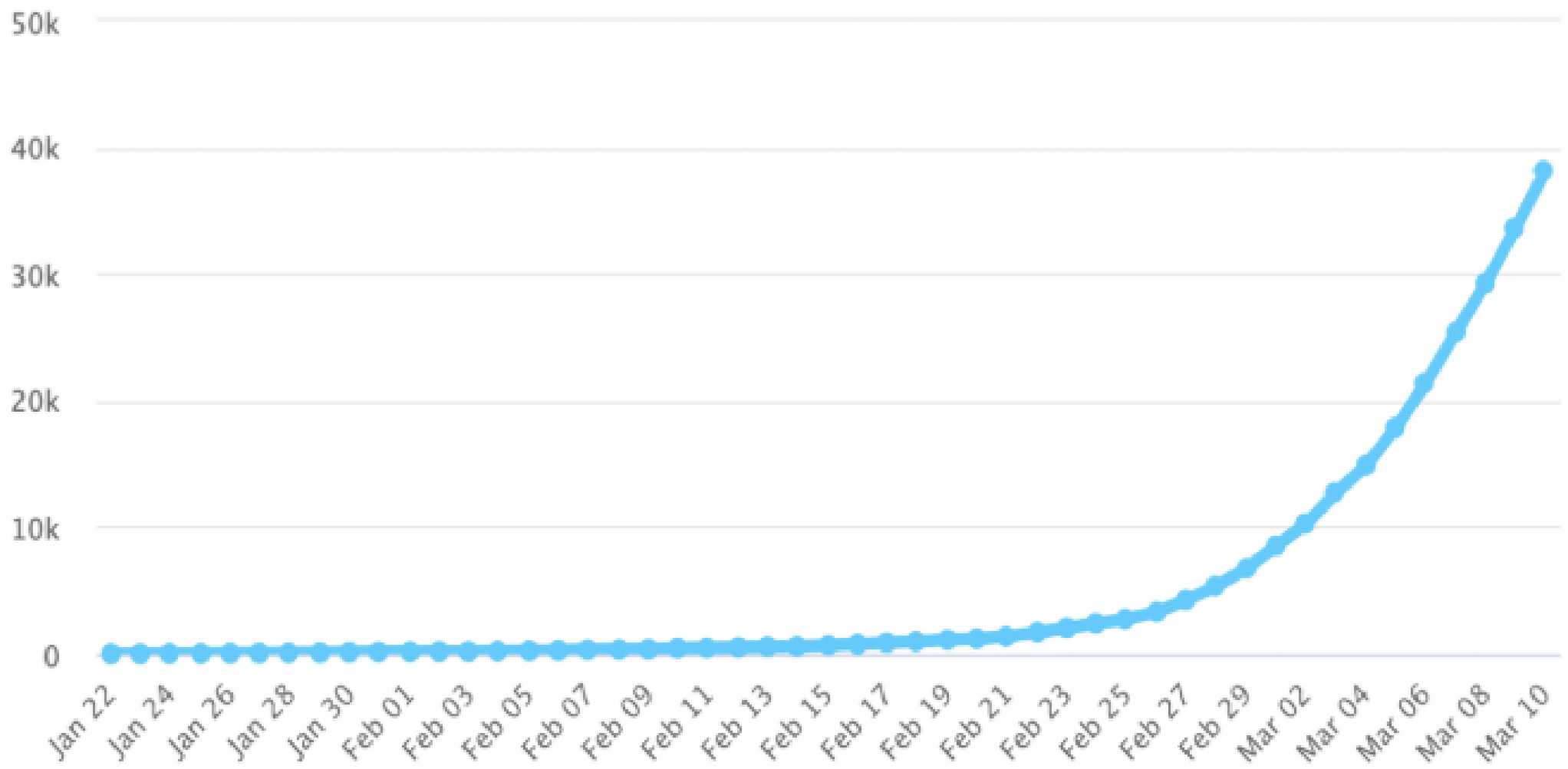


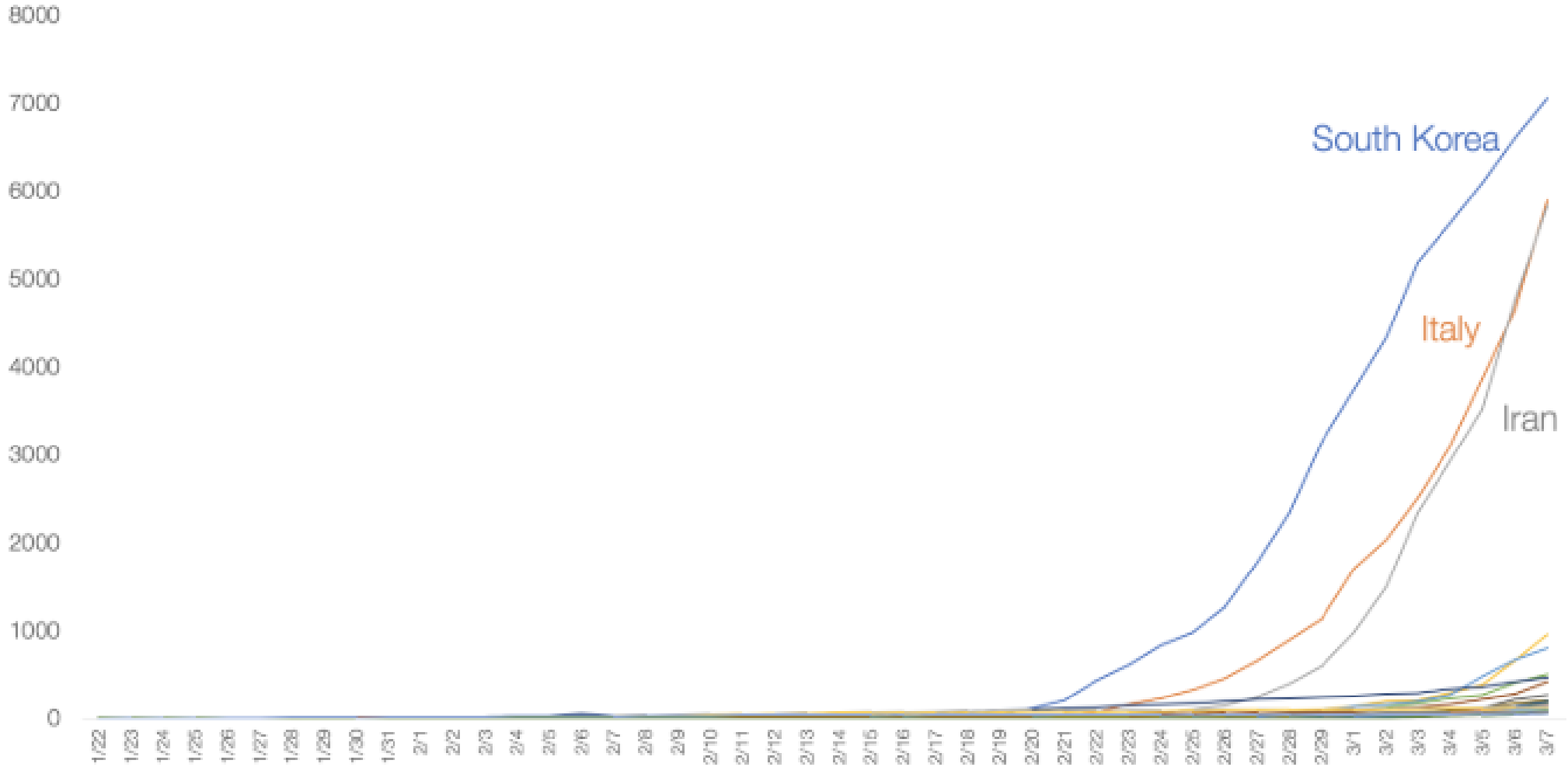
Chart 2: Total Cases of Coronavirus Outside of China



Source: Tomas Pueyo, based on worldometers chart and data: https://www.worldometers.info/coronavirus/coronavirus-cases/

Chart 3: Coronavirus Cases per Country

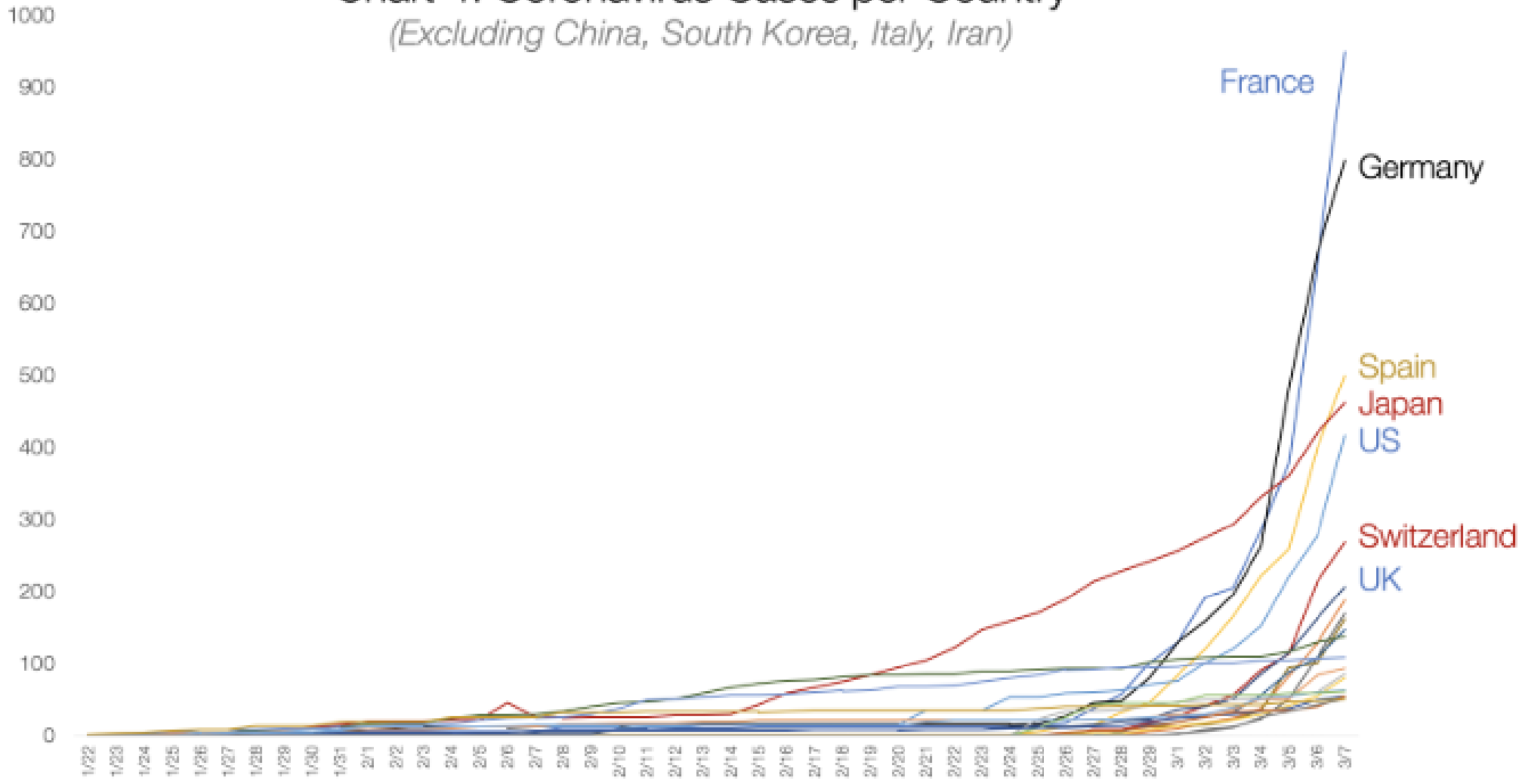
(Excluding China)



Source: Tomas Pueyo analysis from primary data from Github:
https://github.com/CSSEGISandData/COVID-19/blob/master/csse_covid_19_data/csse_covid_19_time_series/time_series_19-covid-Confirmed.csv

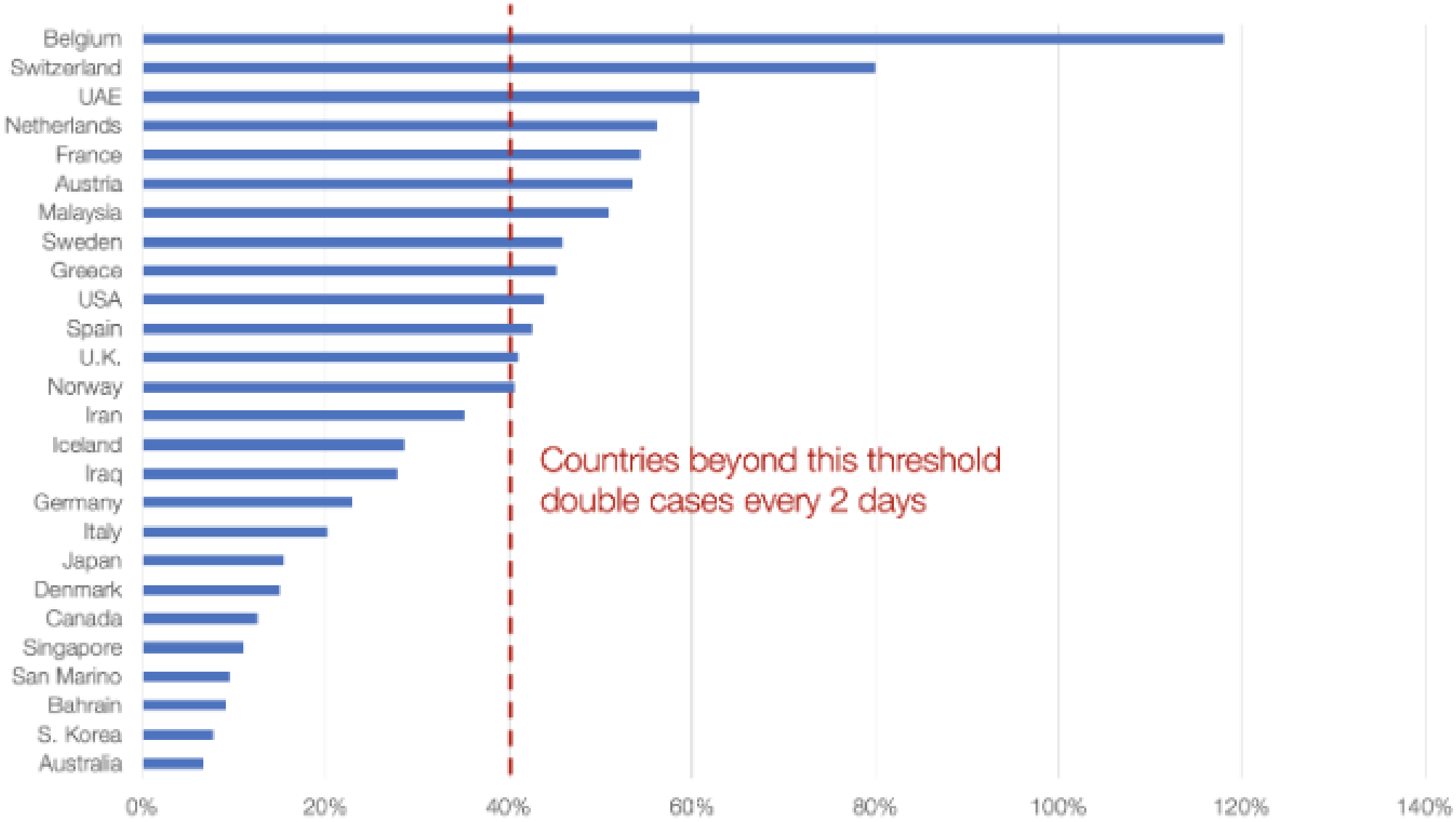
Chart 4: Coronavirus Cases per Country

(Excluding China, South Korea, Italy, Iran)



Source: Tomas Pueyo analysis from primary data from Github:
https://github.com/CSSEGISandData/COVID-19/blob/master/csse_covid_19_data/csse_covid_19_time_series/time_series_19-covid-Confirmed.csv

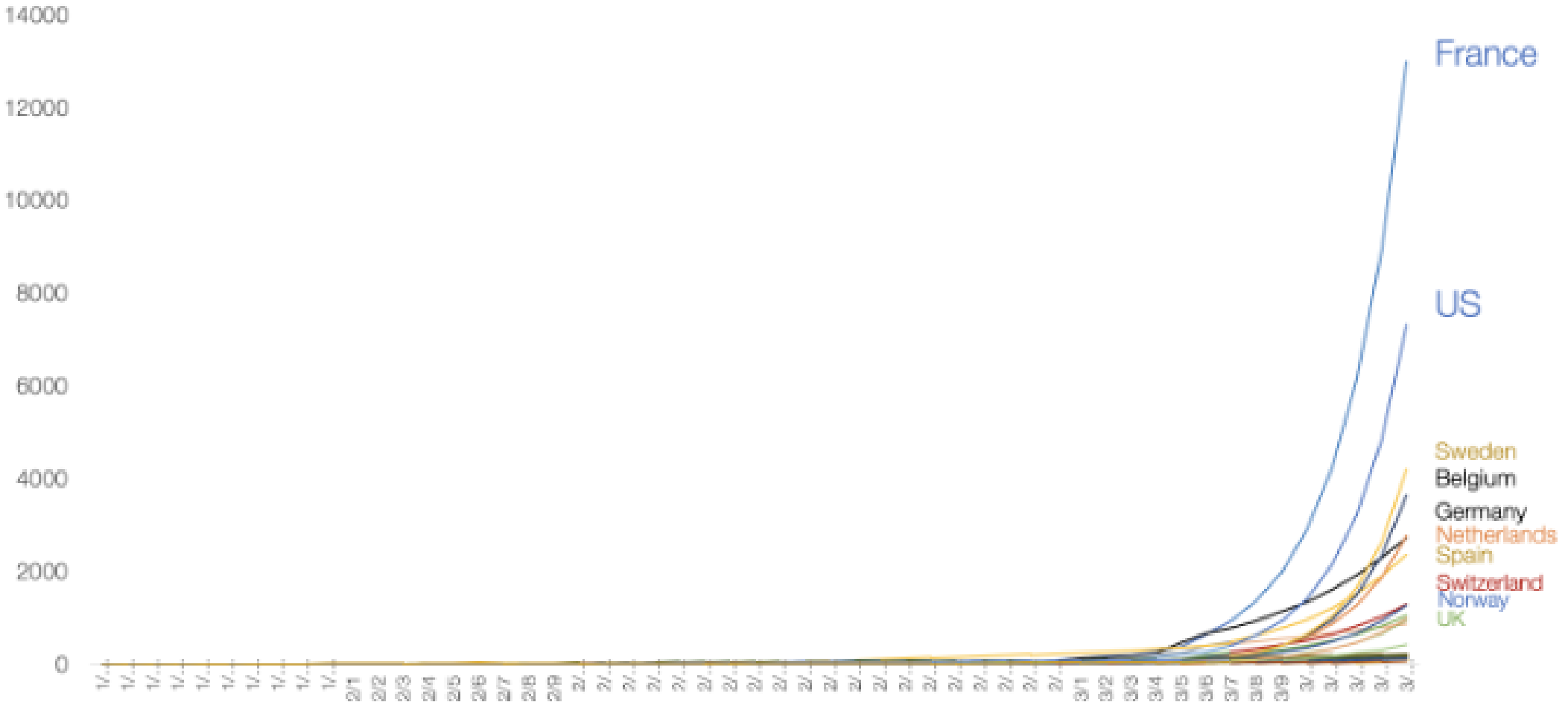
Chart 5: Daily Growth Rate of Cases between 3/5 and 3/6



Source: Tomas Pueyo analysis from primary data from worldometer
Only includes countries that have >20 cases and >5% growth rate

Chart 6: Forecast of Coronavirus Cases per Country*

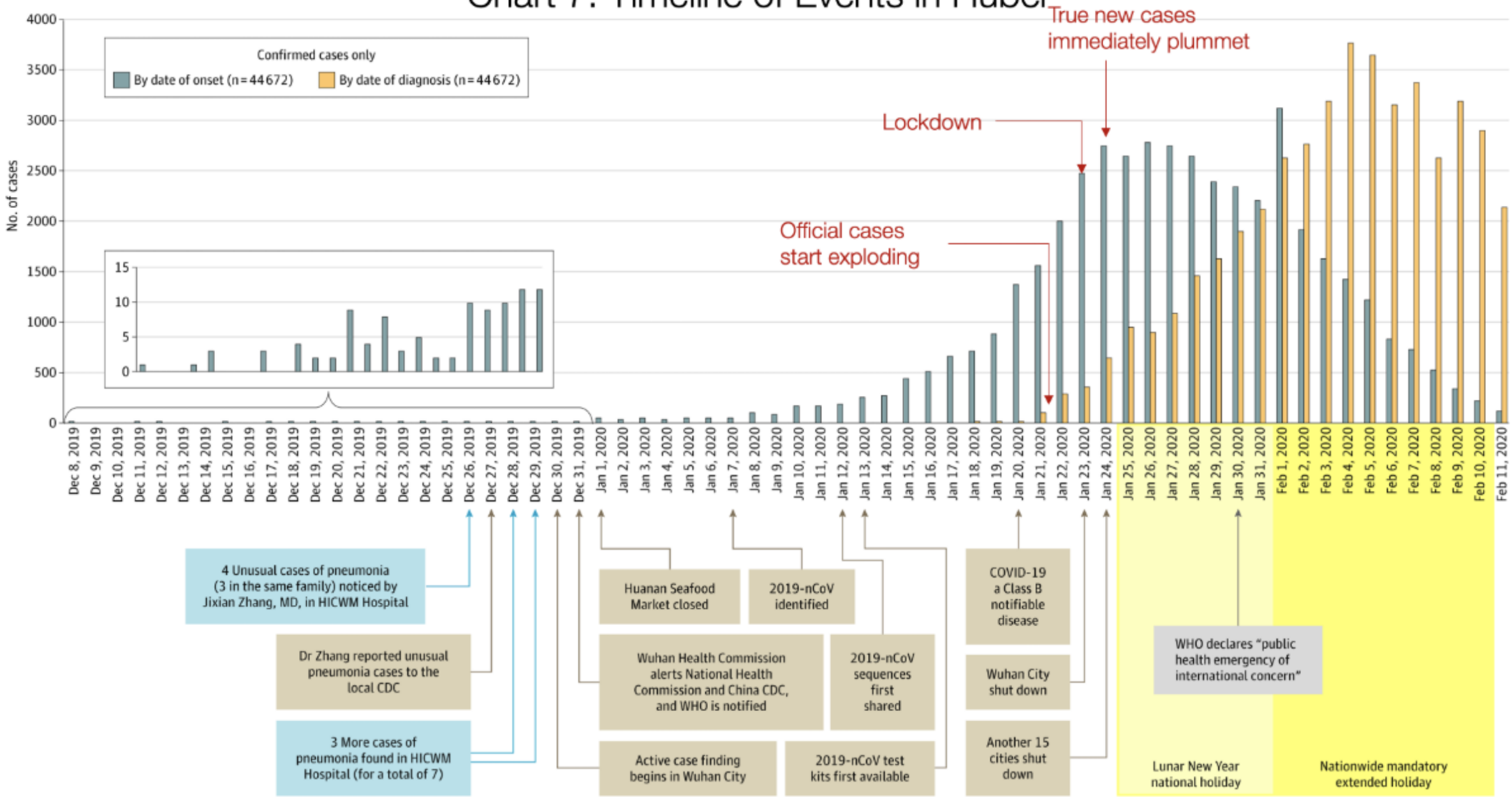
(Excluding China, South Korea, Italy, Iran)



** Based on using the growth rate between 3/6 and 3/7 for 7 more days*

Source: Tomas Pueyo analysis from primary data from Github:
https://github.com/CSSEGISandData/COVID-19/blob/master/csse_covid_19_data/csse_covid_19_time_series/time_series_19-covid-Confirmed.csv

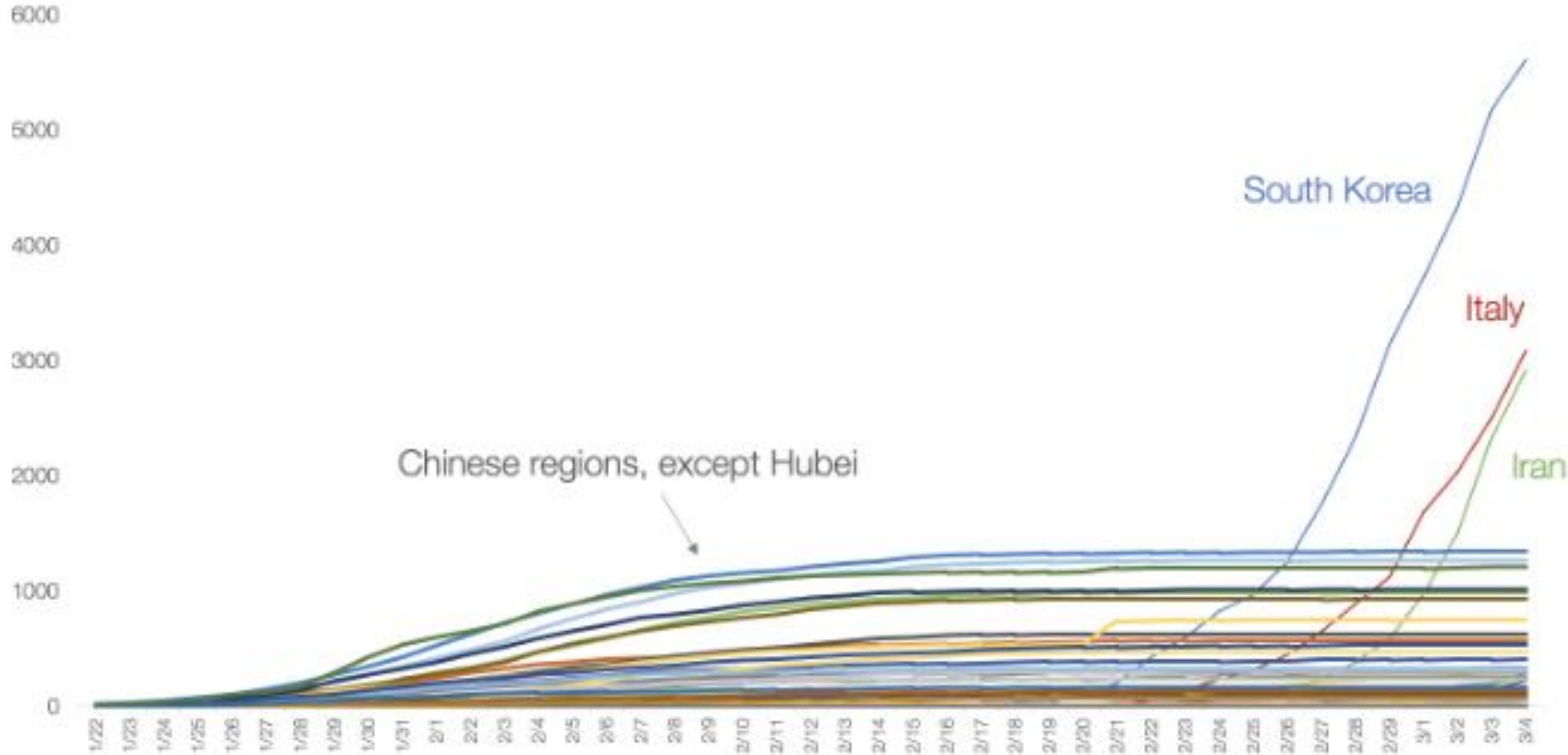
Chart 7: Timeline of Events in Hubei



Source: Tomas Pueyo analysis over chart from the Journal of the American Medical Association, based on raw case data from the Chinese Center for Disease Control and Prevention

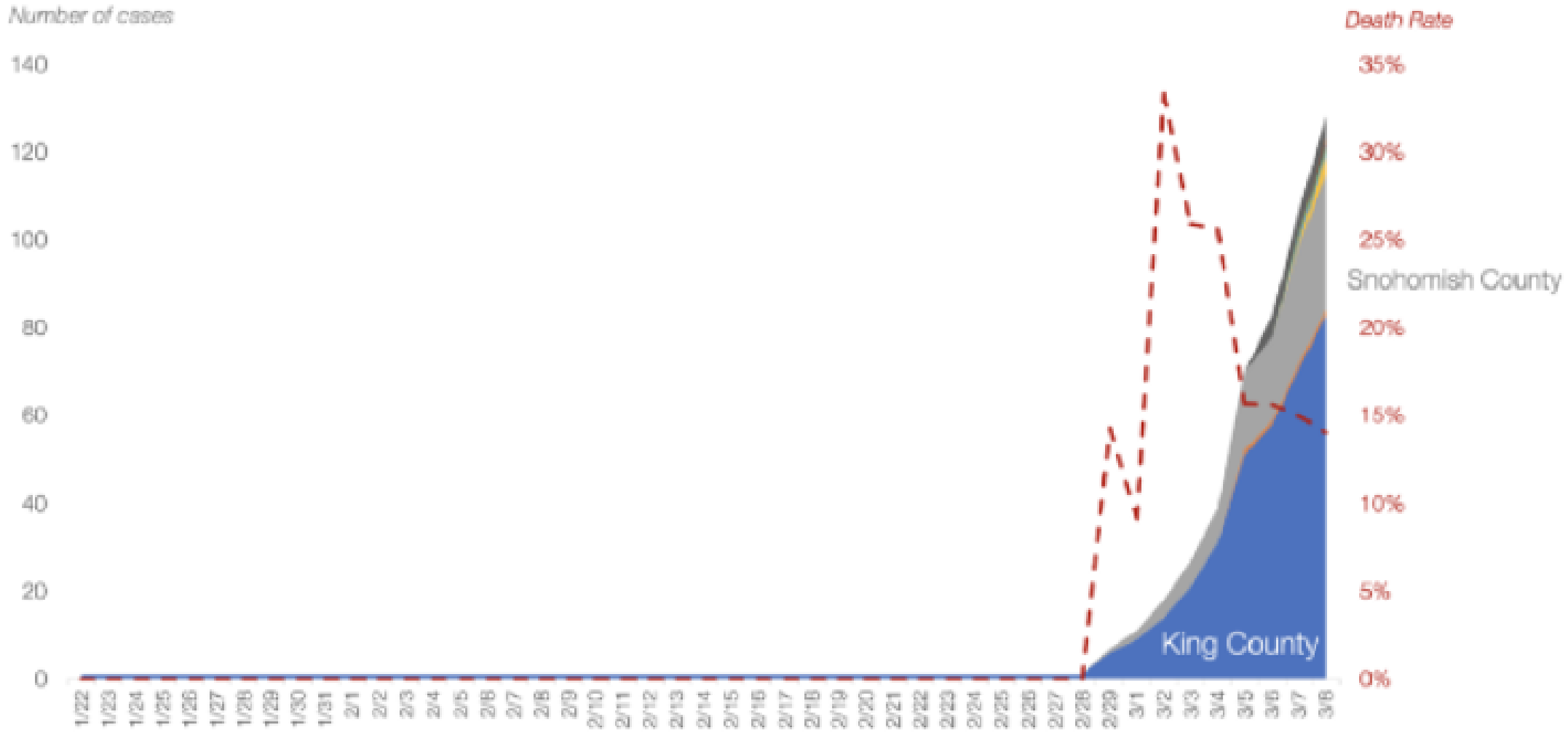
Chart 8: Coronavirus Cases

Chinese Regions Outside Hubei vs. Italy, Iran and South Korea



Source: Tomas Pueyo analysis from primary data from Github:
https://github.com/CSSEGISandData/COVID-19/blob/master/csse_covid_19_data/csse_covid_19_time_series/time_series_19-covid-Confirmed.csv

Chart 10: Washington State Cases and Death Rate



Source: Tomas Pueyo analysis from primary data from Github:
https://github.com/CSSEGISandData/COVID-19/blob/master/csse_covid_19_data/csse_covid_19_time_series/time_series_19-covid-Confirmed.csv

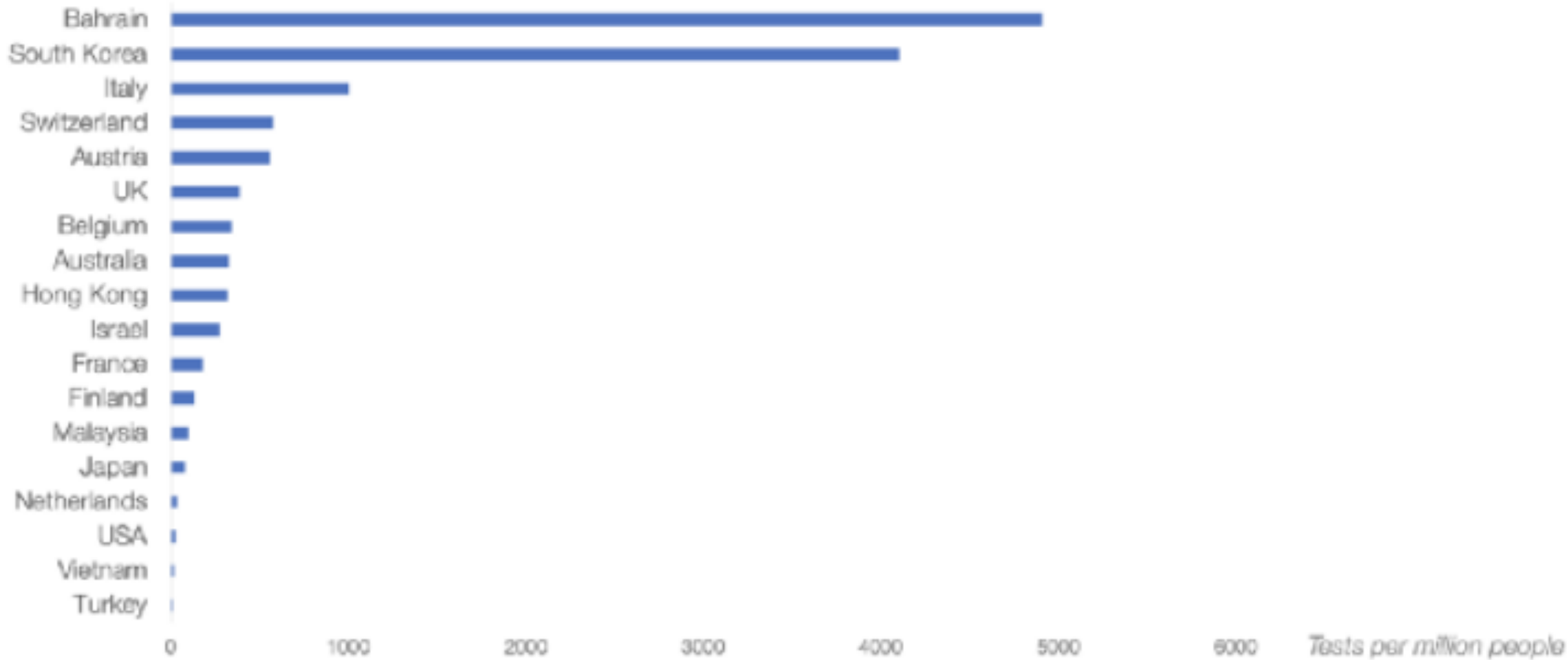
Country	Tests Performed	Tests Per Million Citizens	Positive Test Rate
South Korea	109,591	2,138	4.4%
Italy	23,345	386	8.7%
Austria	2,120	235	0.8%
Switzerland	1,850	214	1.6%
UK	13,525	199	0.3%
Finland	130	23	5.4%
Turkey	940	11	0.0%
United States	472	1	21.8%

Source: *Tomas Pueyo analysis with data from Worldometer*
https://www.worldometers.info/coronavirus/covid-19-testing/

Sources for each number here

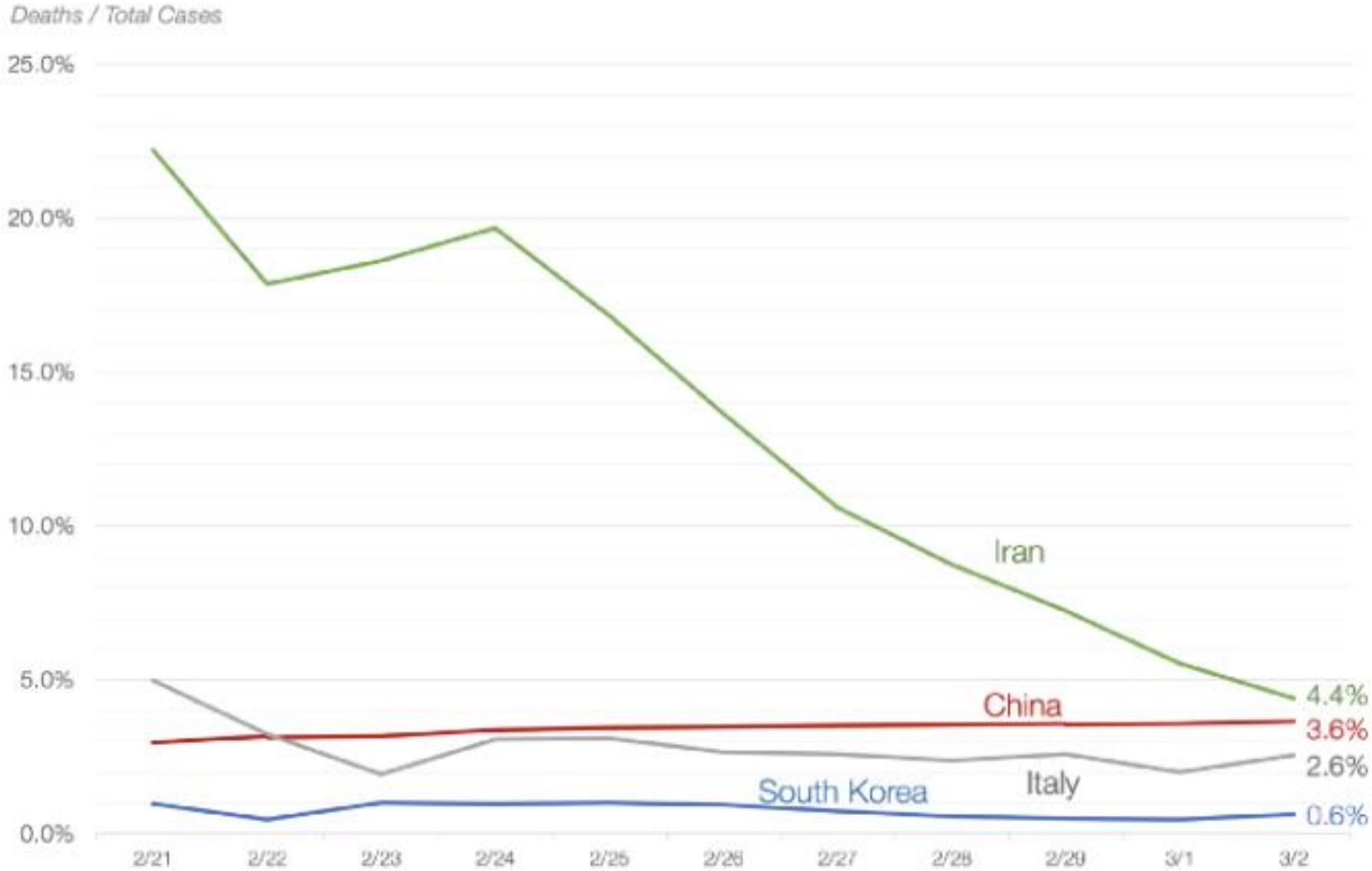
Chart 10.b: Coronavirus Tests Performed per Million People for Different Countries

(as of March 9th)



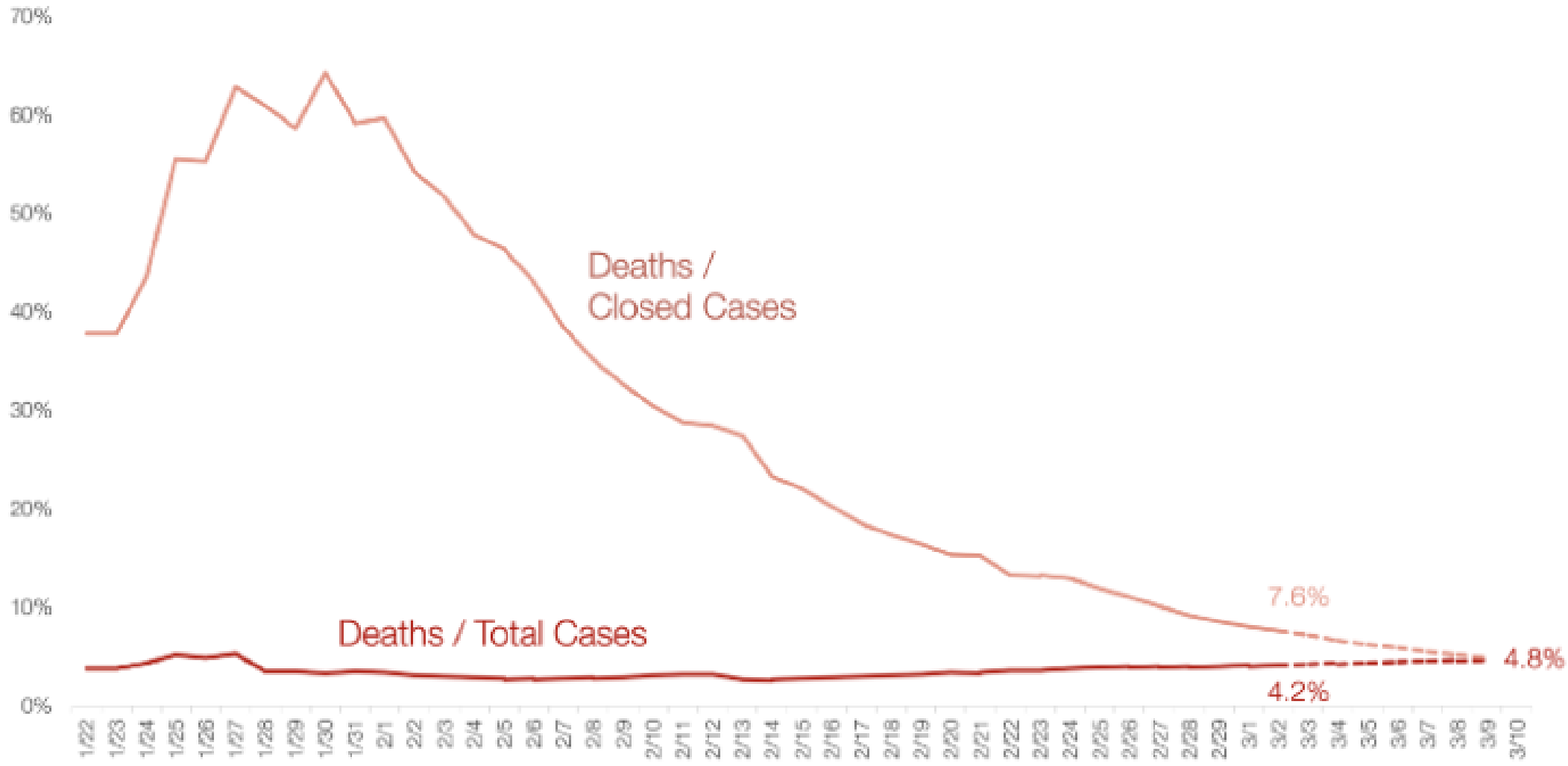
Source: Tomas Pueyo analysis from data aggregated by Worldometers: https://www.worldometers.info/coronavirus/covid-19-testing/
Per country sources available at Worldometers or at:
https://docs.google.com/spreadsheets/d/1T7fyOmjb2Z2QwMPRwAb7WDvQbEAiL5CoG4RsfG3d5w/edit#gid=508476855

Chart 12: Fatality Rate: Deaths / TOTAL Cases



Source: Tomas Pueyo analysis from primary data from Github:
https://github.com/CSSEGISandData/COVID-19/blob/master/csse_covid_19_data/csse_covid_19_time_series/time_series_19-covid-Confirmed.csv

Chart 13: Fatality Rates in Hubei Region, China



Source: Tomas Pueyo analysis from primary data from Github:
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Chart 14: Fatality Rates in China, Excluding Hubei

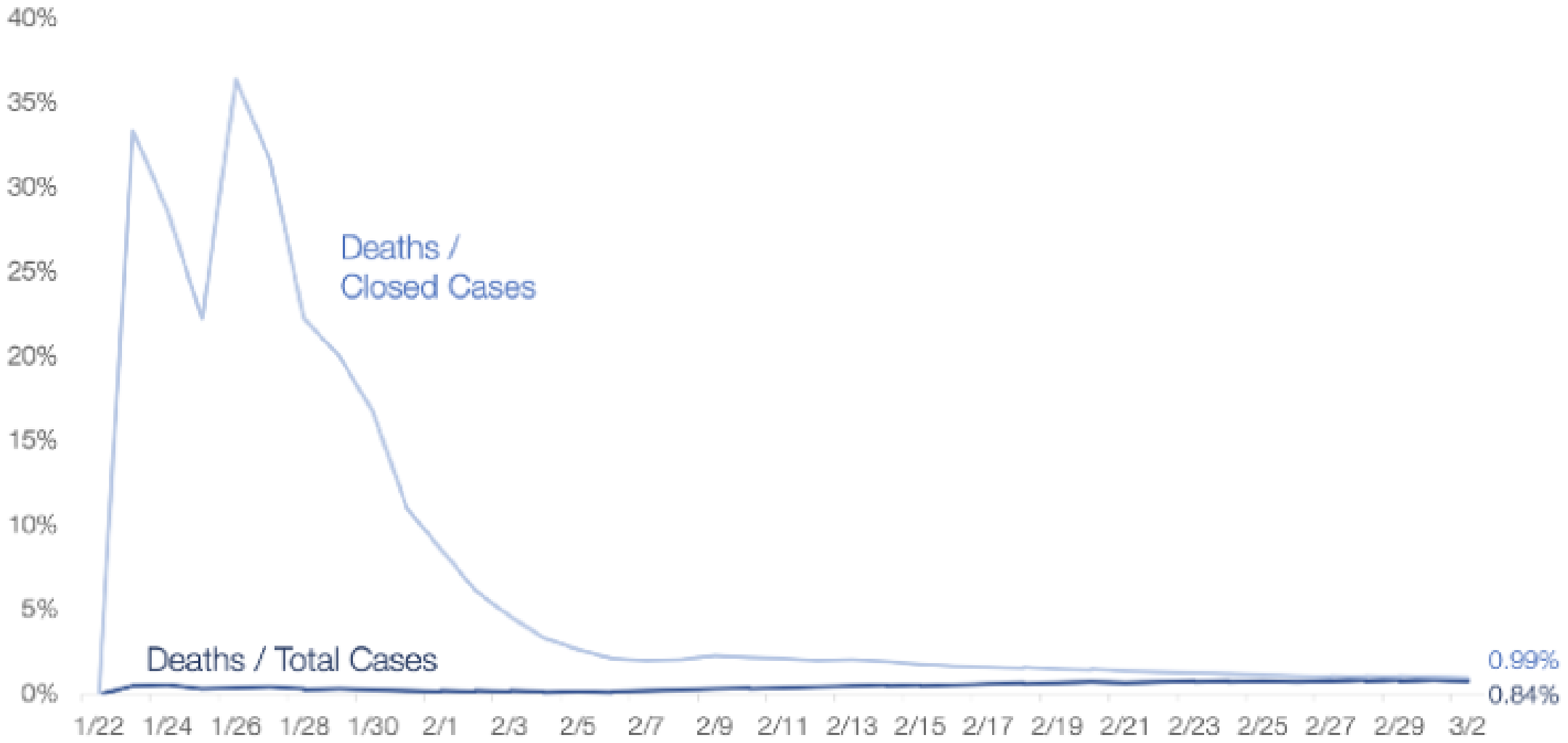

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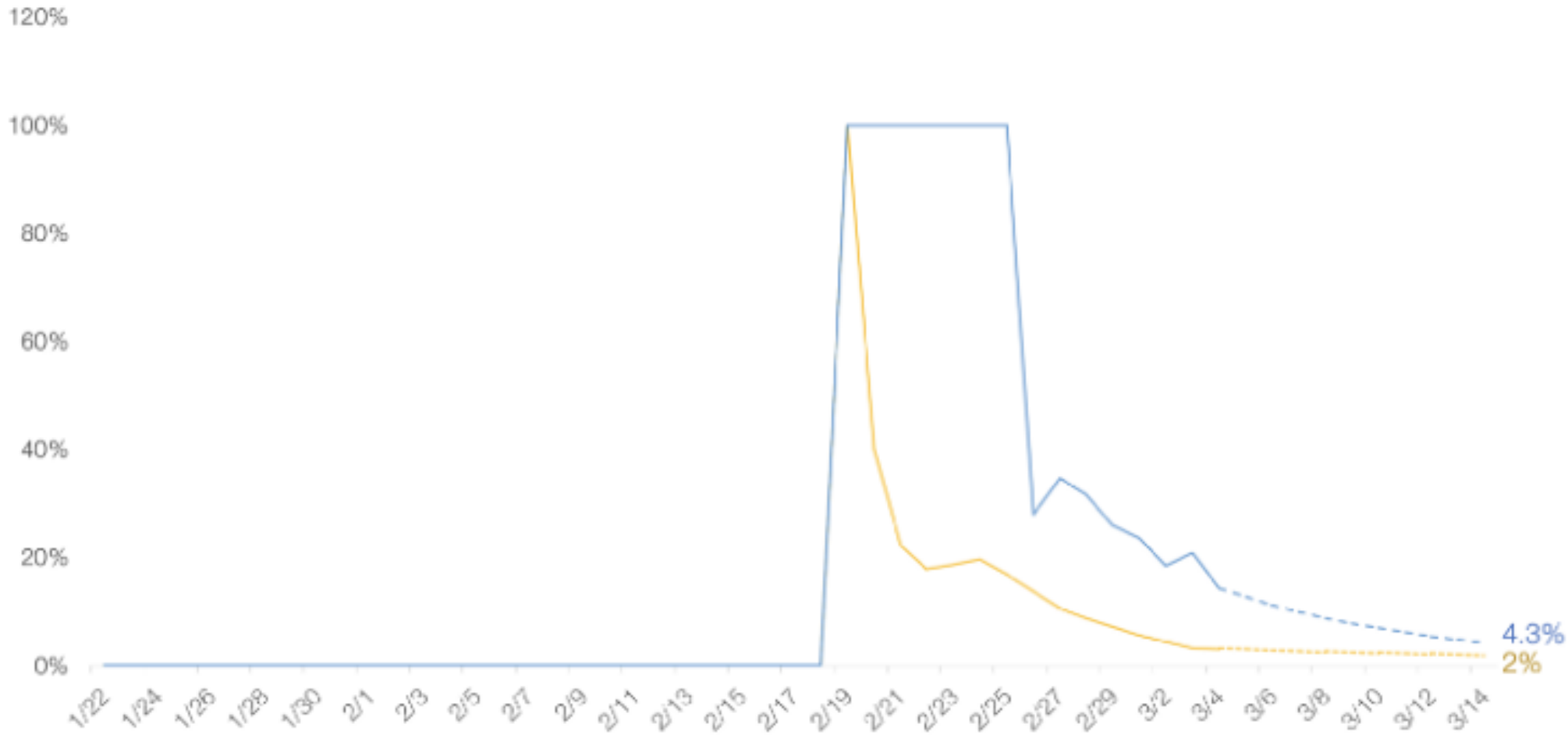
Chart 15: Projection of Coronavirus Fatality Rate in Iran



Source: Tomas Pueyo analysis from primary data from Github:
https://github.com/CSSEGISandData/COVID-19/blob/master/csse_covid_19_data/csse_covid_19_time_series/time_series_19-covid-Confirmed.csv

Chart 16: Projection of Coronavirus Fatality Rate in Italy

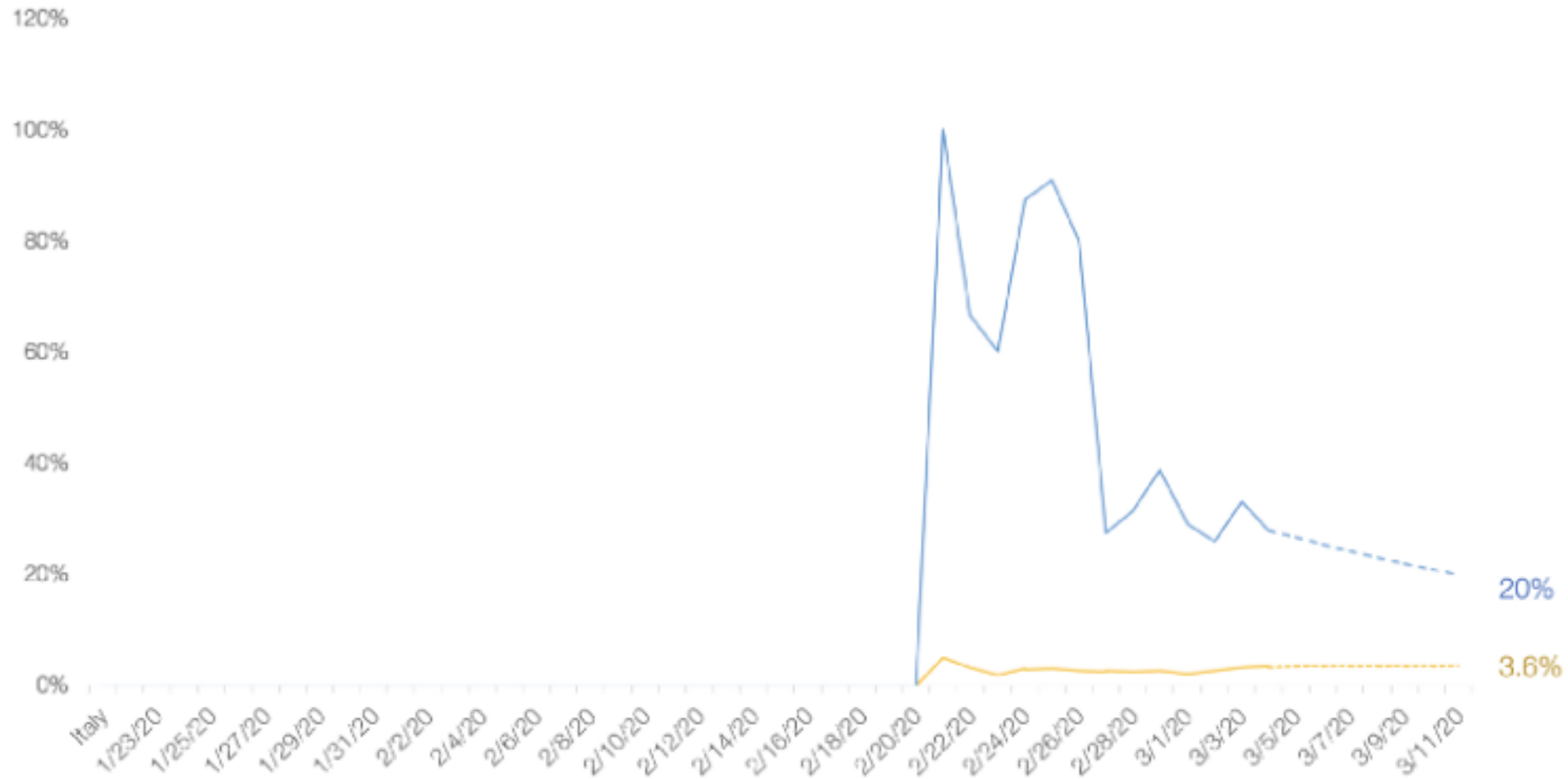


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Chart 17: Projection of Coronavirus Fatality Rate in South Korea

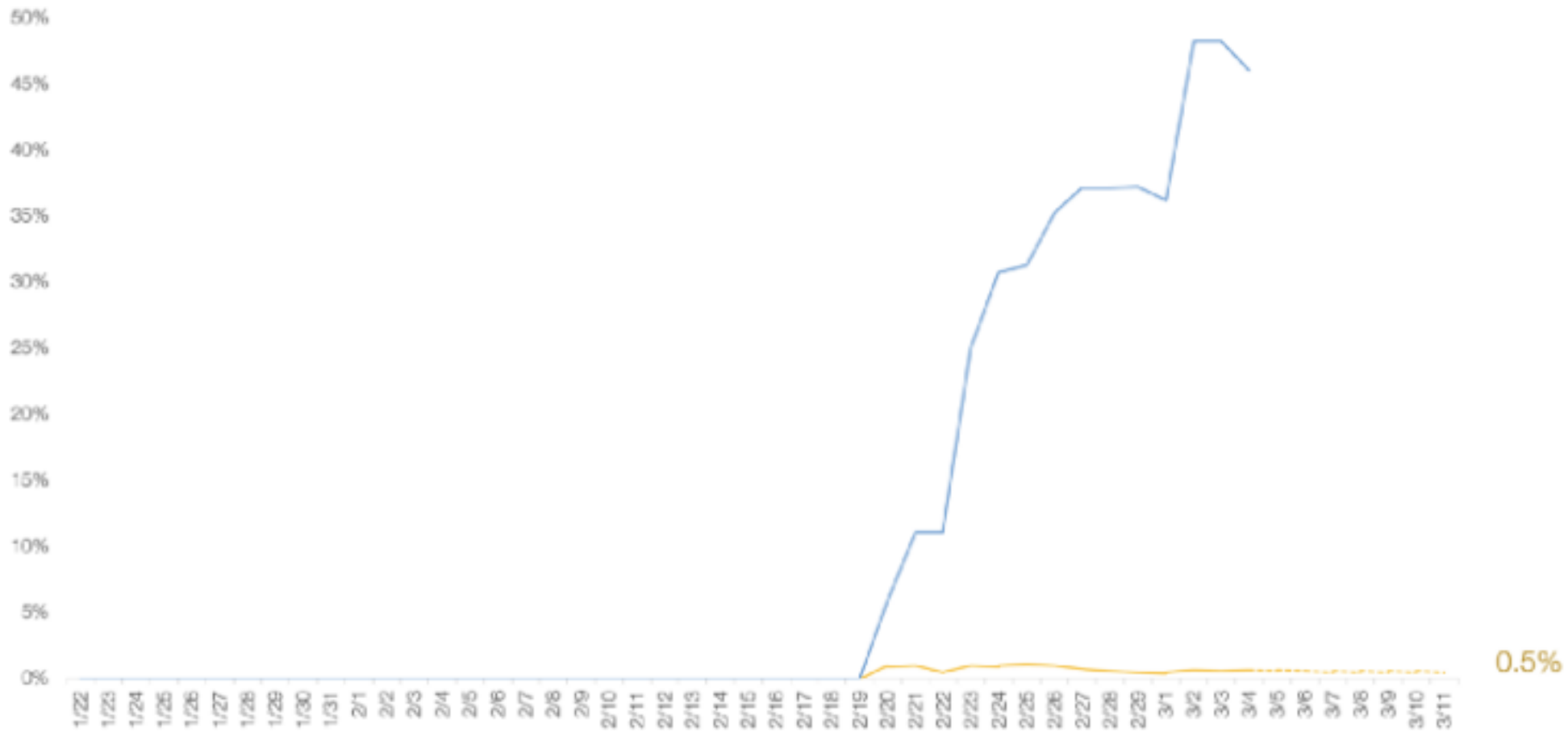

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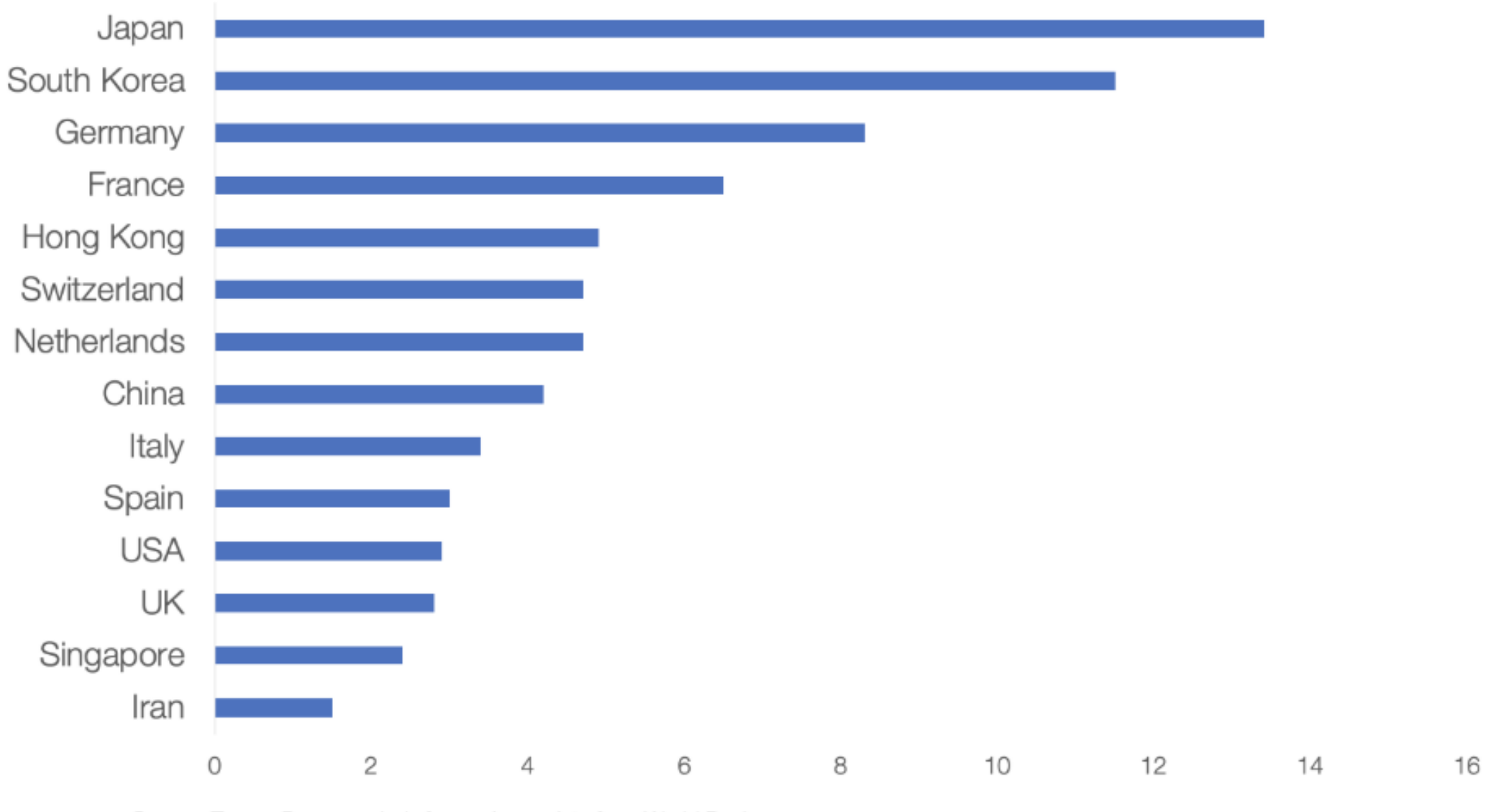
Chart 17.b: Beds / 1,000 People in Different Countries



The Majority of Infections are Mild

Seriousness of symptoms

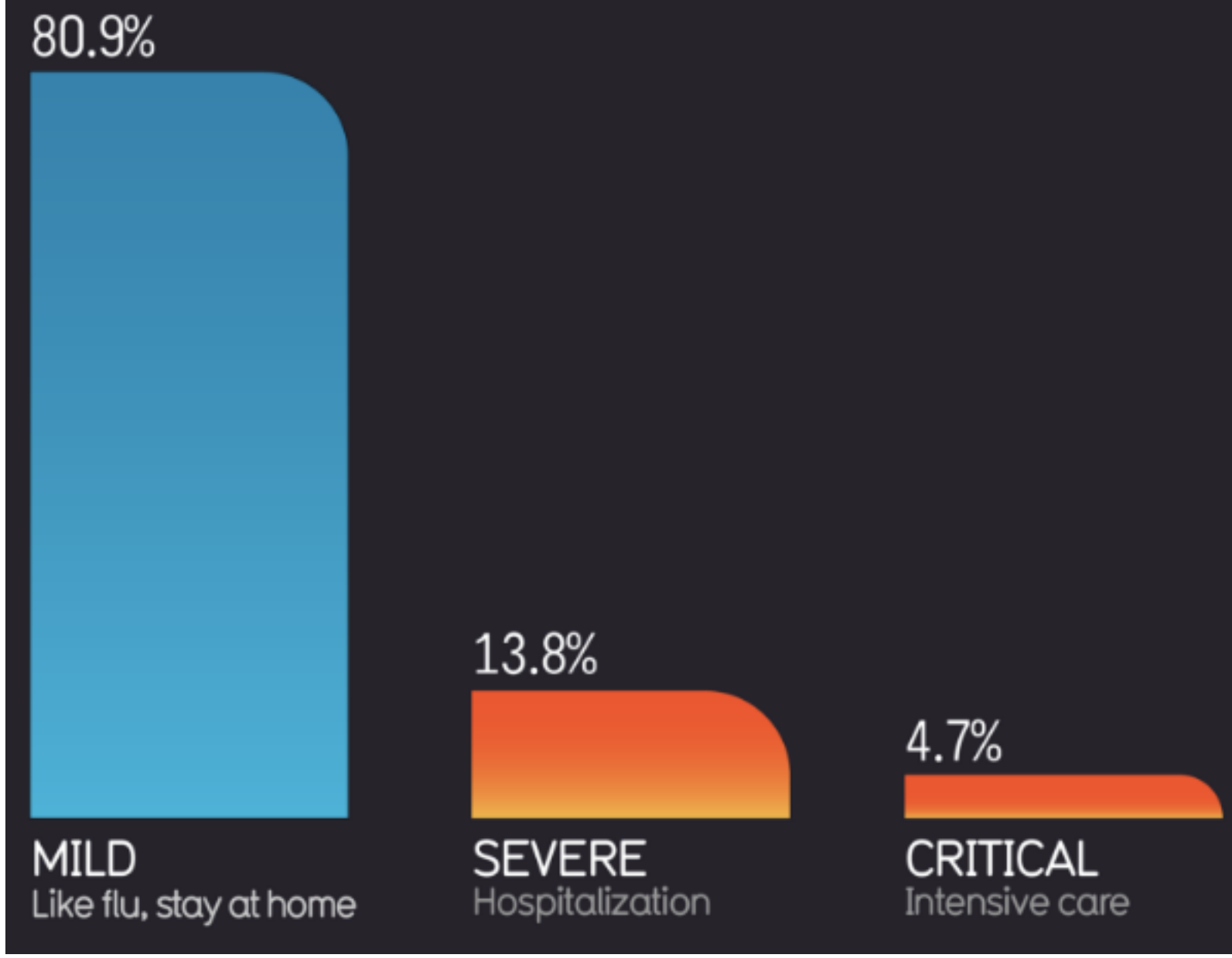


Chart 18: Slide from a Webinar of the American Hospital Association, communicating best guesses on the impact of the Coronavirus in the US healthcare system in 2020

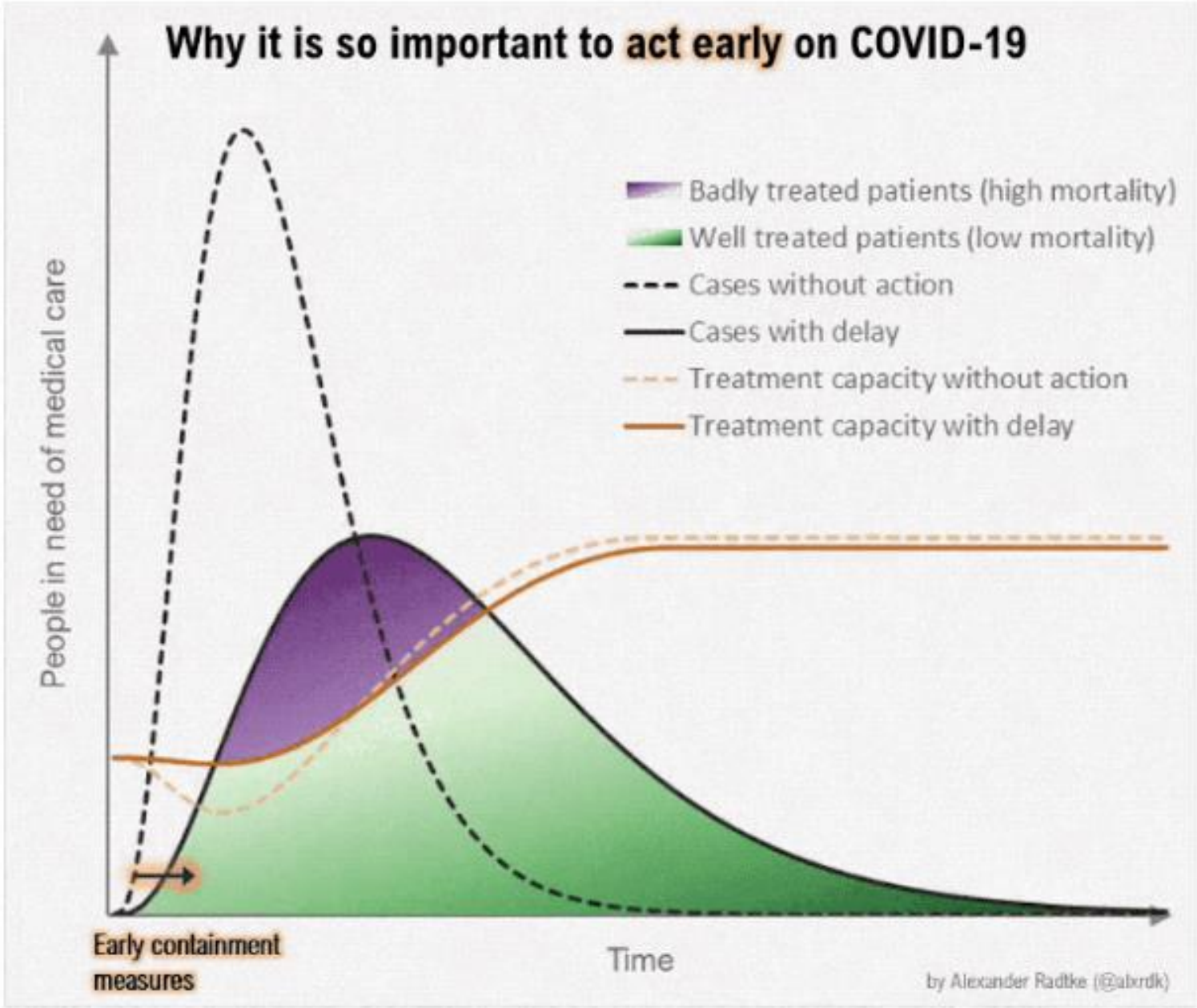
Best Guess Epidemiology

• Ro = 2.5; Doubling time 7-10 days	Community epi wave 2 months
• Community attack rate = 30-40%	US: 96 million cases
• Cases requiring hospitalization = 5%	US: 4.8 million admissions
• Cases requiring ICU care = 1-2%	US: 1.9 million ICU
• Cases requiring ventilatory support = 1%	US: 1 PPV
• CFR = 0.5%	US: 480,000 deaths

- **PREPARE FOR DISEASE BURDEN ROUGHLY 10X SEVERE FLU SEASON**

American Hospital Association

NETEC


Why it is so important to act early on COVID-19
People in need of medical care
Badly treated patients (high mortality)
Well treated patients (low mortality)
Cases without action
Cases with delay
Treatment capacity without action
Treatment capacity with delay
Early containment measures
Time
by Alexander Radtke (@alxrdk)

Source

Chart 19: Death Rate of 1918 Flu Pandemic in Cities with Different Social Distancing Measures

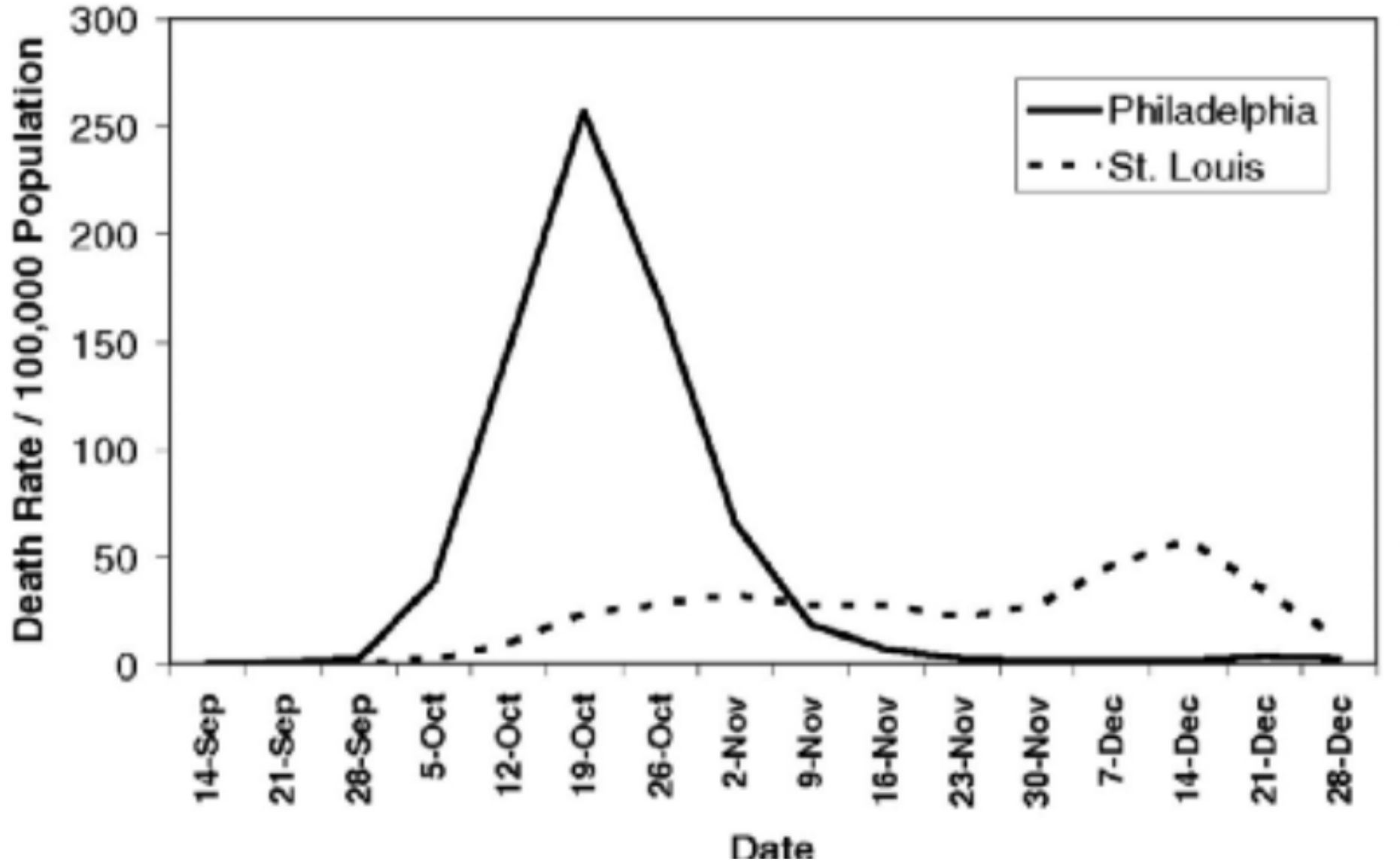
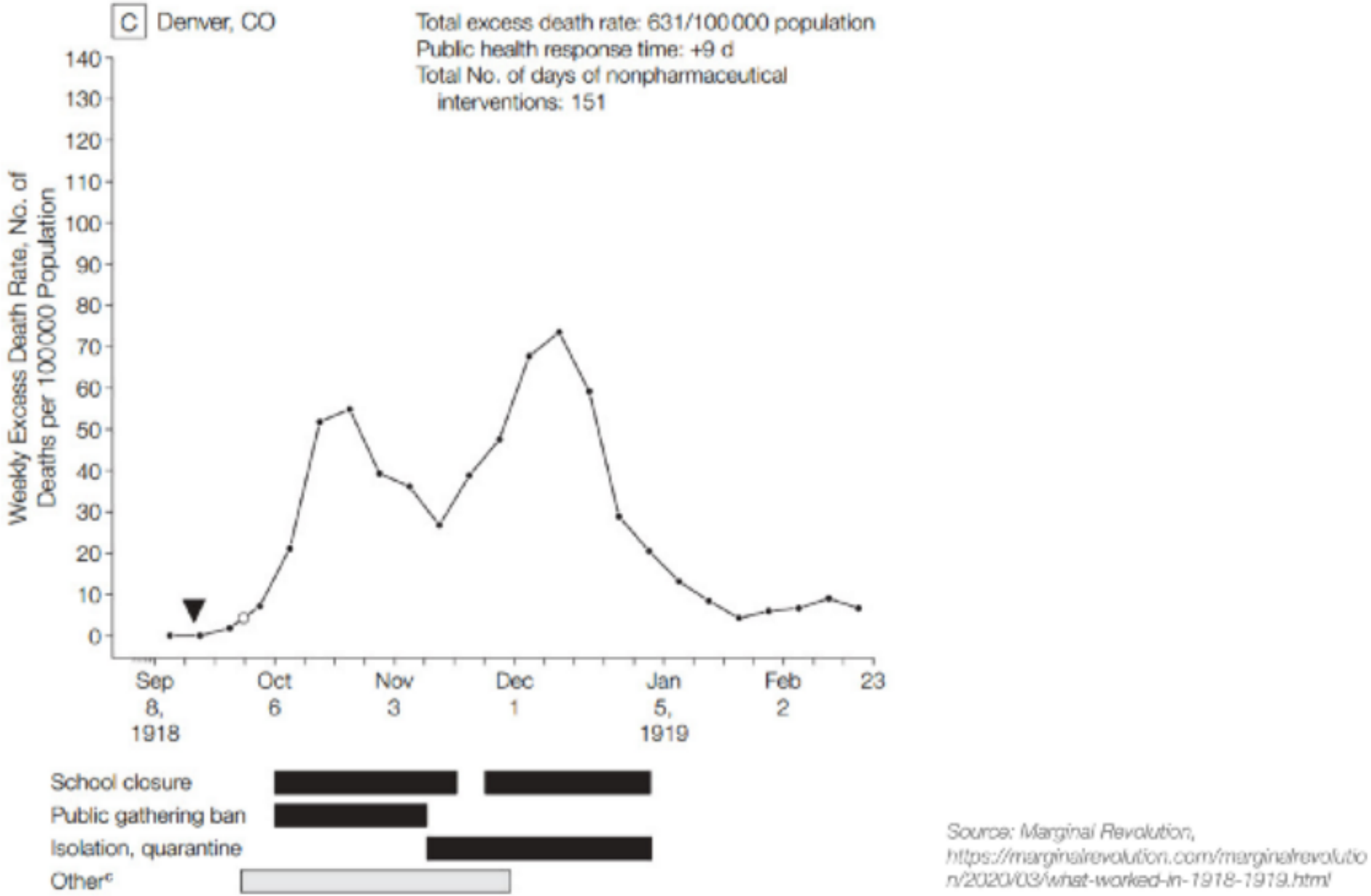
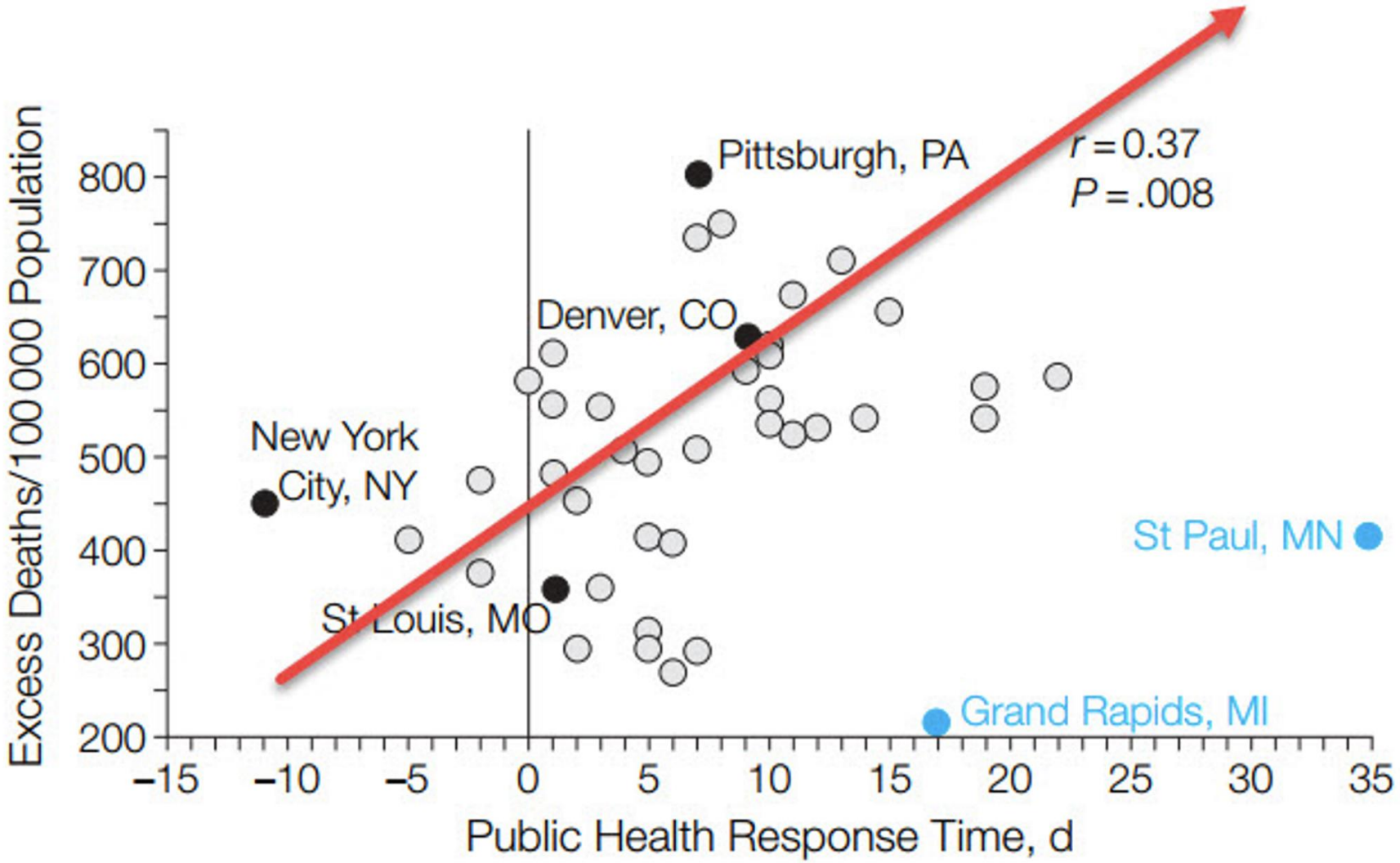


Chart 20: Excess Death in Denver during the 1918 Flu Pandemic



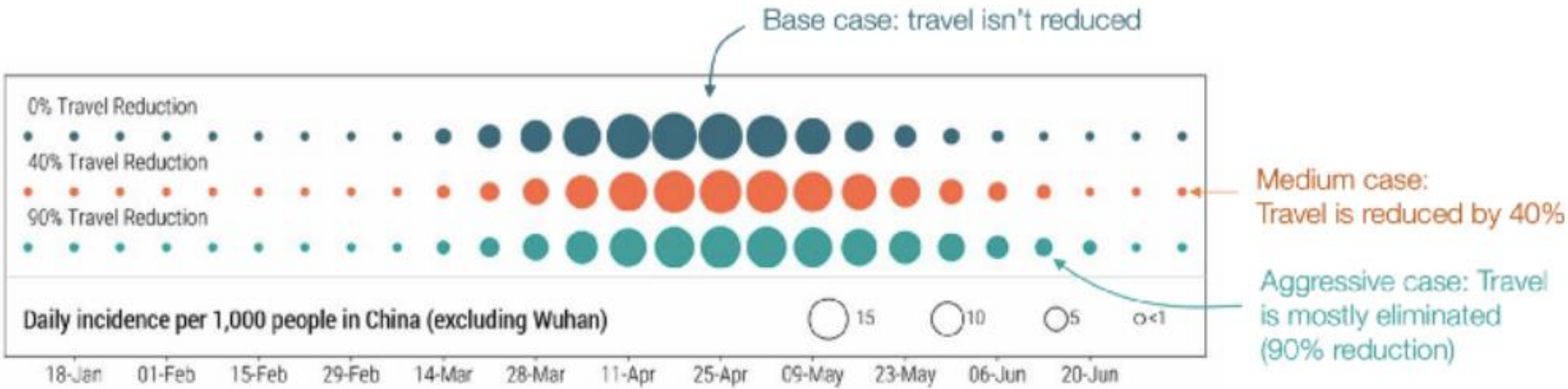
Source: Marginal Revolution, https://marginalrevolution.com/marginalrevolution/2020/03/what-worked-in-1918-1919.html

Chart 21: Total excess pneumonia and influenza mortality by public health response time



Source: Marginal Revolution, https://marginalrevolution.com/marginalrevolution/2020/03/what-worked-in-1918-1919.html

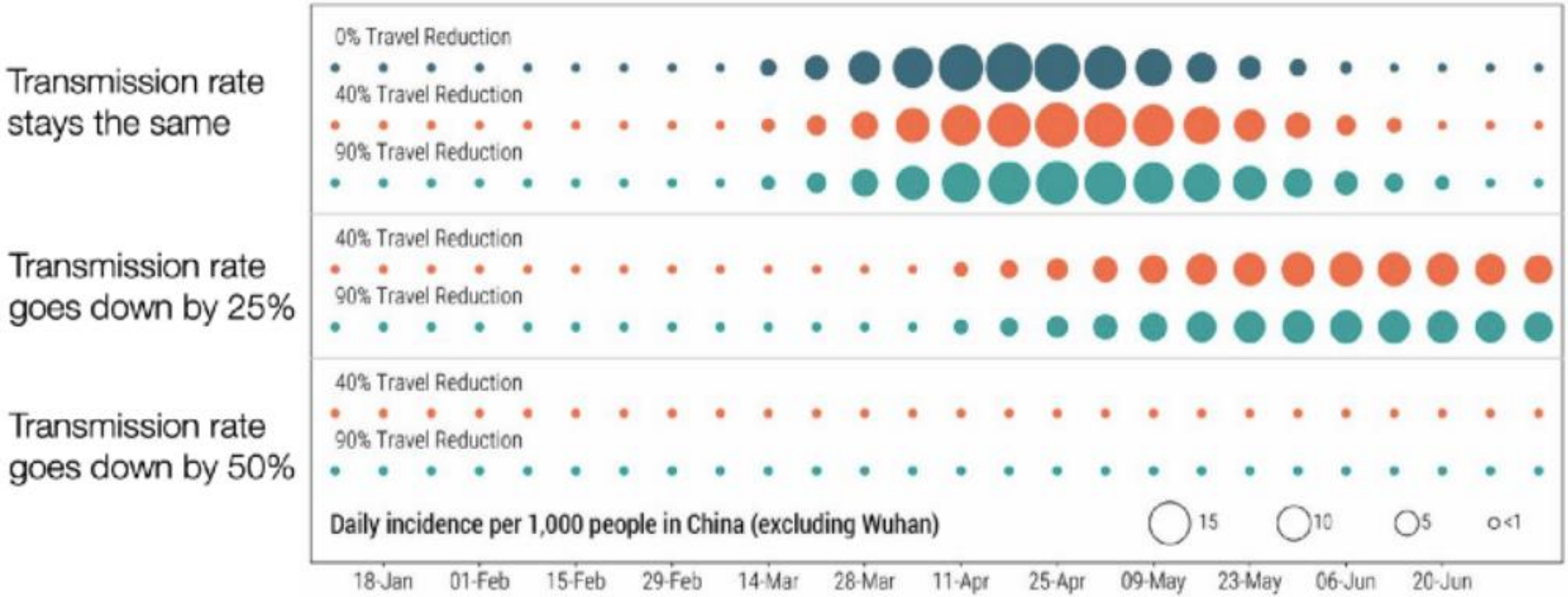
Chart 21.b: Delay in Coronavirus Spread in China, Based on Travel Restrictions



Source: Tomas Pueyo analysis on charts and data from paper: The effect of travel restrictions on the spread of the 2019 novel coronavirus (COVID-19) outbreak, Science Magazine, https://science.sciencemag.org/content/early/2020/03/05/science.aba9757

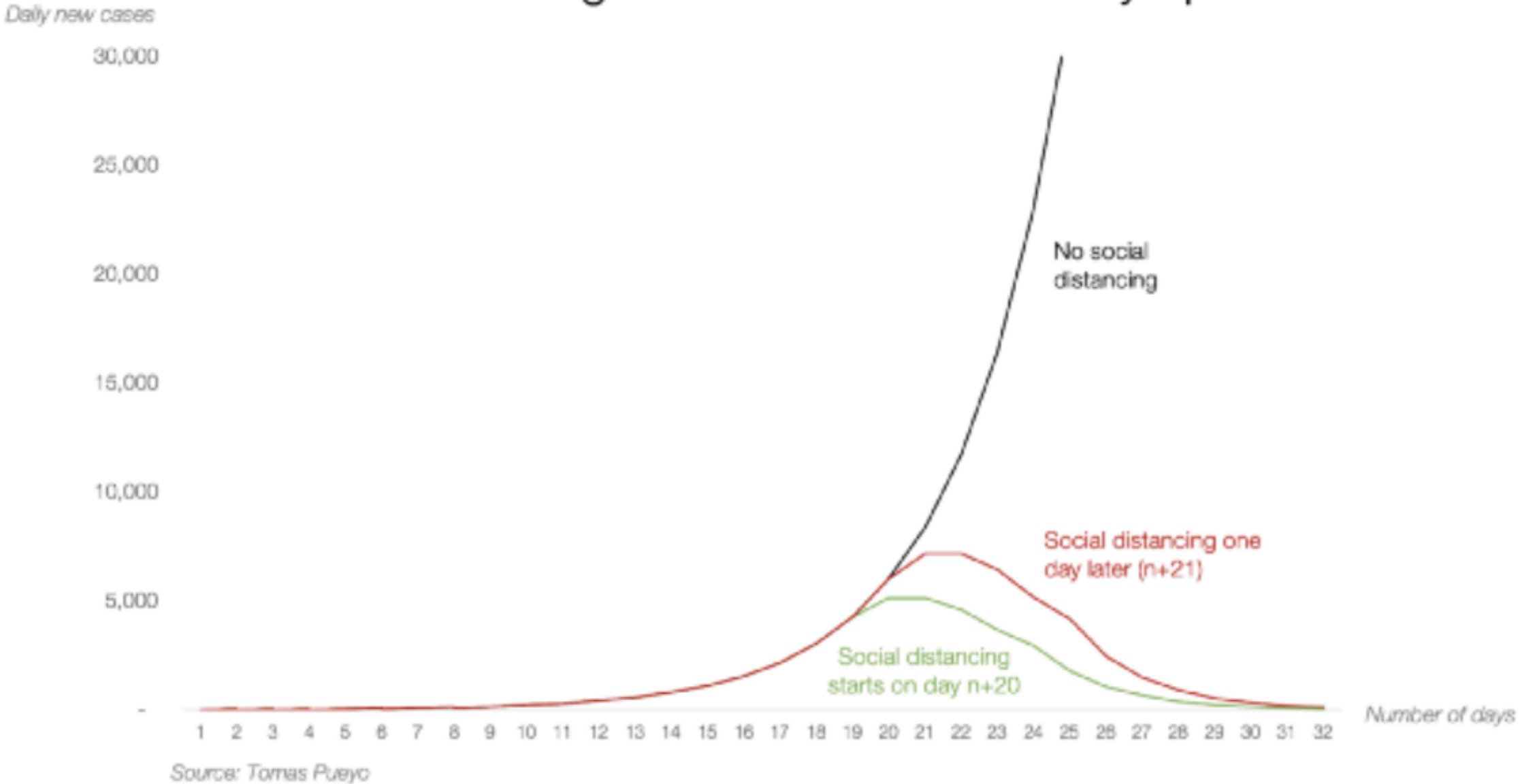
Link to source

Chart 21.c: Delay in Coronavirus Spread in China, Based on Travel Restrictions and Transmission Rate Reductions



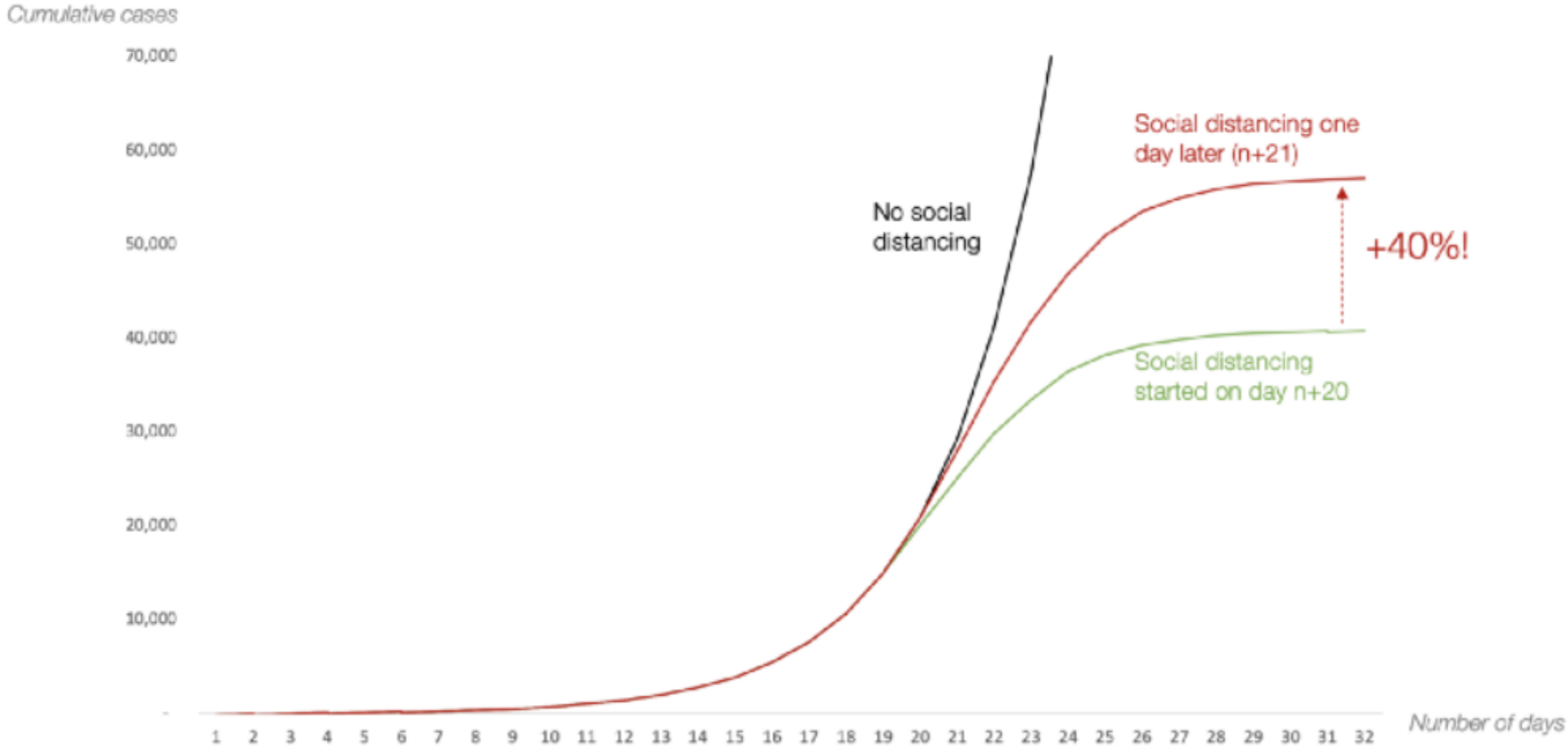
Source: Tomas Pueyo analysis on charts and data from paper: The effect of travel restrictions on the spread of the 2019 novel coronavirus (COVID-19) outbreak, Science Magazine, https://science.sciencemag.org/content/early/2020/03/05/science.aba9757

Chart 22: Model of Daily New Cases of Coronavirus with Social Distancing Measures Taken One Day Apart



Source: Tomas Pueyo

Chart 23: Model of Cumulative Cases of Coronavirus with Social Distancing Measures Taken One Day Apart



Source: Tomas Pueyo