

The many disasters of the COVID-19 pandemic

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Principles of Complex Systems, Vols. 1 & 2 |
@pocsvox
CSYS/MATH 300 and 303, Fall, 2021

Prof. Peter Sheridan Dodds | @peterdodds

Computational Story Lab | Vermont Complex Systems Center
Vermont Advanced Computing Core | University of Vermont

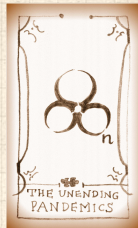


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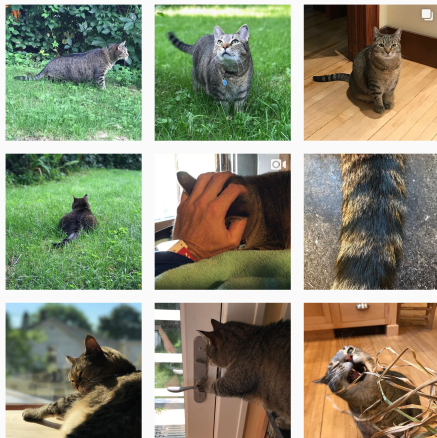
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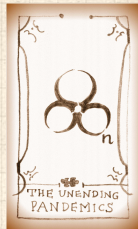




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 On Instagram at [pratchett_the_cat](https://www.instagram.com/pratchett_the_cat) 

Outline

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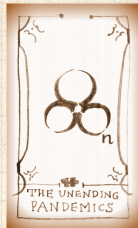
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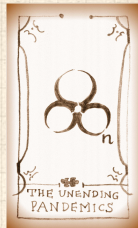
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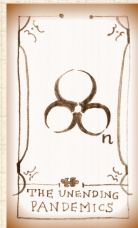
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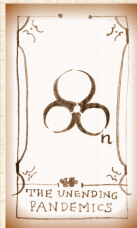
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🧱 It's not a real contagion.

🧱 Contagion: *con* = 'with' + *tangere* 'to touch.'



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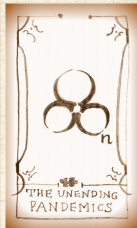
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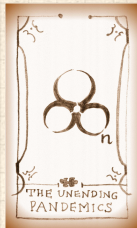
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- WHO declares COVID-19 transmission may be via airborne particles in ...



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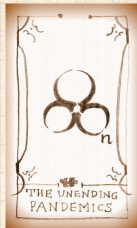
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- WHO declares COVID-19 transmission may be via airborne particles in ... May, 2021 [↗](#) after long resisting doing so [↗](#)





2020-01-14: WHO tweeted: 

"Preliminary investigations conducted by the Chinese authorities have found no clear evidence of human-to-human transmission of the novel #coronavirus."



2020-03-30: WHO Official Defends Guidance: 'We're Not Seeing' Airborne Transmission 



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The whole concept of 'disaster' is a disaster:




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 Dis + Aster = Bad Star = Astrological Ill Fate.





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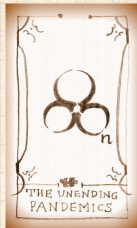
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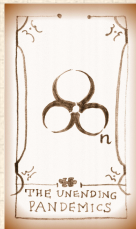
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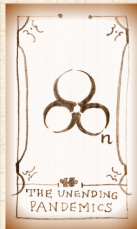
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- The stars and planets are the shadowy cabal.
- But we know there are different timelines available.
- Fate is a sometimes food, and there is only the story of fate. (more later in PoCS, Vol. 1).




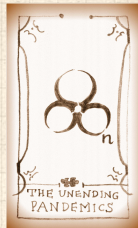
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Journal entry, 2020/02/11:

 Coronavirus





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 The idiocy about R_0 continues.



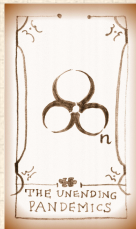
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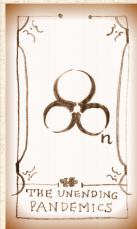
- 📦 Coronavirus
- 📦 The idiocy about R_0 continues.
- 📦 Unbelievably believably bad science.



Journal entry, 2020/02/21:

Twitter DMs to Sam Scarpino:

 Okay: The scientists studying pandemics need to be able to present some kind set of numbers that show how bad things are. The whole R_0 disaster has been waiting to happen because people have been ... lazily having fun with math models? Unconcerned about how to communicate vital scientific information? Stupid? I don't know. Maybe a radar plot visualization. I don't know.

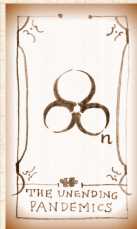


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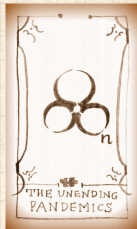
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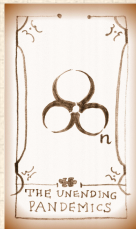
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- "When these three boundaries are crossed, we are in trouble"
- Measles has an R_0 of 20. We should all have it. Of course, there's no f**king time scale for R_0 so we don't know when that happens.



Journal entry, 2020/02/21, cont.:

Twitter DMs to Sam Scarpino:

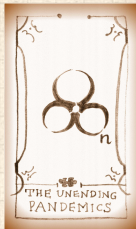
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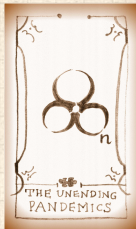
- One of the core pieces we had in our old paper:
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- And rare events matter so, so much. I keep seeing
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- One of the core pieces we had in our old paper: "What is N?"
- And rare events matter so, so much. I keep seeing new countries report their first case.
- South Korea with the church. WaPo says cases are "soaring" there. I haven't seen the numbers.



What is haPpeNing?

On March 11, within about 15 minutes after 9 pm
US EST:

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What is haPpeNing?

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1. Tom Hanks and Rita Wilson announced that they had tested positive for COVID-19.

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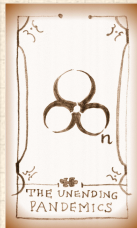
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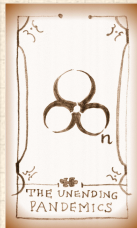
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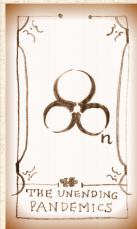
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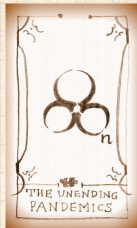
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3. Trump gave an Oval Office Address during which the Dow Jones Industrial Average futures dropped.
4. Also: former US vice presidential candidate Sarah Palin was appearing on the popular Fox TV show "The Masked Singer" performing Sir Mix-A-Lot's "Baby Got Back" in a bear costume.




2020/03/15, journal entry:


They look like us now 


 What must be done, and must have been done
from the start:



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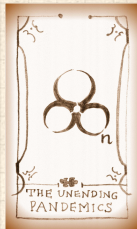
 Test everyone.



2020/03/15, journal entry:





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-  What must be done, and must have been done from the start:
-  Test everyone.
-  We need sunlight, we need knowledge.






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-  What must be done, and must have been done from the start:
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-  We need sunlight, we need knowledge.
-  And we needed to be prepared.



“Narrative Epidemiology” through TV Tropes:

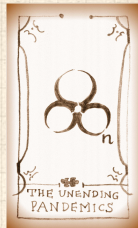
 The virus as this season’s Big Bad  and a Complete Monster 

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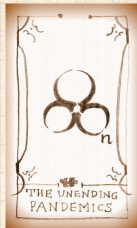
 Ignore the Scientists 

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
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
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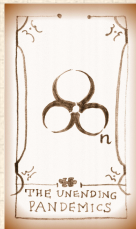
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











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






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
















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











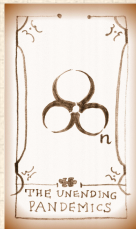
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-  Bill Gates created the virus and wants to put chips in your head: Poison-and-Cure Gambit 
-  Tyrant Takes the Helm 
-  Fundamental problem: We much prefer stories of individuals, not systems.



Story versus the Virus

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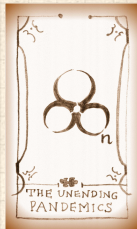
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Journal entry, 2020/03/21:

The complete incompetence of Trump, our doom

[Washington Post article, March 20](#) 

Azar couldn't get through to Trump to speak with him about the virus until Jan. 18, according to two senior administration officials. When he reached Trump by phone, the president interjected to ask about vaping and when flavored vaping products would be back on the market, the senior administration officials said.



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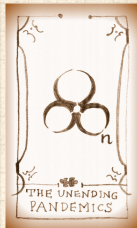
References

Journal entry, 2020/03/21, cont.:

On Feb. 25, Nancy Messonnier, a senior CDC official, sounded perhaps the most significant public alarm to that point, when she told reporters that the coronavirus was likely to spread within communities in the United States and that disruptions to daily life could be "severe." Trump called Azar on his way back from a trip to India and complained that Messonnier was scaring the stock markets, according to two senior administration officials.



Like life, death finds a way.



System failure—things fall apart


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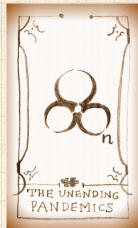
The dashboards
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Excess Deaths

References

Mismeasurement of Death

 We couldn't and still can't count cases and deaths properly.



System failure—things fall apart

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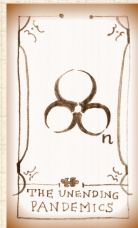
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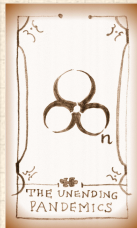
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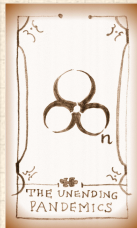
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System failure—things fall apart







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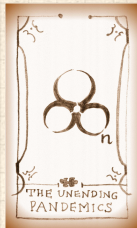
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System failure—things fall apart

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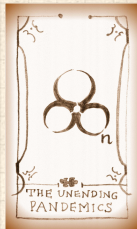
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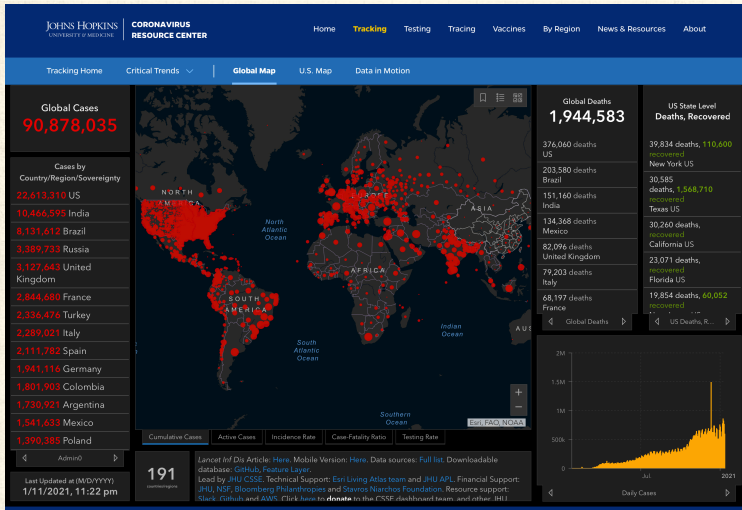
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- 🧱 Excess deaths in the US have run at about 35% more than reported COVID deaths.
- 🧱 Estimate: Over 500,000 excess deaths in the US from March 15 to December 31, 2020.



Eight significant digits, no errors:

January 11, 2020, Johns Hopkins:

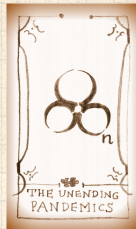


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The dashboards
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Excess Deaths

References



January 7, 2020, Financial Times, beautiful, misleading:

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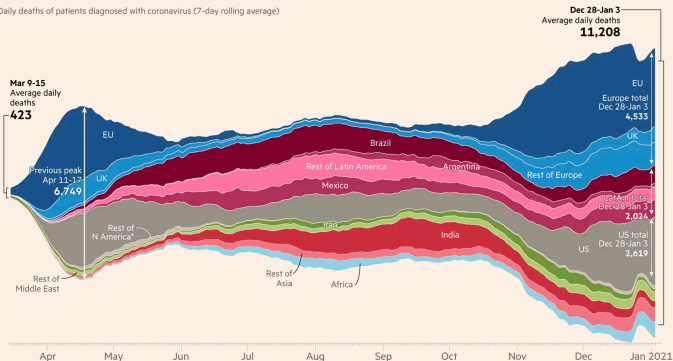
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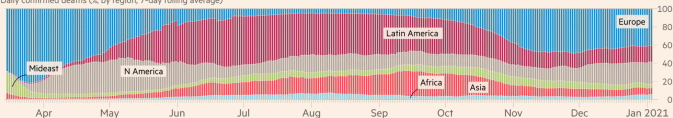
References

Covid-19's soaring death toll dwarfs figures from first wave

Daily deaths of patients diagnosed with coronavirus (7-day rolling average)



Daily confirmed deaths (% by region, 7-day rolling average)



FT graphic: Steven Bernard / @sdbernard

Source: FT analysis of data from WHO, Covid Tracking Project, Johns Hopkins University, and Public Health Agency.



Eventually: time series with excess deaths:

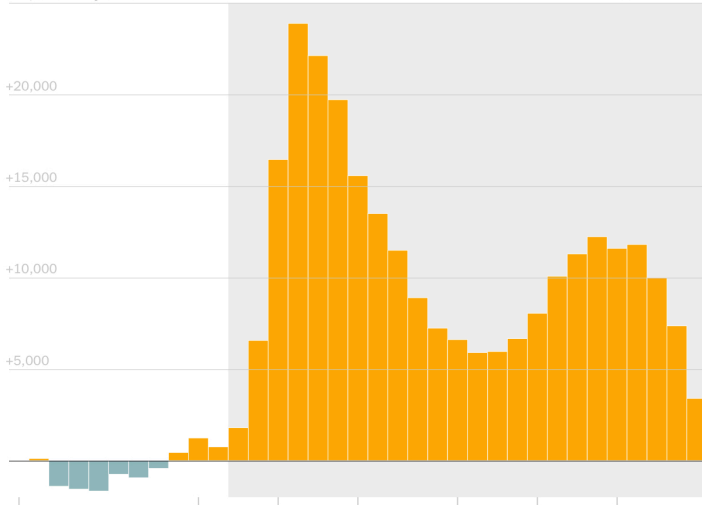
September 20, New York Times:

U.S. Deaths Above or Below Normal

257,900 excess deaths from March 15 to Aug. 29

+25,000 weekly deaths

Recent weeks are likely undercounts.

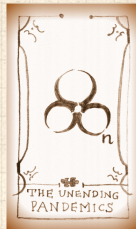


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Excess Deaths

References



Financial Times:

January 7, 2020, Financial Times:


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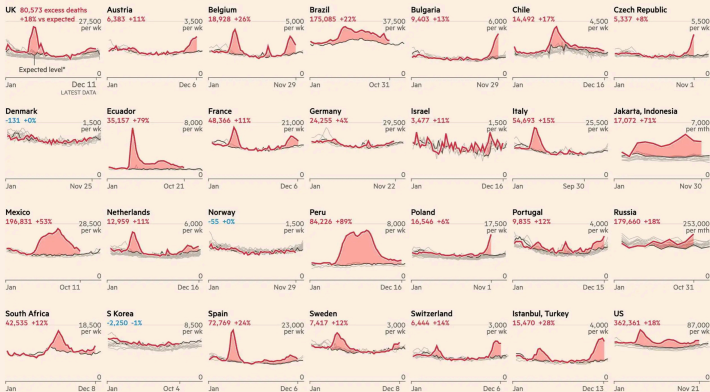
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Excess Deaths

References

Death rates have climbed far above historical averages in many countries that have faced Covid-19 outbreaks

Number of deaths per week from all causes, 2020 vs recent years:  Shading indicates total excess deaths since 100 confirmed cases in the country

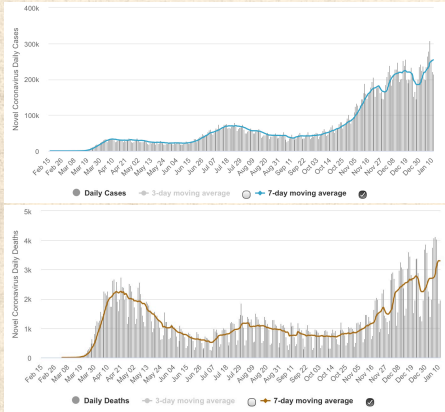


*Adjusted for trend over recent years
Sources: FT analysis of mortality data from individual countries and the Human Mortality Database. Data updated December 22
FT graphic: John Burn-Murdoch / @burnmurdoch
© FT



The humans:

Timely delivery of Stimulus Packages for the Virus and SIR models:

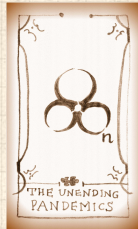


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Excess Deaths

References



Vacations + fatigue + stories.

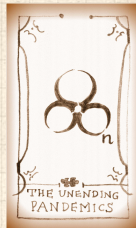
The Mismeasurement of Death:

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The dashboards
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Excess Deaths

References



We need a Grim Scorekeeper

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Excess Deaths

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Prominent COVID-19 dashboards:

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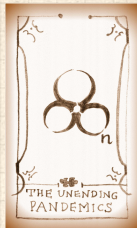
Excess Deaths

References

 [Johns Hopkins Coronavirus Resource Center](#) 

 [Worldometer](#) 

 Financial Times (moved to tracking excess deaths):
[https://www.ft.com/content/
a2901ce8-5eb7-4633-b89c-cbdf5b386938](https://www.ft.com/content/a2901ce8-5eb7-4633-b89c-cbdf5b386938)

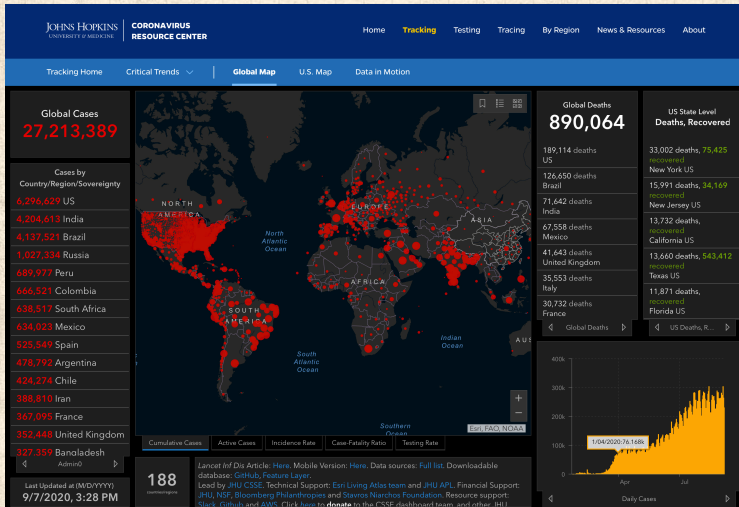


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Excess Deaths

References





"An interactive web-based dashboard to track COVID-19 in real time" 

Dong, Du, and Gardner,
The Lancet Infectious Diseases, , , 2020. ^[1]

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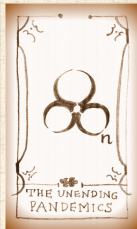
Excess Deaths

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The Lancet Infectious Diseases, , , 2020. ^[1]

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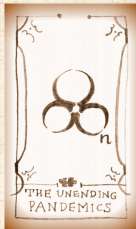
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The Mismeasurement of Death:

Tracking excess deaths:



CDC:

https://www.cdc.gov/nchs/nvss/vsrr/covid19/excess_deaths.htm



The New York Times:

<https://www.nytimes.com/interactive/2020/05/05/us/coronavirus-death-toll-us.html>



The Economist:

<https://www.economist.com/graphic-detail/2020/07/15/tracking-covid-19-excess-deaths-across-countries>

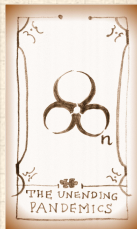
Data:

<https://github.com/TheEconomist/covid-19-excess-deaths-tracker>



Financial Times:

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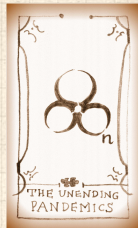


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References



References I

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References

- [1] E. Dong, H. Du, and L. Gardner.
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COVID-19 in real time.
[The Lancet Infectious Diseases, 2020. pdf](#) 