

# Coronavirus!

**With 420 deaths in the U.S. as of Mar 22, a 2% death rate, and 3 weeks between infection and death, that means that as of Mar 1 there were 21000 coronavirus cases in the United States.**

**If it is doubling every seven days, then now about 170,000 people have and in the next week about 170,000 more people in the U.S. will catch coronavirus—which means 1/2000, currently 3800 of the 7.6 million inhabitants of San Francisco Bay. Touch a hard surface that any of those 3800 has touched in the last 48 hours, and the virus has a chance to jump to you...**

~~**With 31 deaths in the U.S. as of March 11, a 1% death rate, and up to 4 weeks between infection and death, that means that as of Feb 12 there were 3100 coronavirus cases in the United States.**~~

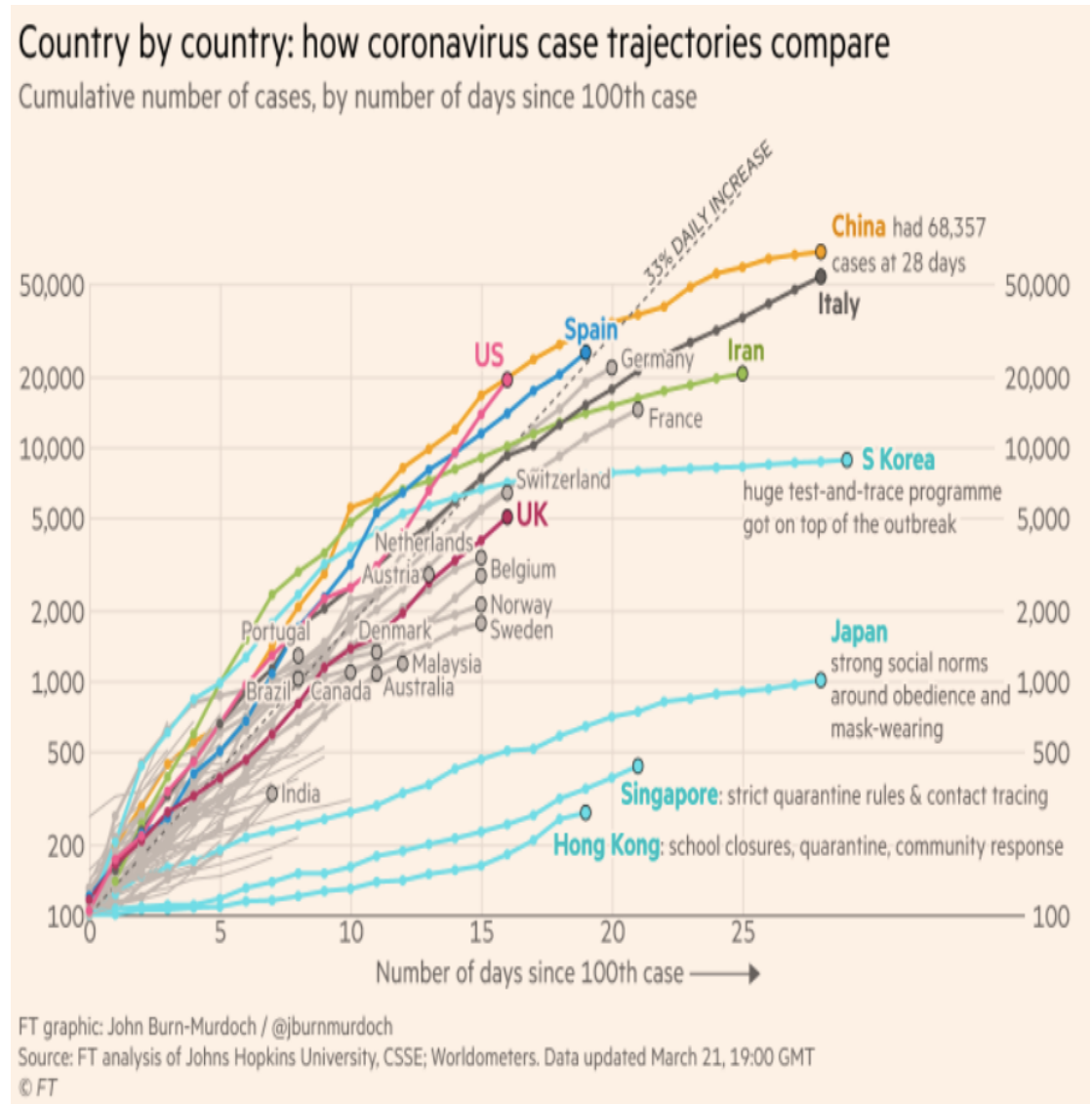
**These numbers could be three times too big. These numbers are probably not five times too small unless the thing is a lot less deadly, and there are a lot of asymptomatic cases...**

- What is wrong with this analysis?

# MOAR Coronavirus!

## What I am watching:

- **Max Roser & Hannah Ritchie:** *Coronavirus Disease (COVID-19)* — <https://ourworldindata.org/coronavirus> > ...
- **Worldometer:** *Coronavirus Update (Live)* <<https://www.worldometers.info/coronavirus/>>: '125,599 Cases and 4,605 Deaths from COVID-19 Virus Outbreak...
- **FT Coronavirus Tracker** <<https://www.ft.com/content/a26fbf7e-48f8-11ea-aeb3-955839e06441>>
- **Josh Marshall's COVID Twitter List** <<https://twitter.com/i/lists/1233998285779632128>>



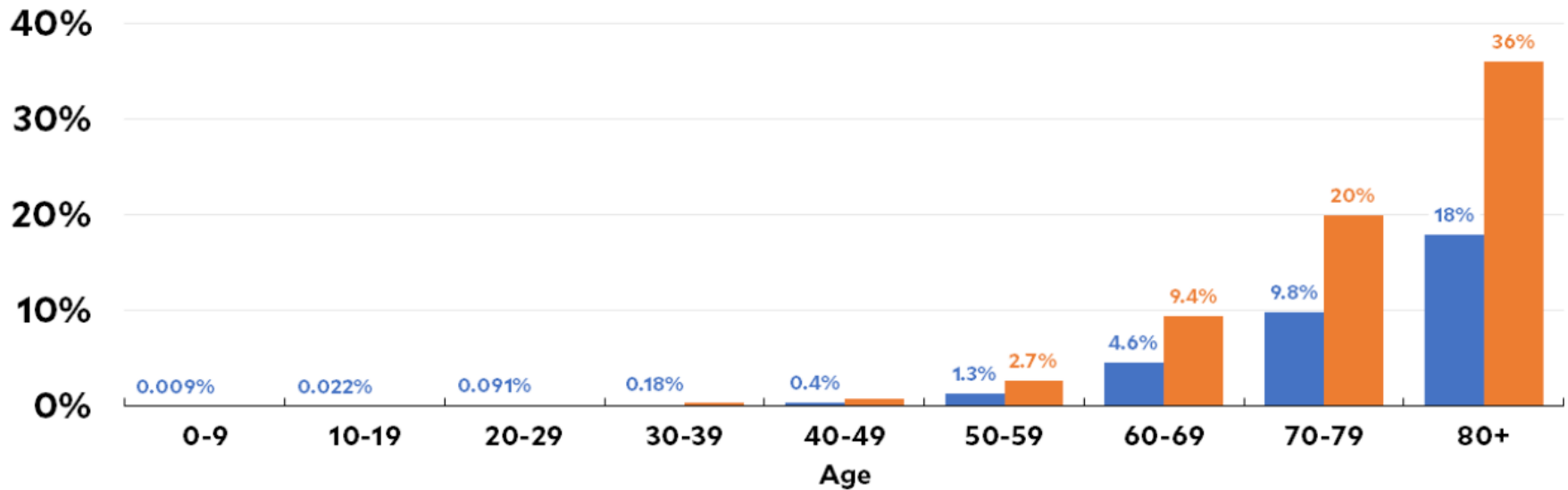
# MOAR Coronavirus!

## It's a Thing for Geezers!

- Mortality for the Youngs very low...
- It's the flu for them...

### Death Rate From Coronavirus

■ = All Infections, ■ = Only Symptomatic Infections



Source: Riou et al.

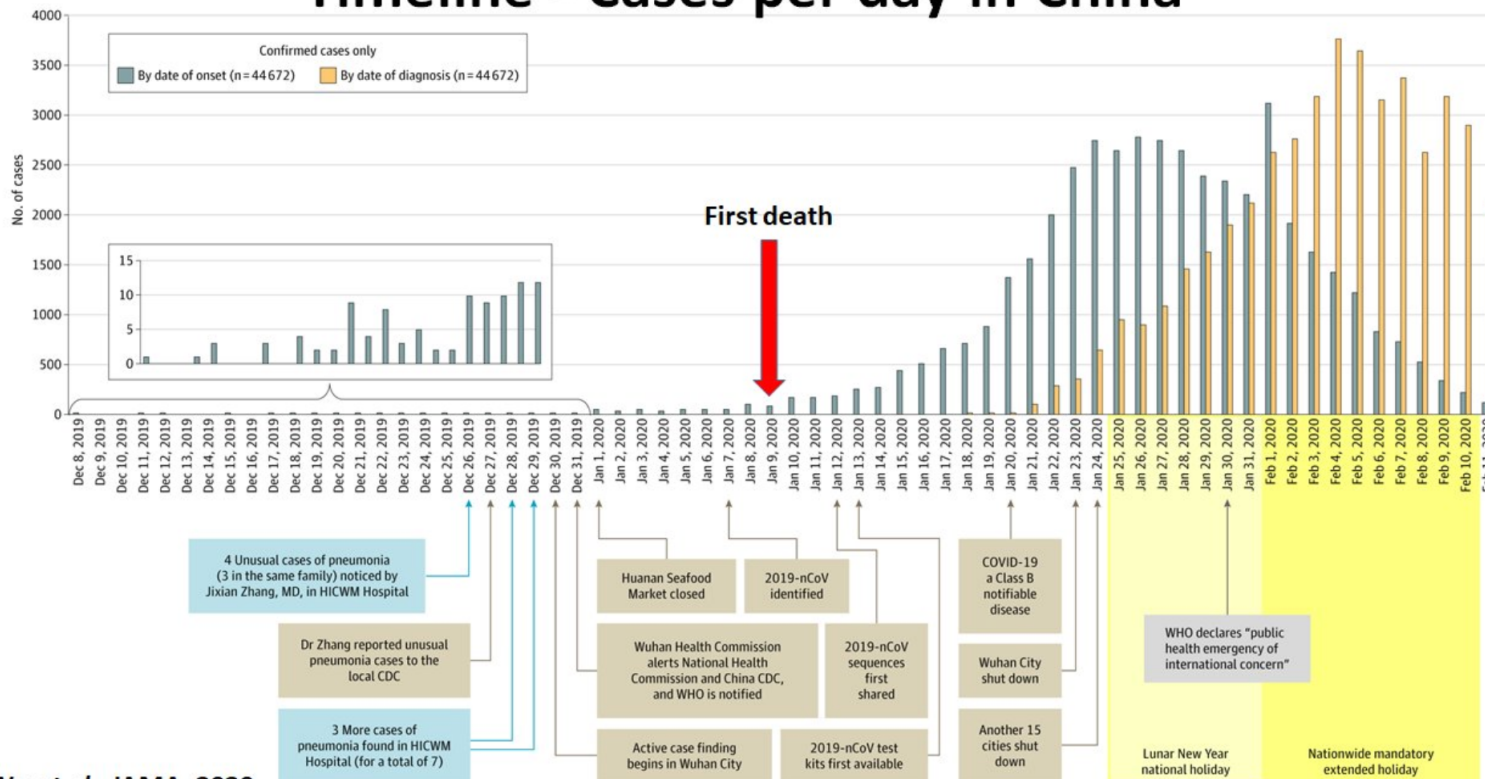
Mother Jones

# MOAR Coronavirus! II

## China Beat It!

- Shut down Wuhan when 200 cases per day
- That seems to have been a good decision

## Timeline - Cases per day in China



# MOAR Coronavirus! III

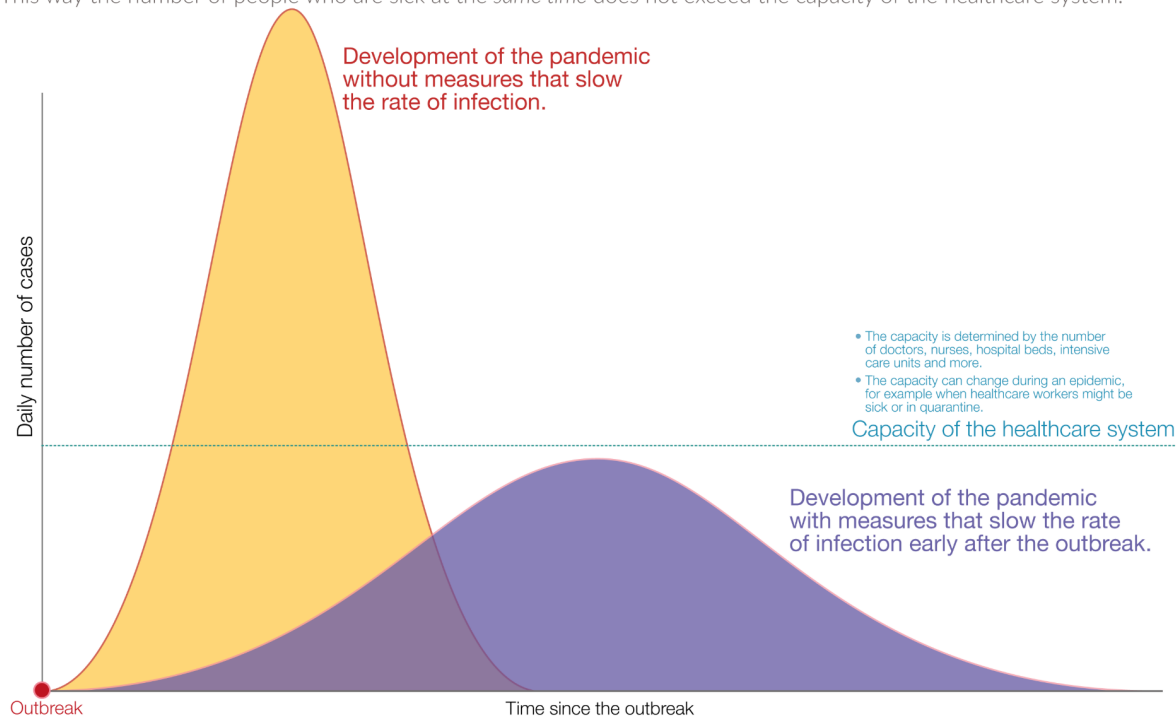
## When Is It Appropriate to Move on This?

- Immediate social distancing...
- Self-isolate if you have a cough and a fever...
- Hope that warmer temperatures will do to this what they did to SARS...
- Otherwise, when do you want to start spreading out transmission. It seems that early is as good as later...

In the outbreak of an epidemic *early* counter measures are important

Our World  
in Data

Their intention is to 'flatten the curve': to lower the rate of infection to spread out the epidemic. This way the number of people who are sick at the *same time* does not exceed the capacity of the healthcare system.



# Coronavirus! (March 16)

~~With 31 deaths in the U.S. as of March 11, a 1% death rate, and up to 4 weeks between infection and death, that means that as of Feb 12 there were 3100 coronavirus cases in the United States.~~

With 87 deaths in the U.S. as of Mar 16, a 1% death rate, and up to 4 weeks between infection and death, that means that as of Feb 17 there were 8700 coronavirus cases in the United States

If it is doubling every seven days, then now about 150,000 people have and in the next week about 150,000 more people in the U.S. will catch coronavirus—which means 1/2200, currently 3500 of the 7.6 million inhabitants of San Francisco Bay. Touch a hard surface that any of those 3500 has touched in the last 48 hours, and the virus has a chance to jump to you...

These numbers could be five times too big. These numbers are probably not five times too small unless the thing is a lot less deadly, and there are a lot of asymptomatic cases...

- What is wrong with this analysis?

# MOAR Coronavirus!

As of March 21: Things are not moving in the right direction:

- What is the  $R_0$ ?
- How can the  $R_0$  be changed?
- How will the  $R_0$  change?
- What is the asymptote share of the population?
- What is the mortality rate?

Coronavirus Cases:

**179,836**

[view by country](#)

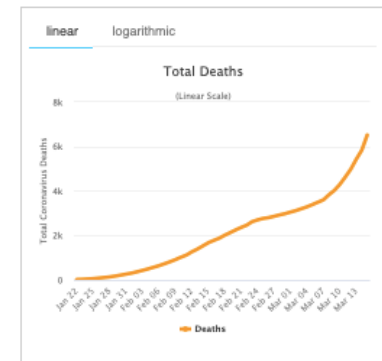
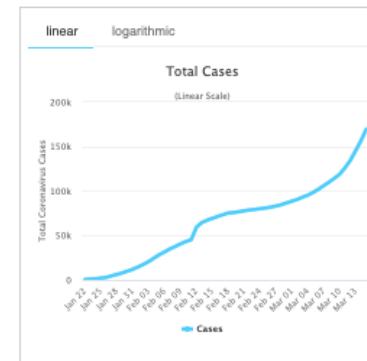
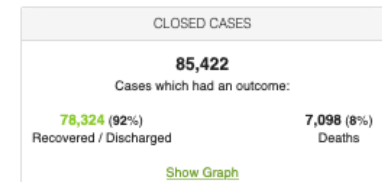
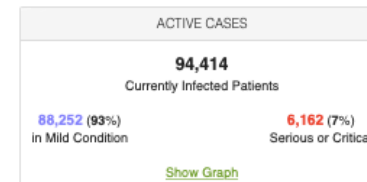
Deaths:

**7,098**

Recovered:

**78,324**

Country, Other	Total Cases	New Cases	Total Deaths	New Deaths	Total Recovered	Active Cases	Serious, Critical	Tot Cases/ 1M pop
<a href="#">China</a>	80,880	+36	3,213	+14	67,819	9,848	3,226	56.2
<a href="#">Italy</a>	27,980	+3,233	2,158	+349	2,749	23,073	1,851	462.8
<a href="#">Iran</a>	14,991	+1,053	853	+129	4,590	9,548		178.5
<a href="#">Spain</a>	9,428	+1,440	335	+41	530	8,563	272	201.6
<a href="#">S. Korea</a>	8,236	+74	75		1,137	7,024	59	160.6
<a href="#">Germany</a>	7,241	+1,428	15	+2	65	7,161	2	86.4
<a href="#">France</a>	5,423		127		12	5,284	400	83.1
<a href="#">USA</a>	4,186	+506	73	+5	73	4,040	12	12.6
Switzerland	2,353	+136	19	+5	4	2,330		271.9
<a href="#">UK</a>	1,543	+152	55	+20	52	1,436	20	22.7
Netherlands	1,413	+278	24	+4	2	1,387	45	82.5
Norway	1,323	+67	3		1	1,319	27	244.0



# MOAR Coronavirus!

**As of March 10: Things are not moving in the right direction:**

- What is the  $R_0$ ?
- How can the  $R_0$  be changed?
- How will the  $R_0$  change?
- What is the asymptote share of the population?
- What is the mortality rate?

Coronavirus Cases:

**125,599**

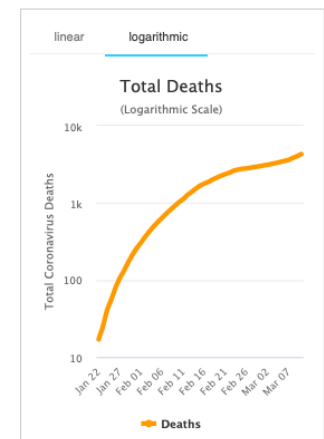
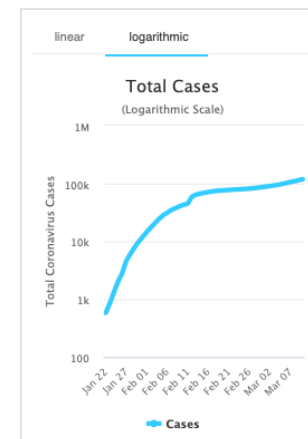
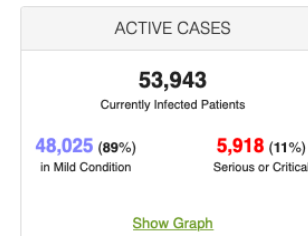
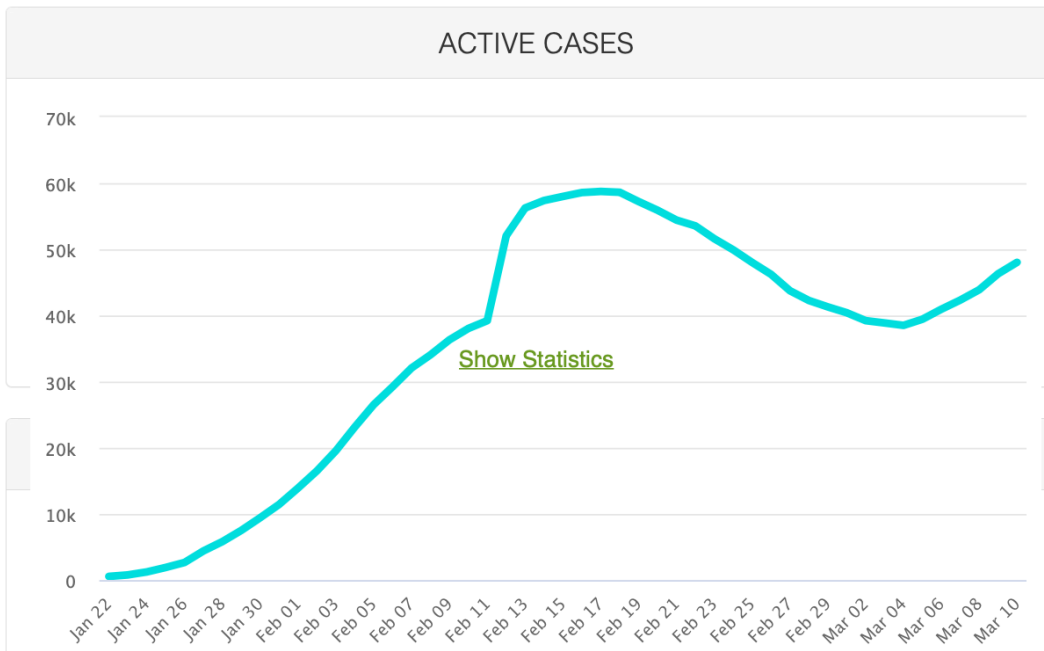
[view by country](#)

Deaths:

**4,605**

Recovered:

**67,051**





# Catch Our Breath...

- Ask a couple of questions?
- Make a couple of comments?
- Any more readings to recommend?



# Notes

