COVID-19 DATA

ABSTRACT

With the exception of one supporting reference to science magazine all references in this report are from official sources. I'm writing this report as a concerned citizen because by my estimation we are drastically overreacting to COVID-19.

DEATH RATES

Both the CDC and the WHO publish death rate statistics. Let's have a look (**FIG.1**):

	Confirmed Cases	Deaths	Death Rate
WHO	12,768,307	566,654	4.4%
CDC	3,296,599	134,884	4.0%

FIG.1
https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html
https://www.who.int/emergencies/diseases/novel-coronavirus-2019

So around 4%. But COIVD-19 affects different people differently. Let's break that down by age and see what we get (**FIG.2 and FIG.3**):

<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
9	7	14	149	795	2,026	5,650	13,808	23,866	30,369	38,048

FIG.2 - Number of deaths by age in the U.S.

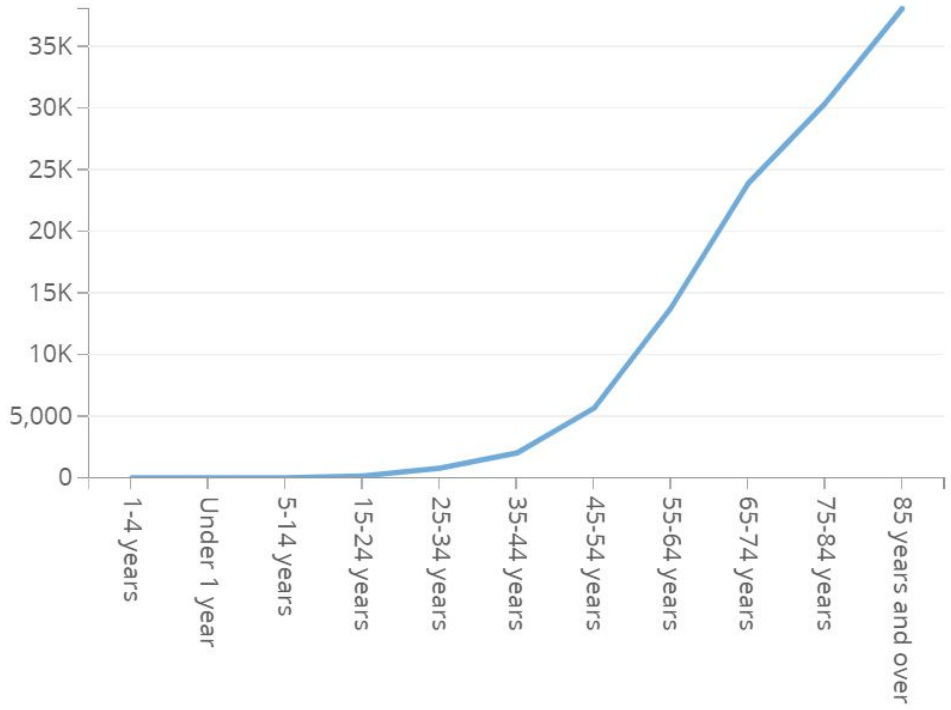

FIG.3

https://data.cdc.gov/d/9bhg-hcku/visualization
The report can't be saved as a link but you can check it yourself:
Dimension: Age Group
Measure: COVID-19 Deaths
Filters:
From 2/1/2020-7/13/2020
Sex (Male and Female)
Age group (everything except All Ages)
Axis (far left) > Chart Sorting > Small to Large

Note that because of a delay in reporting the death count from **FIG.2** and **FIG.3** is smaller than the death count in **FIG.1.** See **FIG.4.**

$$9+7+14+149+795+2,026+5,650+13,808+23,866+30,369+38,048 = 114,741$$

FIG.4

https://data.cdc.gov/NCHS/Provisional-COVID-19-Death-Counts-by-Sex-Age-and-S/9bhg-hcku

Let's use that data to figure out what percent of the deaths can be attributed to each age range. So, for example, nine children less than one year old have died from COVID-19 in the United States. The total number of deaths from **FIG.4** is 114,741. Divide the smaller number by the bigger number to get the ratio: 9/114,741 = 0.000078 and multiply that by a hundred to get the

percent. So .008% of the COVID-19 deaths went to children under one year old. Here's the rest of the table (**FIG.5**):

<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
0%	0%	0%	.13%	.69%	1.77%	4.92%	12.03%	20.8%	26.47%	33.16%

FIG.5 - percent of COVID-19 deaths by age range in the U.S. (rounded to nearest hundredth)

Okay that gives a more clear picture but we still don't know what the death rate is by age range. For that we're going to use Bayes' Theorem: (**FIG.6**):

$$\frac{(Age\ range\ death\ rate) \cdot (Population\ death\ rate)}{Probability\ of\ \ being\ in\ age\ range} = Death\ rate\ for\ age\ range$$

FIG.6

We know:

- Age range death rate
- Population death rate

And we still need:

- Probability of being in age range

Fortunately, we can get the probability of being in an age range from the U.S. Census:

<5	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
6.1%	12.6%	13%	14%	12.6%	12.6%	12.8%	9.8%	4.8%	1.8%

FIG.7 - Percent of U.S. Population by age range in the U.S. in 2019.
https://www.census.gov/data/tables/2019/demo/age-and-sex/2019-age-sex-composition.html

Using the 35-44 age range as an example we get:

$$\frac{.0177 \cdot .04}{.126} = .00561 = .56\%$$

Here's the rest of the table (**FIG.8**):

<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
0%	0%	0%	.04%	.2%	.56%	1.56%	3.76%	8.49%	22.06%	73%

FIG.8 - COVID-19 death rates assuming zero unreported cases.

UNREPORTED CASES

Almost certainly not everyone who has COVID-19 has been tested. But how can we make a good guess about how many unreported cases there are? Well, what about the mild and asymptomatic cases? According to the WHO:

"For COVID-19, data to date suggest that 80% of infections are mild or asymptomatic"

FIG.9

https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200306-sitrep-46-covid-19.pdf

That backs up a science magazine research article from May :

"We estimate that 86% of all infections were undocumented"

FIG.10

https://science.sciencemag.org/content/368/6490/489/tab-pdf

DEATH RATES REVISITED

Let's recalculate the death rates in **FIG.5** to account for the number of unreported cases. I'm going to go with 80% (**FIG.9**) as the number of unreported COVID-19 cases. To do the rest of the calculations we first have to calculate the total number of COVID-19 cases based on the percent that go unreported (**FIG.11**):

$$(\text{total})(1-.8)=\text{confirmed}$$

$$\text{total}=\text{confirmed}/.2$$

$$\text{total} = 3{,}296{,}599/.2$$

$$\text{total} = 16{,}482{,}995$$

FIG.11

Next, let's recalculate the death rates (**FIG.12** and **FIG.13**):

	Cases	Deaths	Death Rate
CDC adjusted to include unreported	16,482,995	134,884	.82%

FIG.12

<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
0%	0%	0%	.01%	.04%	.12%	.32%	.77%	1.74%	4.52%	15%

FIG.13 - COVID-19 death rates when adjusted for unreported cases.

COMPARISON TO OTHER ILLNESSES

How much worse is COVID-19 than other illnesses? Let's compare COVID-19 deaths with Pneumonia deaths over the same time period:

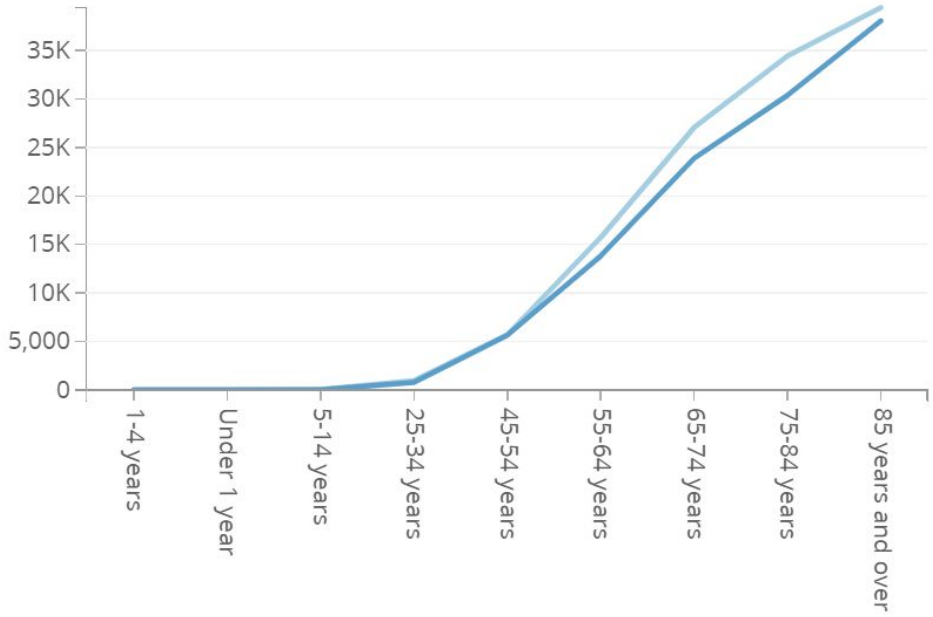

FIG.14 - COVID-19 deaths vs Pneumonia deaths. COVID-19 is the line on the bottom.

https://data.cdc.gov/d/9bhg-hcku/visualization
The report can't be saved as a link but you can check it yourself:
Dimension: Age Group
Measure1: Pneumonia Deaths
Measure2: COVID-19 Deaths
Filters:
From 2/1/2020-7/13/2020
Sex (Male and Female)
Age group (everything except All Ages)
Axis (far left) > Chart Sorting > Small to Large

So more people died from Pneumonia than COVID-19 between February and July of 2020. How does Pneumonia stack up against the other big killers? Let's see (**FIG.15):**

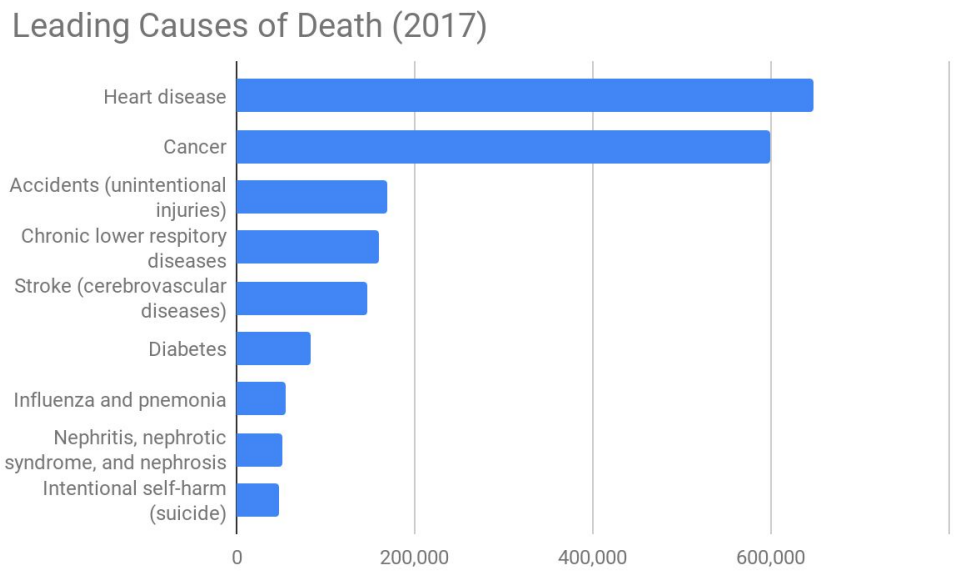

FIG.15 - Leading causes of death in the U.S. in 2017.
https://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm

THE CURVE

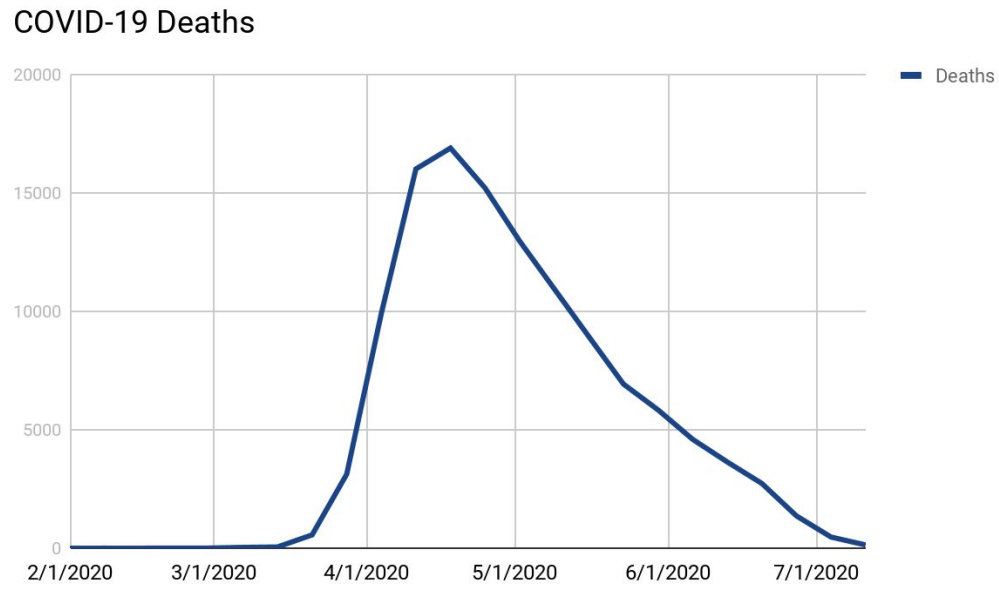

FIG.16 - All deaths involving COVID-19 in the U.S.
https://www.cdc.gov/nchs/nvss/vsrr/covid19/index.htm

LOCKDOWN AND THE ECONOMY

The Coronavirus Aid, Relief, and Economic Security (CARES) Act cost $2 trillion dollars. At the same time at least 20 million people were forced to file unemployment claims because of the COVID-19 lockdowns. That means a lot of people lost their health insurance.

https://home.treasury.gov/policy-issues/cares
https://www.bls.gov/news.release/pdf/empsit.pdf

PUBLIC SCHOOLS

The death rate for children is 0% (**FIG.5** and **FIG.13**). How much long term damage is being caused by keeping our nation's youth away from school and their friends? I don't know. I would guess a lot. At the very least 21 million low-income children participated in the National School Lunch Program on a typical day in the 2017-2018 school year.

https://frac.org/programs/national-school-lunch-program

CENSORSHIP AND THE MEDIA

What does censorship have to do with COVID-19? A lot. While the media is cramming misinformation down our throats tech companies are censoring dissenting voices. This has created an environment where there are no truths but the approved truths. Garbage pseudoscience that fits the agenda is promoted while fact-based research that goes against the agenda is deleted from social media and filtered out of search queries.

https://www.whitehouse.gov/presidential-actions/executive-order-preventing-online-censorship/

MASKS AND LOCKDOWNS

Let's have a look at flu deaths over the past few years (**FIG.17):**

Season	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Flu Deaths	22,705	38,230	61,099	34,200	*24,000-62,000

FIG.17
https://www.cdc.gov/flu/about/burden/2015-2016.html
https://www.cdc.gov/flu/about/burden/2016-2017.html
https://www.cdc.gov/flu/about/burden/2017-2018.html
https://www.cdc.gov/flu/about/burden/2018-2019.html
https://www.cdc.gov/flu/about/burden/preliminary-in-season-estimates.htm
* From October 1 2019 through April 4, 2020. Results are tentative

What assertions can we make from this data? Did wearing masks keep people from dying from the flu? It's hard to tell since there is so much variance and because 2019-2020 looks like a pretty normal year. But we can safely say that masks and lockdowns did not have a drastic effect on flu deaths.

TAKE ACTION

No masks, no lockdowns, open the schools!

Ohio COVID-19 hotline (you can voice your concerns here)	833-427-5634 Press 1 twice to talk to a person.
Governor DeWine's contact form	https://governor.ohio.gov/wps/portal/gov/governor/contact

DISTRIBUTE AND IMPROVE THIS DOCUMENT

- You may distribute this document. It can be found at smchughinfo.github.io/covid.pdf.
- If you want to point out an error or would like to join a mailing list about this issue send me an email at seanmchugh513@protonmail.com.