

Three Features of Covid-19

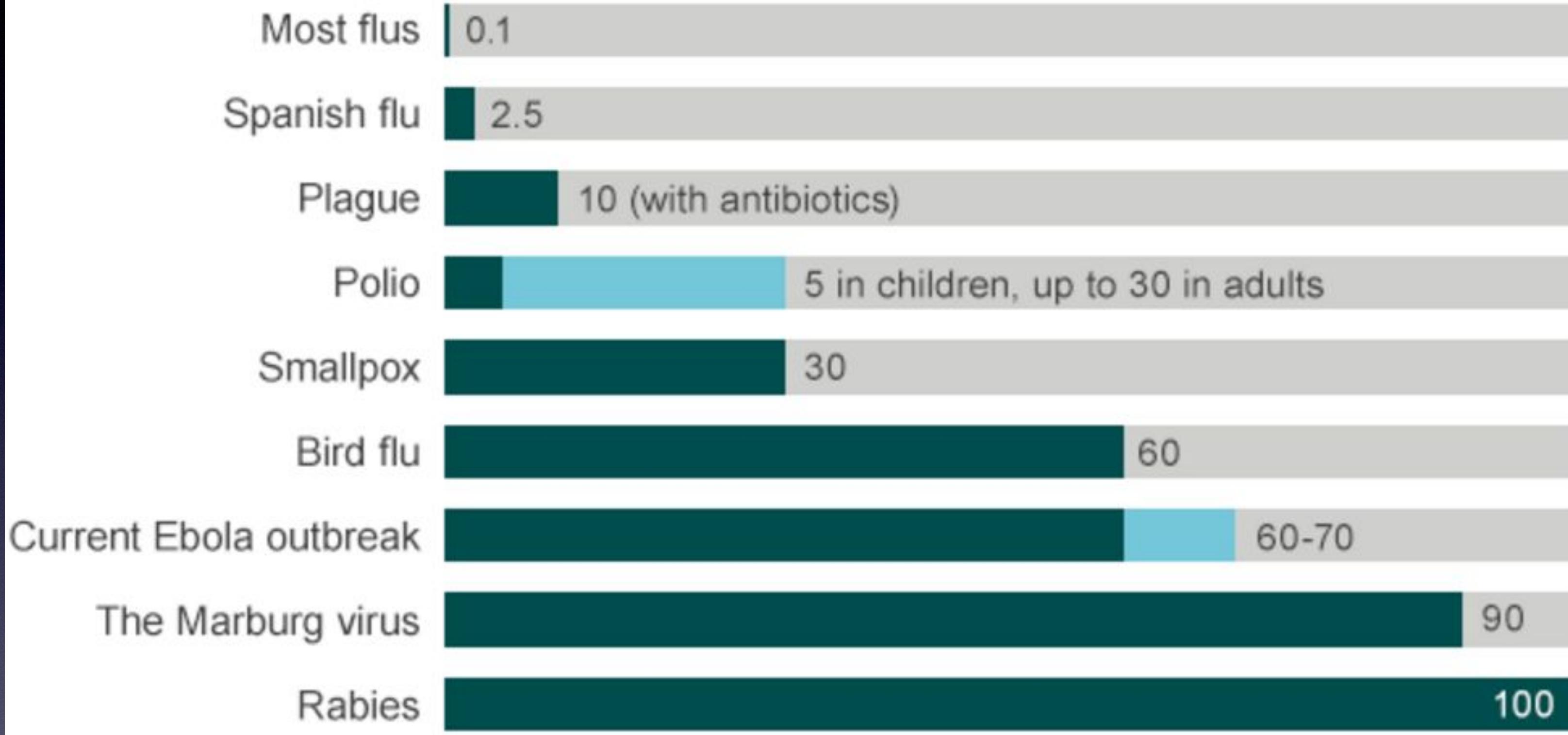
- Infection
- Disproportionate Effects
- Long Covid

Infection vs virulence

- Virulence: “the relative capacity of a pathogen (such as a bacterium or virus) to overcome a host's defenses and cause disease or damage”
- Contagious: “transmissible by direct or indirect contact with an infected person”

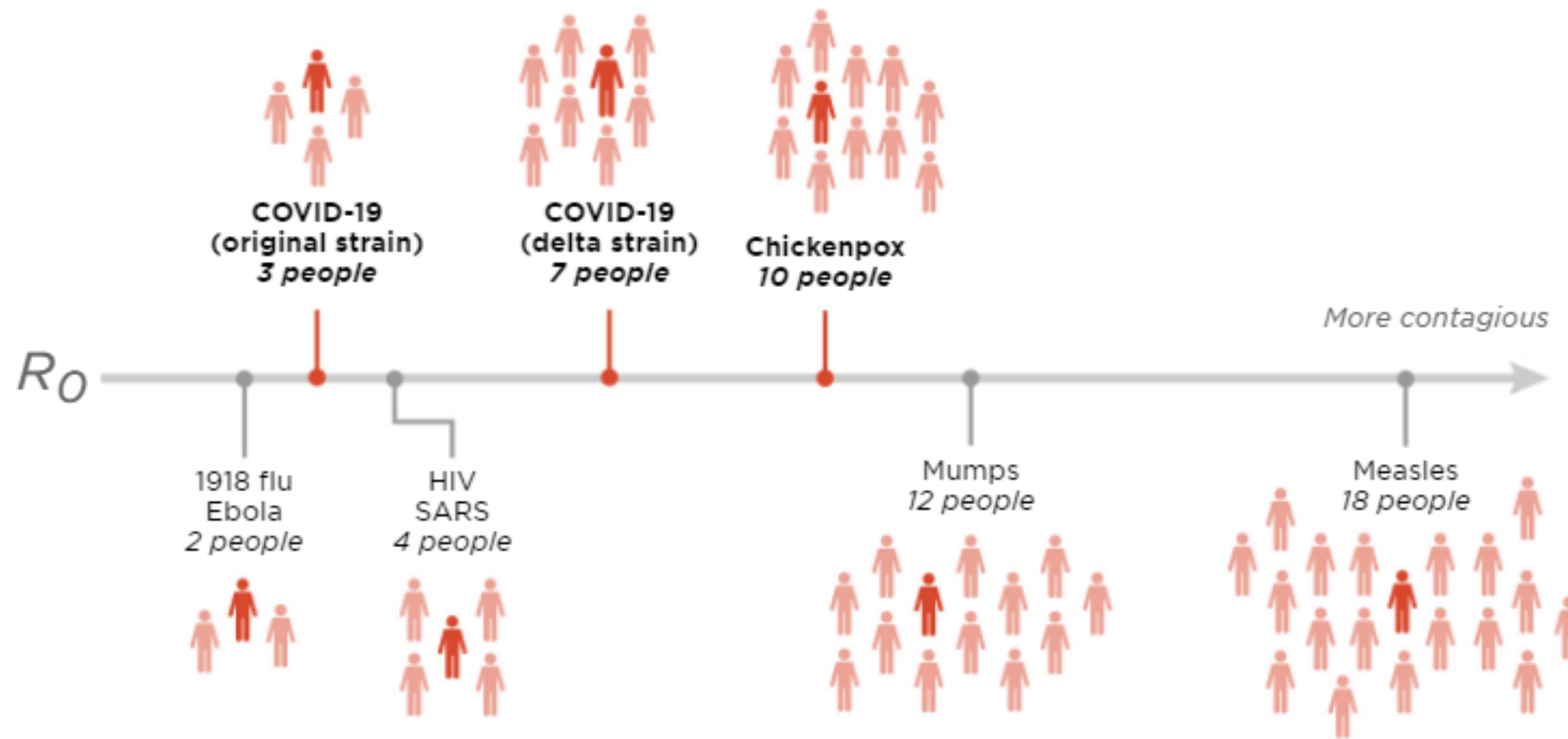
Disease mortality rate compared

%



Source: CDC, WHO

The number of **people** that **one sick person** will infect (on average) is called R_0 .
Here are the maximum R_0 values for a few viruses.

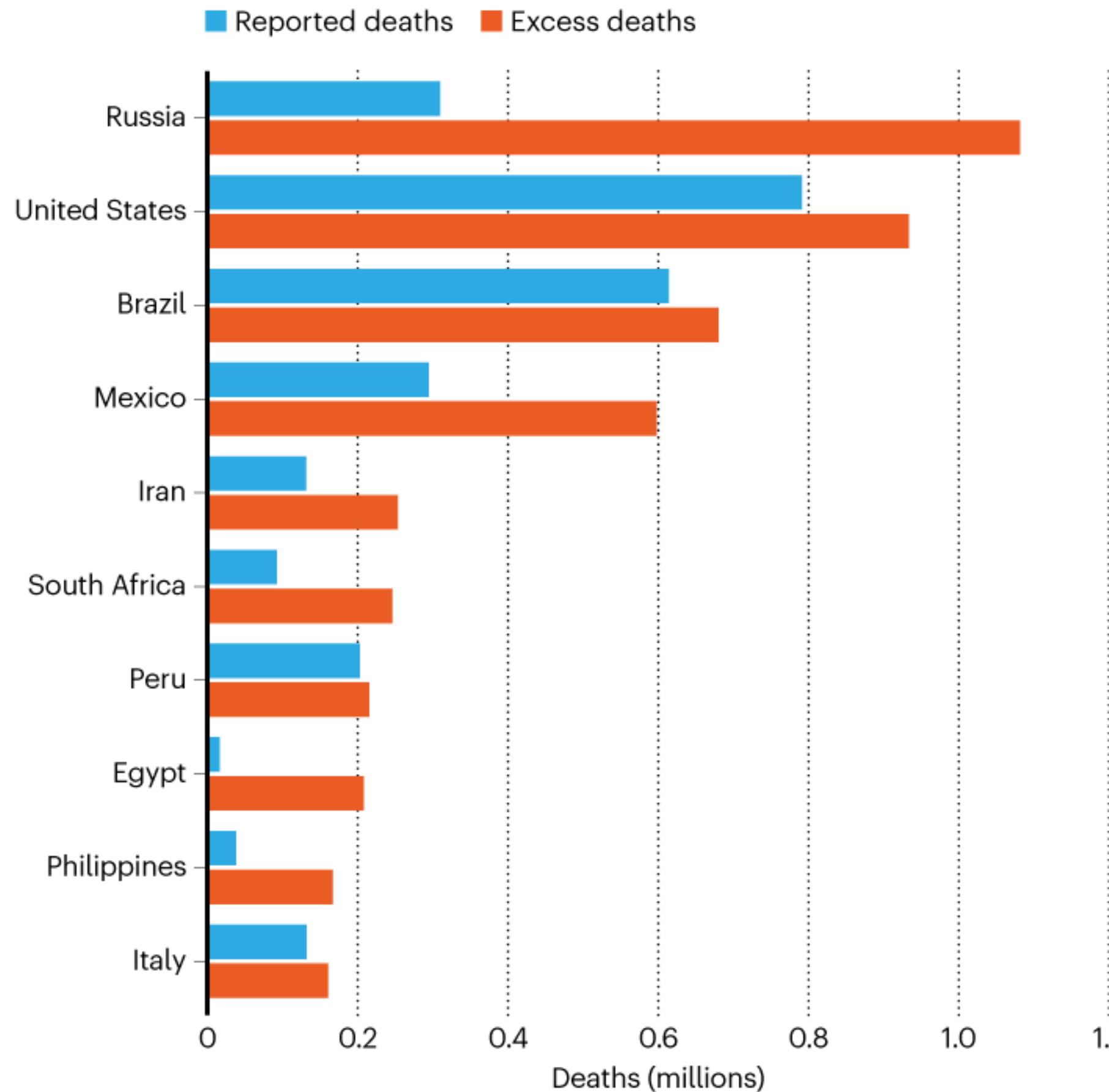


Source: *The Lancet* (1918 flu, SARS), University of Michigan School of Public Health (COVID-19, ebola, measles), Johns Hopkins University School of Public Health (chickenpox), Proceedings of the National Academy of Sciences (HIV), Tom Wenseleers at the University of Leuven (COVID-19 delta variant), Australian Government Department of Health (mumps)

Credit: Michaeleen Doucleff, Alyson Hurt and Adam Cole/NPR. Icon by Gerard Higgins/The Noun Project.

EXCESS DEATHS

The 116 countries and territories in the World Mortality Dataset have reported 4.1 million COVID-19 deaths so far, but their combined excess mortality is around 1.6 times higher, at 6.5 million. Ten example countries are shown.

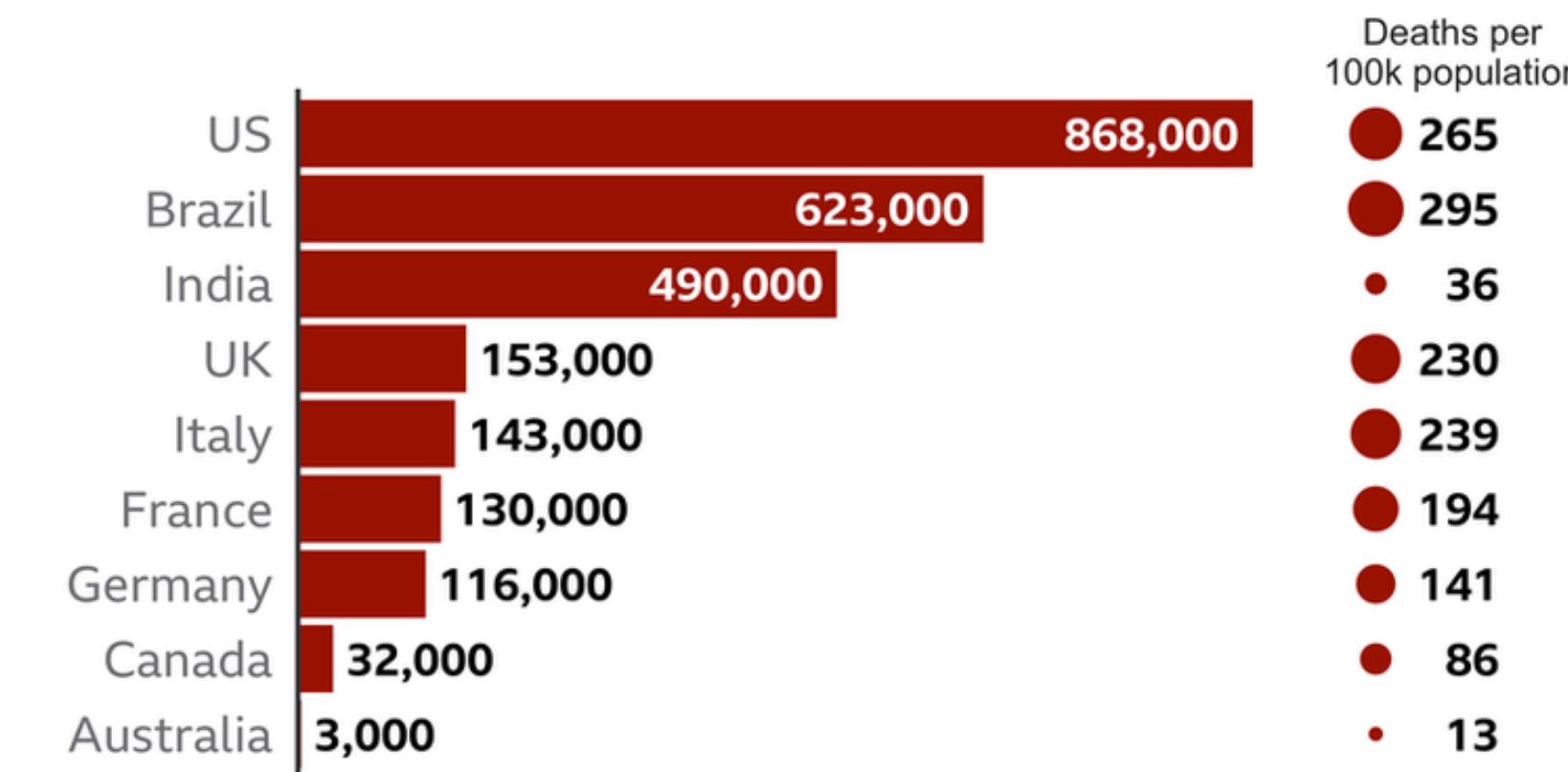


Data collated up to 31 Dec 2021 (Russia); 12 Dec 2021 (United States); 30 Nov 2021 (Brazil); 14 Nov 2021 (Mexico); 2 Jan 2022 (Iran); 9 Jan 2022 (South Africa and Peru); 30 Jun 2021 (Egypt); 30 Sept 2021 (Philippines); 31 Oct 2021 (Italy). The Economist's model gives similar figures because it draws on World Mortality Dataset numbers for excess deaths, but adds modelling to bring results to the present day.

©nature

Reported deaths in selected countries

Recorded coronavirus deaths, total and per capita

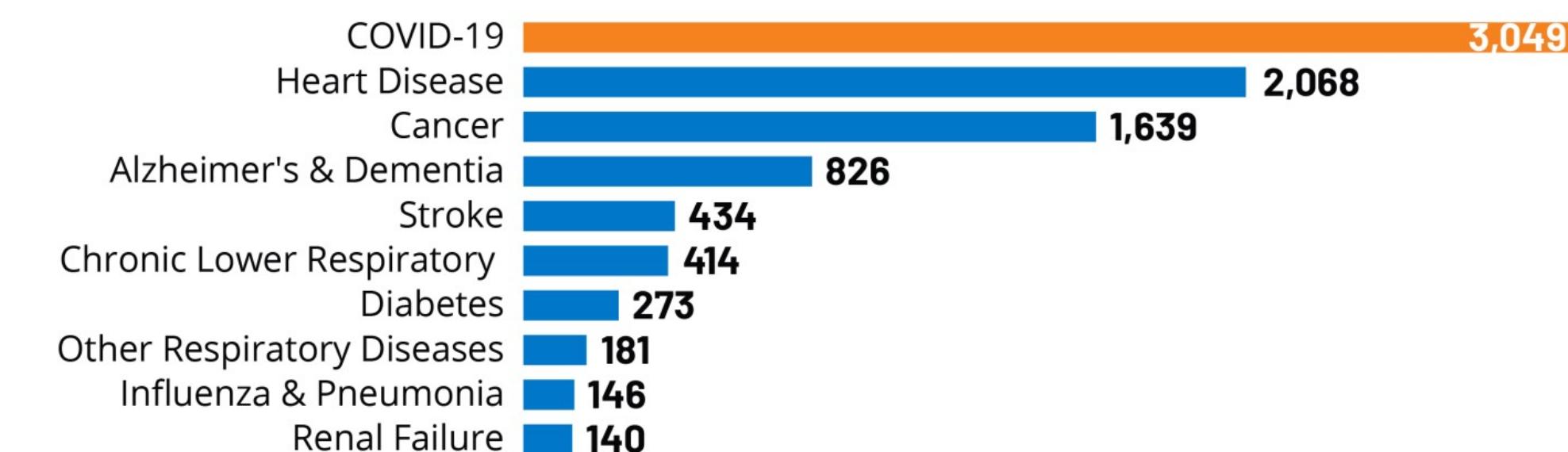


Note: Country death totals have been rounded down to the nearest 1,000

Source: Johns Hopkins University, Gov.uk dashboard, 25 Jan

COVID-19 is the Number One Cause of Death in the U.S. in Early 2021

Average daily deaths in the U.S. from COVID-19 (Jan. 2021) and other leading causes (2020)

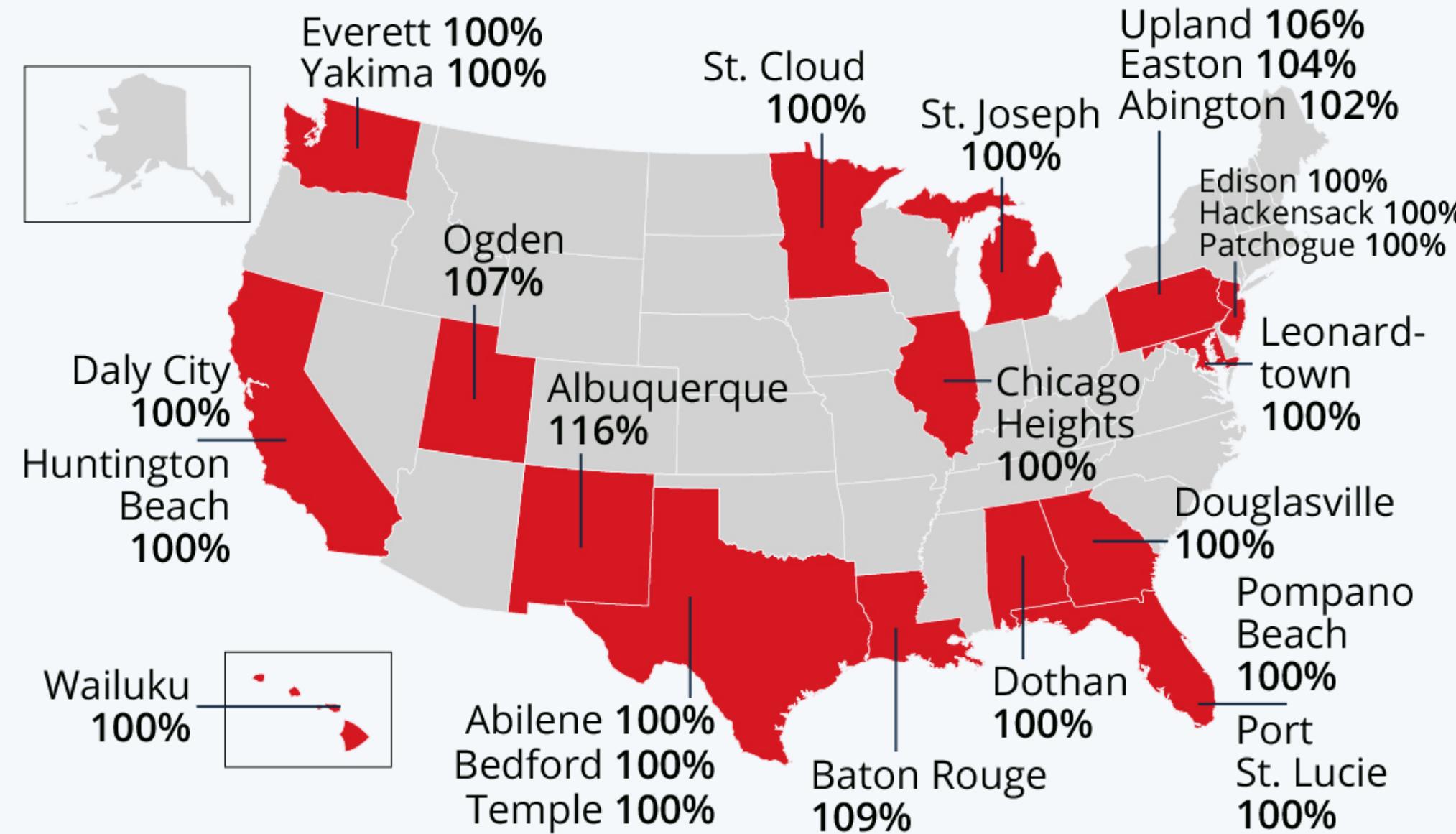


NOTES: The COVID-19 mortality rate is the daily average for January 2021 through January 26, 2021 using the KFF COVID-19 Tracker data. Mortality rates for causes other than COVID-19 are the average of Morbidity and Mortality Weekly Report (MMWR) weeks 1-52 in 2020 reported by CDC. Heart disease refers to all circulatory diseases except stroke. Accidents are not included in the data source, but typically rank as the 3rd leading cause of death.
SOURCE: KFF analysis of 2020 CDC mortality data

Peterson-KFF
Health System Tracker

Many U.S. Hospitals Are Running Critically Short Of ICU Beds

ICU occupancy rates at or above 100% in U.S. hospital service areas with high populations*



* Based on seven-day averages for the week ending Thursday, Dec. 3

Source: Department of Health and Human Services via The New York Times



statista

HHS Protect ICU Bed Dashboard

82,508

Staffed ICU Beds

6,164 Hospitals Reporting

66,336

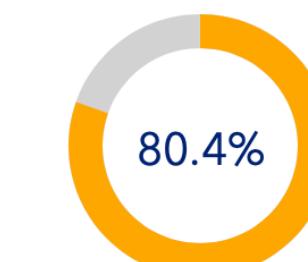
ICU Beds in Use

6,165 Hospitals Reporting

23,414

ICU Beds in Use for COVID-19

6,161 Hospitals Reporting



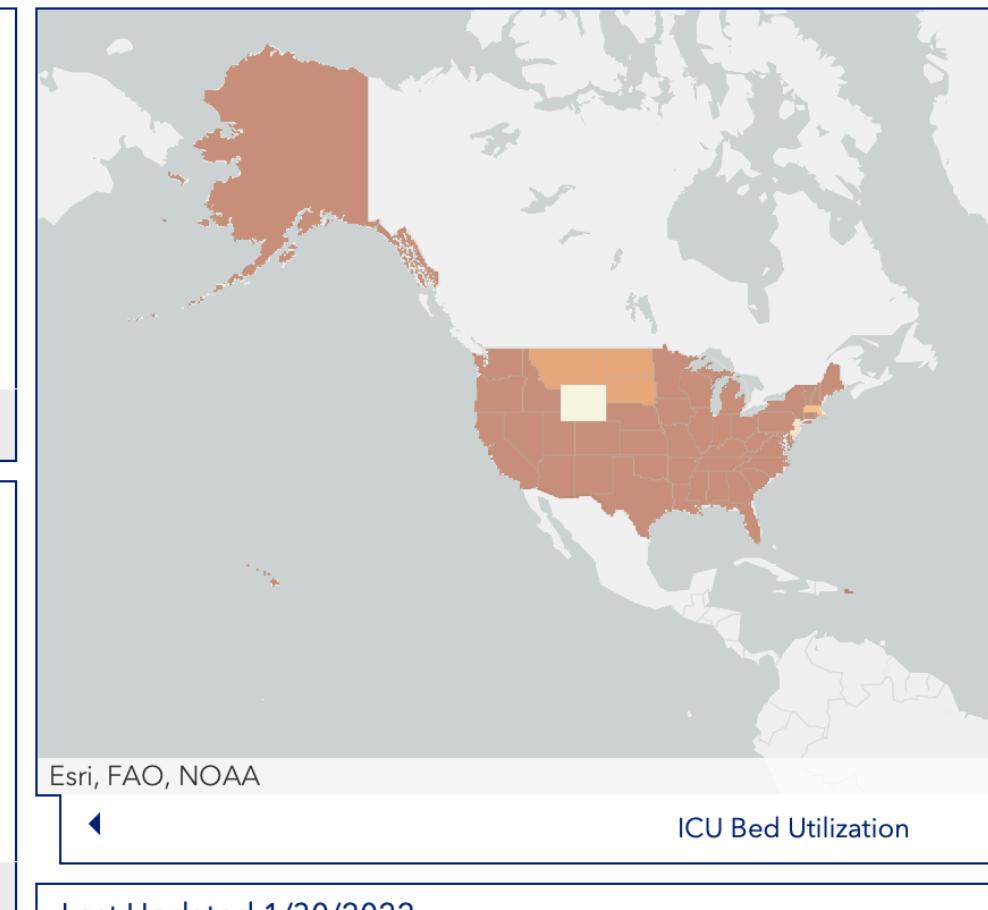
of ICU Beds in Use

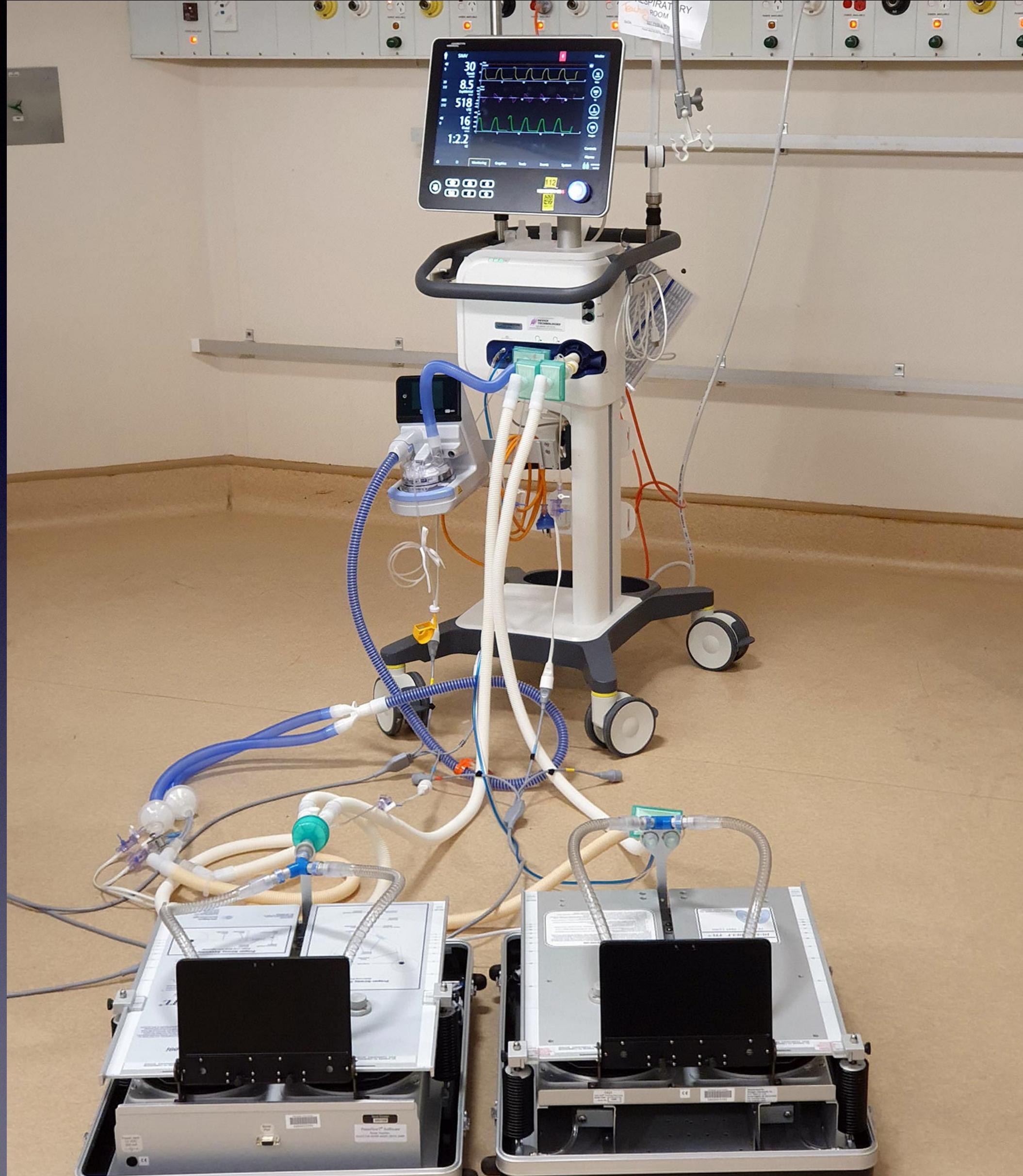
6,163 Hospitals Reporting



of ICU Beds in Use for COVID-19

6,033 Hospitals Reporting







Crisis Standards of Care

- [https://nbclim-f.akamaihd.net/i/Prod/NBCU_LM_VMS/295/247/
DIT_NAT_TOS_NEWS_CRISIS_STANDARDS_OF_CARE_EXPLAINER
_2021-01-05_FH_.mp4.csmil/master.m3u8](https://nbclim-f.akamaihd.net/i/Prod/NBCU_LM_VMS/295/247/DIT_NAT_TOS_NEWS_CRISIS_STANDARDS_OF_CARE_EXPLAINER_2021-01-05_FH_.mp4.csmil/master.m3u8)

Disproportionate Impacts of Covid-19



Total deaths and cases by age group

<https://covid.cdc.gov/covid-data-tracker/#demographics>

Age Group	Percent of US population	Percent of cases	Percentage of deaths	Count of deaths
0-4 Years	6	3	<0.1	368
5-11 Years	8.7	6.5	<0.1	235
12-15 Years	5.1	4.7	<0.1	274
16-17 Years	2.5	2.8	<0.1	274
18-29 Years	16.4	21.7	0.8	5,677
30-39 Years	13.5	16.9	1.8	13,182
40-49 Years	12.3	14.4	4	29,766
50-64 Years	19.2	18.5	17.6	131,158
65-74 Years	9.6	6.7	22.1	164,615
75-84 Years	4.9	3.3	26	193,171
85+ Years	2	1.7	27.5	204,845



Harming children to save society

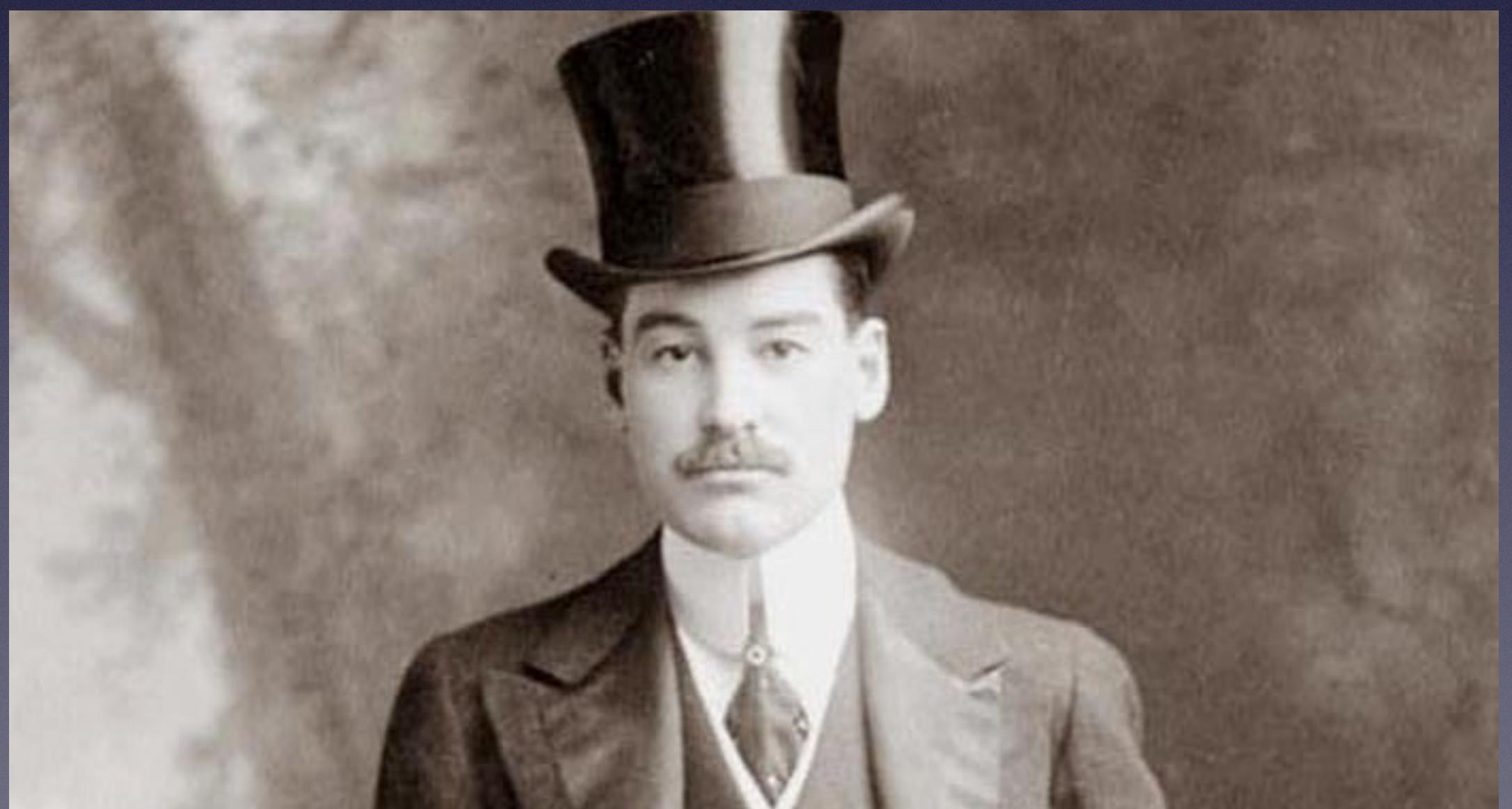
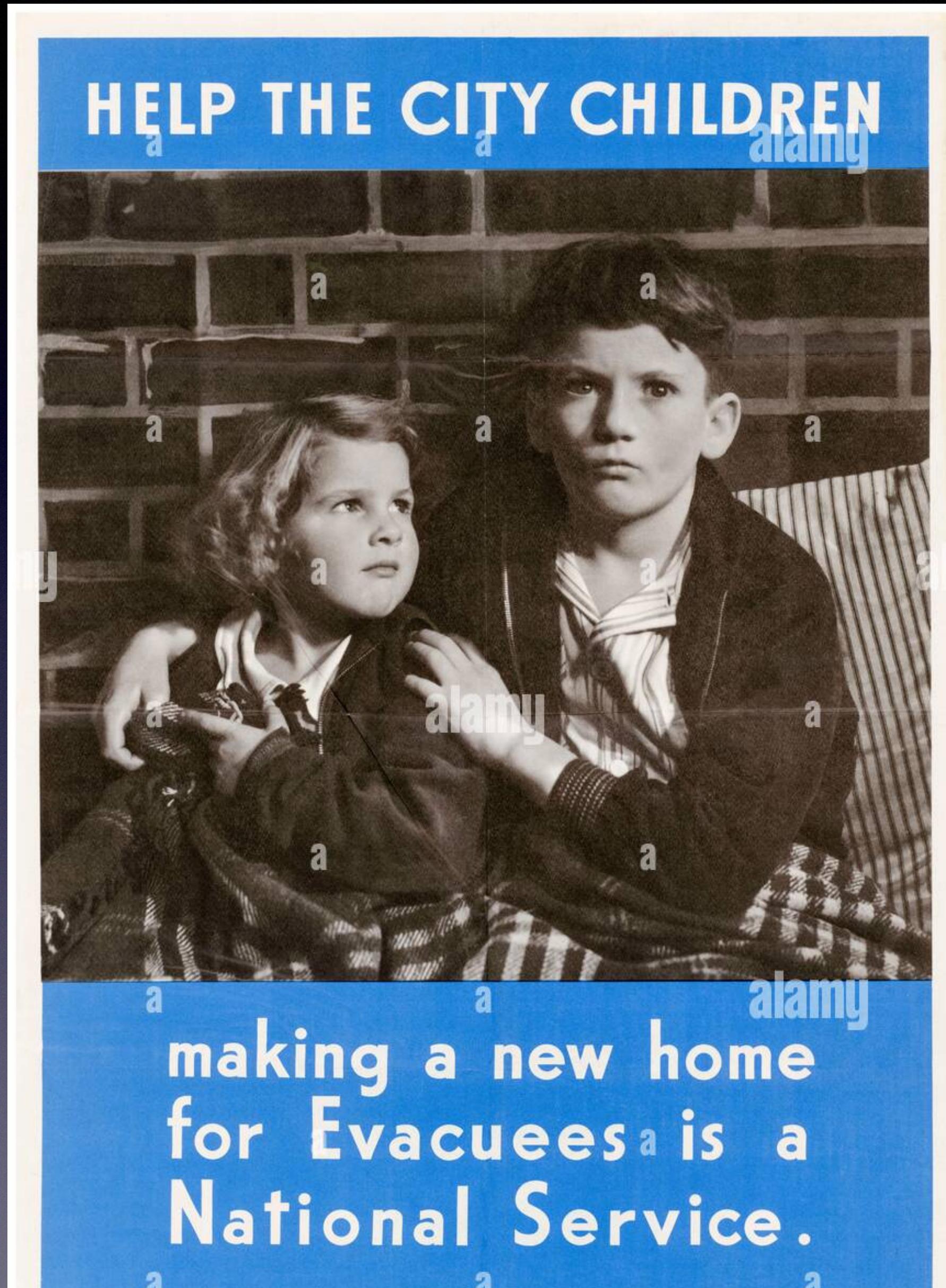
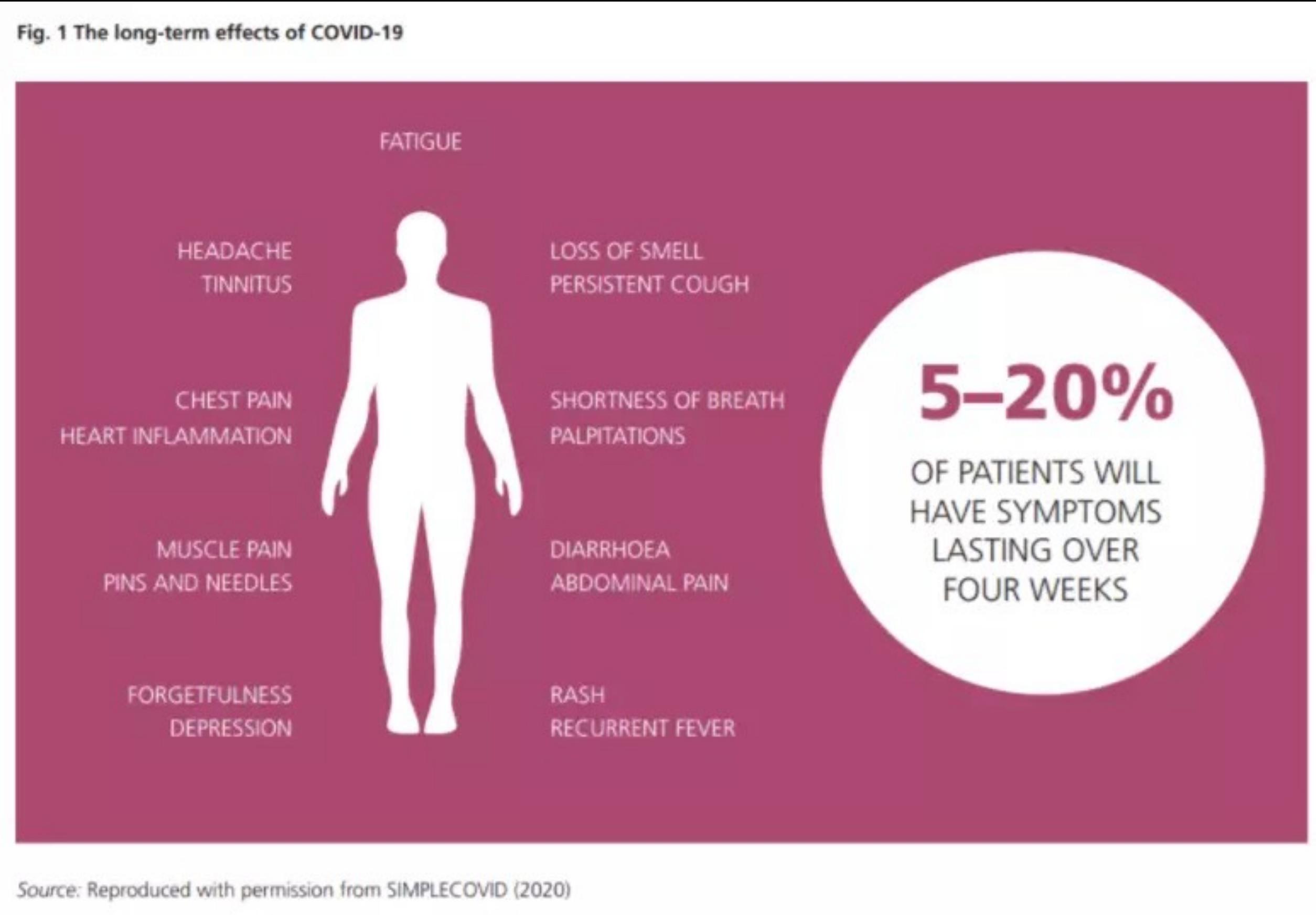


Fig. 1 The long-term effects of COVID-19



Long Covid