

Swiss Policy Research

Das Forschungsprojekt

Studies on Covid-19 lethality

Published: May 12, 2020; **Last updated:** May 20, 2020

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1) Covid-19 infection fatality rates (IFR) based on antibody studies

Population-based antibody seroprevalence studies.

Country	Published	Population	IFR (%)	Source
Germany	May 4	Heinsberg Cluster	<0.36 ¹	Study
Iran	May 1	Guilan province	<0.12	Study
USA	April 30	Santa Clara County	0.17	Study
Denmark	April 28	Blood donors (<70y)	0.08	Study
USA	April 24	Miami-Dade County	0.18 ²	Report
USA	April 21	Los Angeles County	<0.20	Study

1) The adjusted IFR is 0.278% (see page 9 of study); 2) Based on 300 deaths.

2) Covid-19 infection fatality rates based on controlled PCR studies

Controlled PCR studies in population subgroups.

Country	Date	Population	IFR (%)	Source
USA	May 10	MLB employees	0.00	Report
France	May 10	Aircraft carrier	0.00	Report
USA	May 10	Aircraft carrier	0.09	Report
USA	May 1	Tennessee prison	0.00	Report
Italy ²	April 28	Health workers	0.30	Study
USA	April 17	Boston homeless	0.00	Report

USA	April 17	Boston blood donors	0.00	Report
Ship	April 17	Diamond Princess	0.13 ¹	Study
Greece	April 16	Repatriations	0.00	Study
USA	April 13	NYC pregnant women	0.00	Study

1) Age-adjusted IFR based on US population.

Classe d'età (anni)	Casi		Deceduti		Letalità (%)
	N	%	N	%	
18-29	2.107	10.1	0	0,0	0%
30-39	3.584	17,2	1	1,4	0%
40-49	5.857	28,2	4	5,6	0.10%
50-59	6.935	33,3	17	23,6	0.20%
60-69	2.209	10,6	37	51,4	1,70%
70-79	105	0,5	13	18,1	12,40%
Totale	20.797		72		0,30%

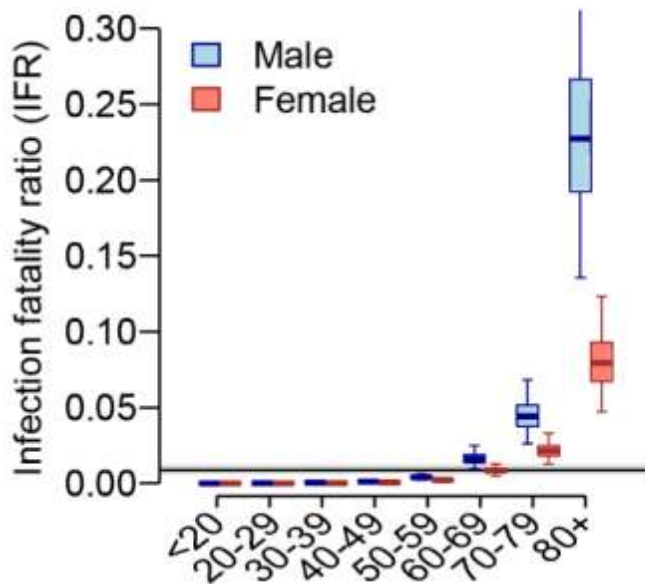
2) Deaths in Italian health care workers by age group (ISS, April 28, 2020)

3) Covid-19 infection fatality rates based on models

Covid-19 IFR based on epidemiological models or predictions. These values are often higher than the actual values based on serological antibody studies (see above).

Country	Published	Population	IFR (%)	Source
France	May 13	France	0.70	Study
Switzerland	May 11	Switzerland	0.40	Study
UK	May 7	UK	0.08 ¹	Study
France	May 7	France	0.80 ²	Study
Global	May 5	Global	0.17	Study
India	May 3	India	0.41	Study
Italy USA	April 20	Lombardia New York City	>0.84 >0.50	Study
China	March 30	Mainland China	0.66	Study
China	March 13	Wuhan city	0.12	Study
China	March 9	Mainland China	0.50	Study

1) Based on 29% prevalence and 50,000 deaths; 2) The IFR is 0.50 excluding nursing homes.



French model: IFR (x100) per age group (Study)

4) Additional antibody and PCR studies

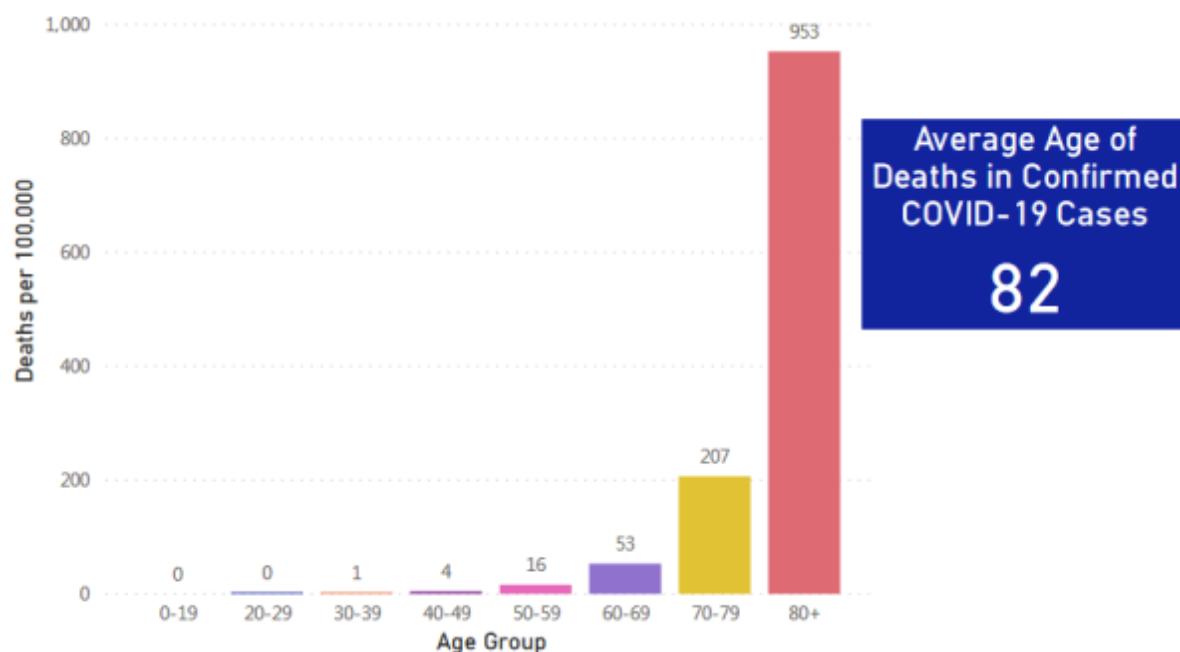
These studies typically determine the actual prevalence of recent or current Covid-19 infections in a population. In most cases, they find that Covid-19 is much more widespread than previously assumed, with most people showing no or only mild symptoms.

Country	Published	Population	Prev.	Factor	Source
USA	May 15	Boston	12.5%	8x	Report
Czech Rep.	May 15	South Bohemia	5%	10x	Report
Spain	May 13	Spain Madrid	5% 11.3%	10x	Study
UK	May 8	UK	29%	200x	Study
Switzerland	May 6	Geneva	9.7%	10x	Study
Global	May 5	< 65 years old			Study
Japan	May 5	Kobe City	2.7%	396x	Study
USA	May 2	New York State New York City	12.3% 19.9%	8x 10x	Report
Spain	May 2	Health workers	11.2%		Study
Netherlands	April 29	Blood donors	2.7%		Study
France	April 23	Northern France	3%		Study
USA	April 19	Chelsea MA	32%	16x	Report
Iceland	April 14	Iceland (PCR)	0.8%		Study

5) Median age of Covid-19 deaths per country

Half of all deaths were below, half were above the median age.

Country	Median age	Source
Austria	80+ years	EMS
England	80+ years	NHS
France	84 years	SPF
Germany	82 years	RKI
Italy	81 years	ISS
Spain	~82 years	MDS
Sweden	86 years	FOHM
Switzerland	84 years	BAG
USA	~80 years	CDC



Example: Death rate by age group in Massachusetts (Source)

7) Hospitalization rate

Initial estimates based on Chinese data assumed a very high 20% hospitalization rate, which led to the strategy of 'flattening the curve' to avoid overburdening hospitals. However, population-based antibody studies (see above) have since shown that actual hospitalization

rates are close to 1%, which is within the range of hospitalization rates for influenza (1 to 2%).

The US CDC found that Covid-19 hospitalization rates for people aged 65 and over are “within ranges of influenza hospitalization rates”, with rates slightly higher for people aged 18 to 64 and “much lower” (compared to influenza) for people under 18.

In local hotspots like New York City, the overall hospitalization rate based on antibody studies is about 2.5% (19.9% or 1.7 million people with antibodies and 43,000 hospitalizations by May 2), which is somewhat above a severe wave of influenza.

The much lower than expected hospitalization rate may explain why most Covid-19 ‘field hospitals’ even in hard-hit countries like the US, the UK and China remained largely empty.

8) Percentage of Covid-19 deaths in care homes per country

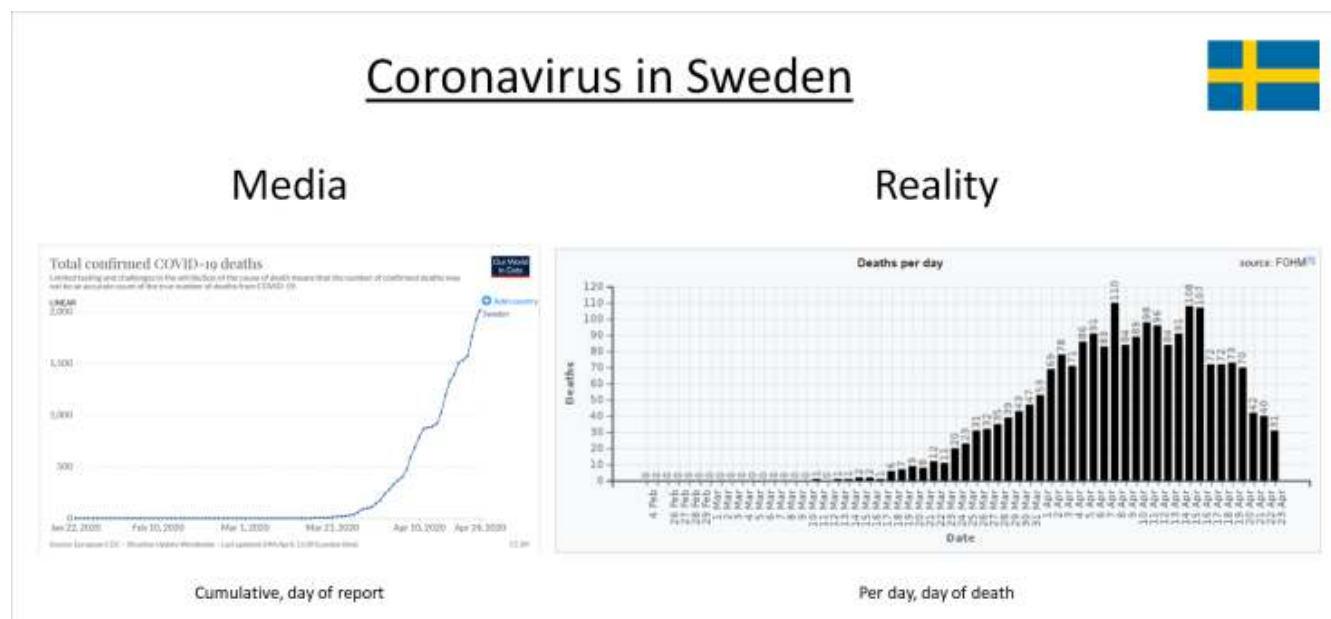
In many countries, deaths in care homes account for 30 to 60% of all additional deaths.

Country	Date	Approach to measuring deaths	Total number deaths linked to COVID-19	Number of deaths of care home residents linked to COVID-19	Number of deaths in care homes	Number of care home resident deaths as % of all COVID-19 deaths	Number of deaths in care homes as % of all COVID-19 deaths
Australia	03/05/2020	Confirmed	95	24		25%	
Belgium	03/05/2020	Confirmed + Probable	7,844		4,164		53%
Canada	02/05/2020	Confirmed + Probable	3,566	2,227		62%	
Denmark	24/04/2020	Confirmed	394	133		33%	
France	03/05/2020	Confirmed + Probable	24,760	12,511	9,273	51%	37%
Germany ⁵⁵	03/05/2020	Confirmed	6,649	2,401		36%	
Hong Kong	03/05/2020	Confirmed	4	0	0	0%	0%
Hungary	18/04/2020	Confirmed	172	33		19%	
Ireland	30/04/2020	Confirmed + Probable	1,232		735	60%	
Israel	29/04/2020	Confirmed	202	65		32%	
Norway	02/05/2020	Confirmed	211		127		60%
Portugal	23/04/2020		820	327		40%	
Singapore	03/05/2020	Confirmed	18	2		11%	
Sweden (Stockholm region)	30/04/2020	Confirmed	1,406	630		45%	

Source: Mortality associated with COVID-19 outbreaks in care homes (LTC Covid, May 3, 2020)

9) Development of the epidemic

Even in countries *without* a lockdown, the epidemic reached its peak within a few weeks of the outbreak. However, many media showed *cumulative* deaths per day of report (left) instead of *daily* deaths per day of death (right), falsely implying an ever escalating situation.



Cumulative deaths per day of report vs. daily deaths per day of death. (OWD/FOHM; April 24)

See also

- Additional Covid-19 Antibody Serological Studies (Dr. Henrik Jarlov)
- Global Covid-19 Case Fatality Rates (Oxford Center for Evidence-Based Medicine)
- Rate of positive Covid-19 tests per country over time (SPR)

Main article: Facts on Covid-19

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