# Morning Brief : Scientific Review

## 15 June 2020

The purpose of the Morning Brief is to **summarize** and present key information, research articles and other relevant publications pertaining to critical care and COVID-19. We aim to prioritise information, articles and publications released in the preceding 24-48hours.

Stellenbosch University Research Response Team

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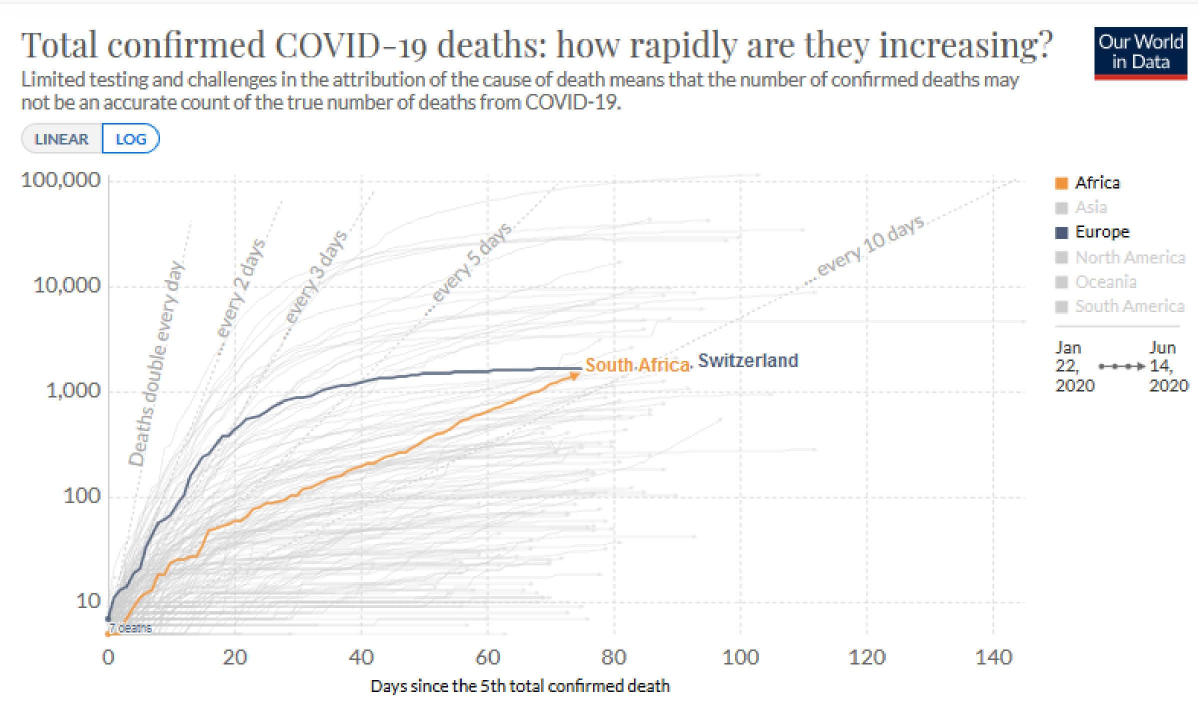
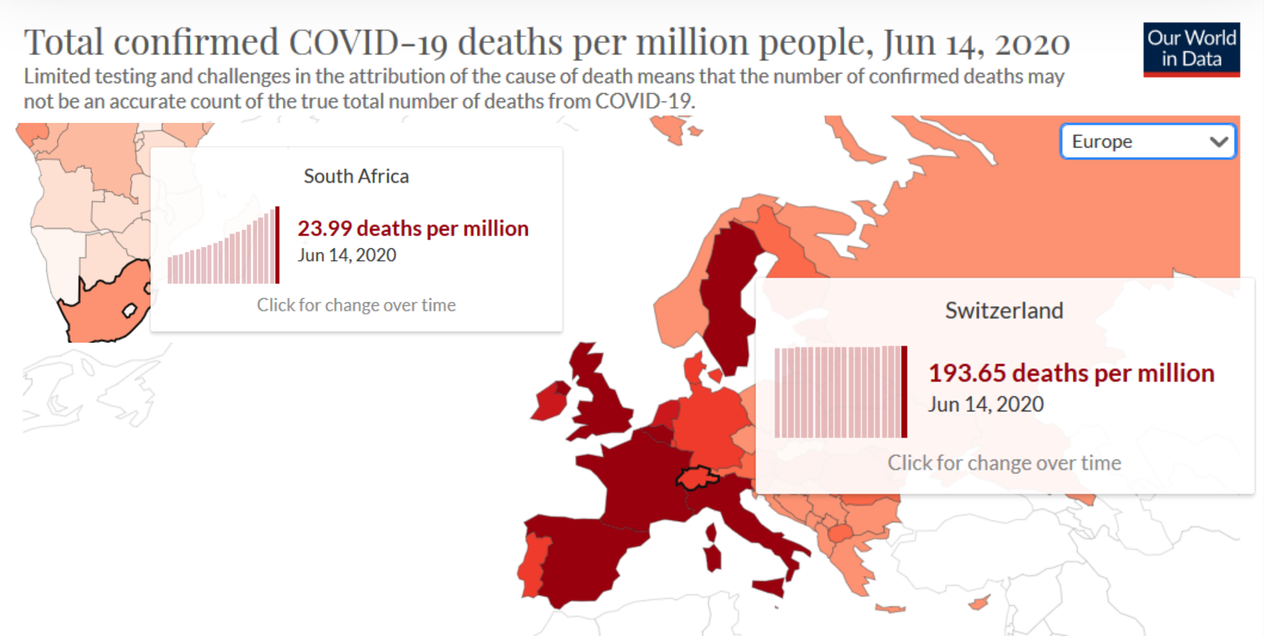
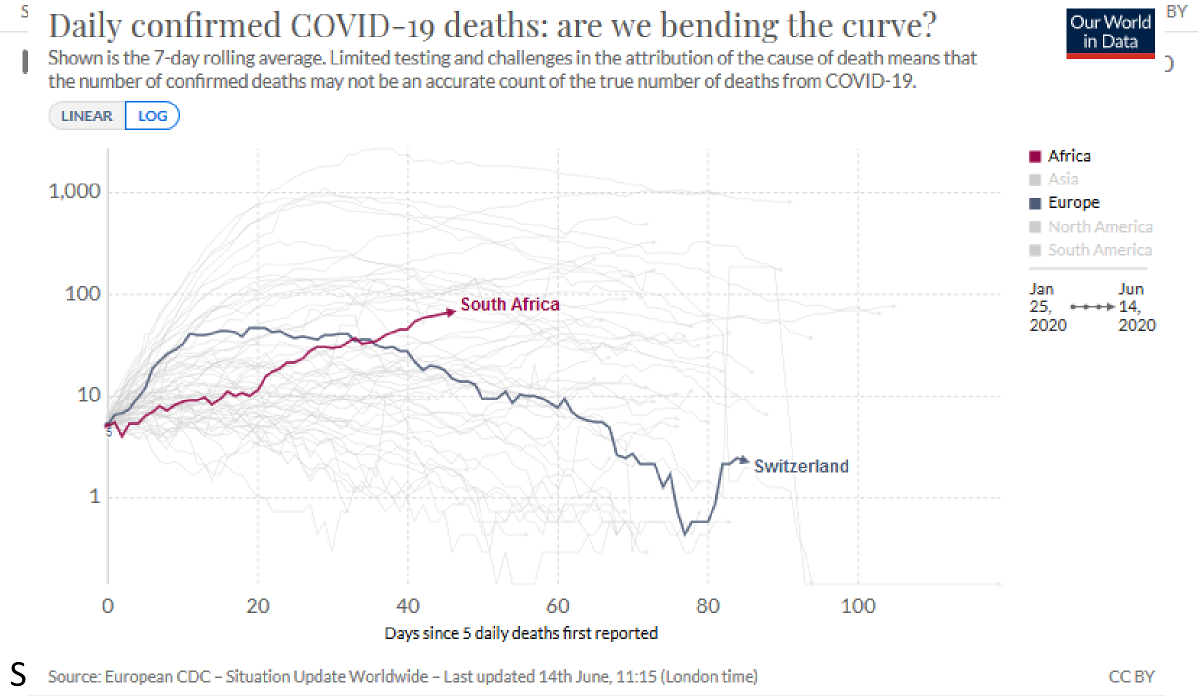
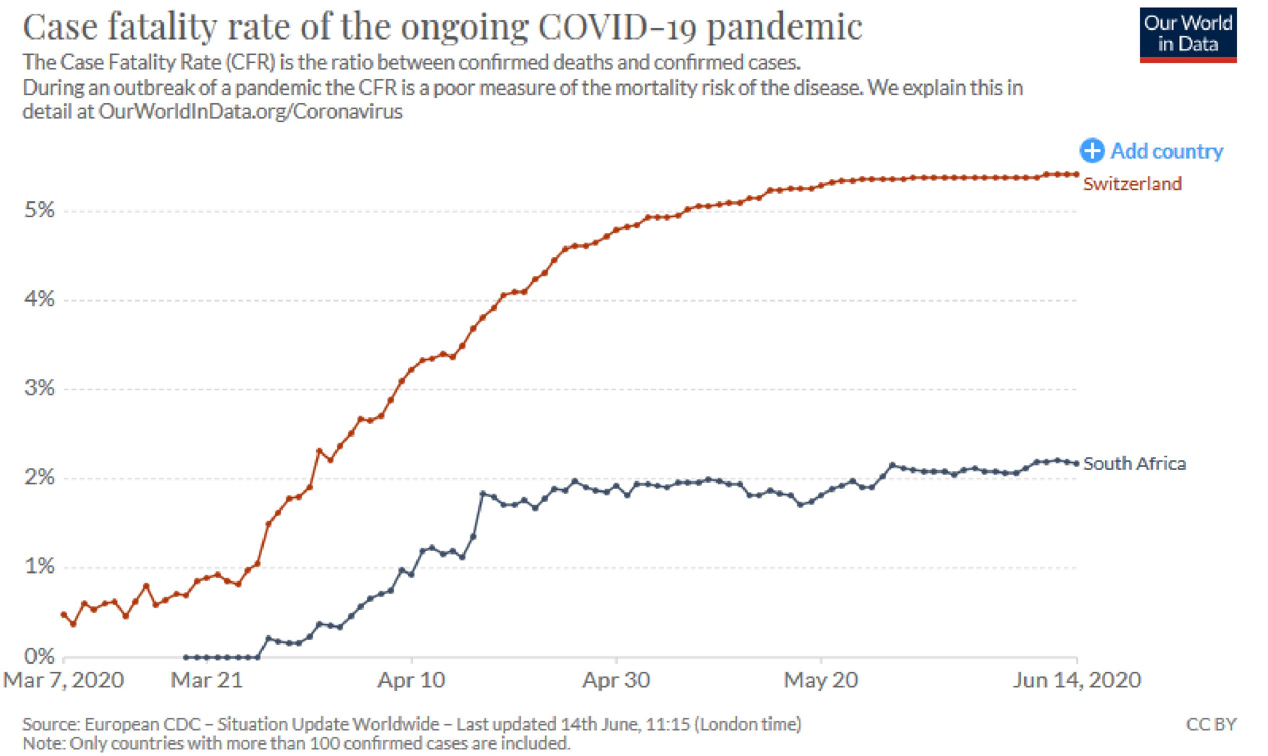
# Content of the brief

- South African and Swiss Statistics
- Topic: Brief reports


Total confirmed COVID-19 deaths: how rapidly are they increasing?
Our World in Data
Limited testing and challenges in the attribution of the cause of death means that the number of confirmed deaths may not be an accurate count of the true number of deaths from COVID-19.
LINEAR
LOG
100,000
10,000
1,000
100
10
Deaths double every day
every 2 days
every 3 days
every 5 days
every 10 days
South Africa
Switzerland
0
20
40
60
80
100
120
140
Days since the 5th total confirmed death
Africa
Asia
Europe
North America
Oceania
South America
Jan 22, 2020
Jun 14, 2020

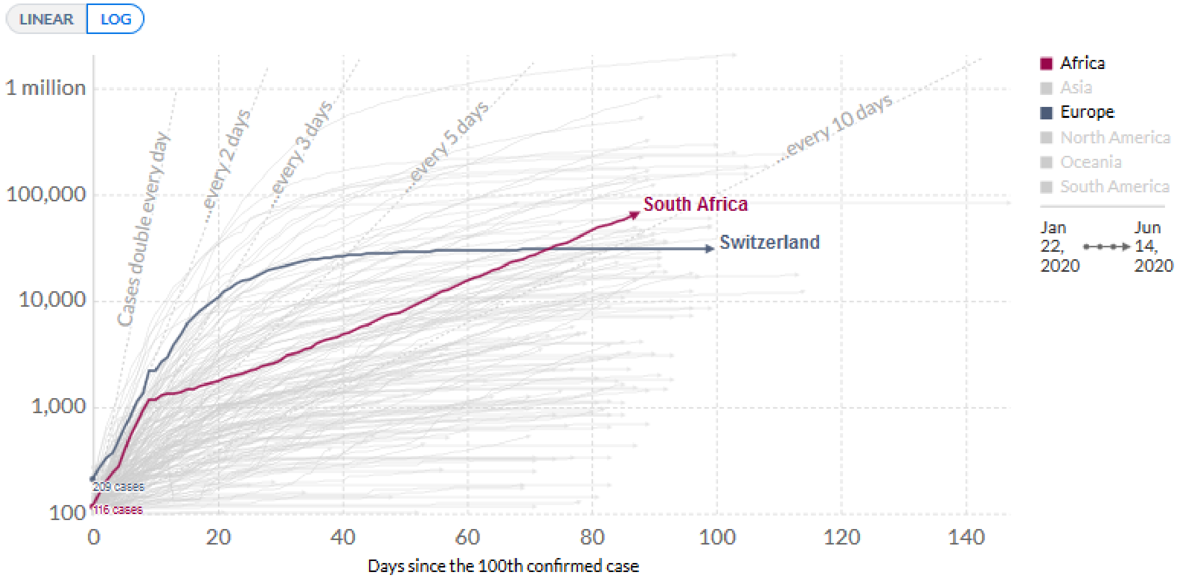

Total confirmed COVID-19 deaths per million people, Jun 14, 2020
Our World in Data
Limited testing and challenges in the attribution of the cause of death means that the number of confirmed deaths may not be an accurate count of the true total number of deaths from COVID-19.
Europe
South Africa
23.99 deaths per million
Jun 14, 2020
Click for change over time
Switzerland
193.65 deaths per million
Jun 14, 2020
Click for change over time


Daily confirmed COVID-19 deaths: are we bending the curve?
Our World in Data
Shown is the 7-day rolling average. Limited testing and challenges in the attribution of the cause of death means that the number of confirmed deaths may not be an accurate count of the true number of deaths from COVID-19.
LINEAR
LOG
1,000
100
10
1
South Africa
Switzerland
0
20
40
60
80
100
Days since 5 daily deaths first reported
Africa
Asia
Europe
North America
South America
Jan 25, 2020
Jun 14, 2020
Source: European CDC – Situation Update Worldwide – Last updated 14th June, 11:15 (London time)
CC BY


Case fatality rate of the ongoing COVID-19 pandemic
Our World in Data
The Case Fatality Rate (CFR) is the ratio between confirmed deaths and confirmed cases.
During an outbreak of a pandemic the CFR is a poor measure of the mortality risk of the disease. We explain this in detail at OurWorldInData.org/Coronavirus
Add country
Switzerland
South Africa
5%
4%
3%
2%
1%
0%
Mar 7, 2020
Mar 21
Apr 10
Apr 30
May 20
Jun 14, 2020
Source: European CDC – Situation Update Worldwide – Last updated 14th June, 11:15 (London time)
Note: Only countries with more than 100 confirmed cases are included.
CC BY

## Total confirmed COVID-19 cases: how rapidly are they increasing?

The number of confirmed COVID-19 cases is lower than the number of total cases. The main reason for this is limited testing.




## Daily confirmed COVID-19 cases

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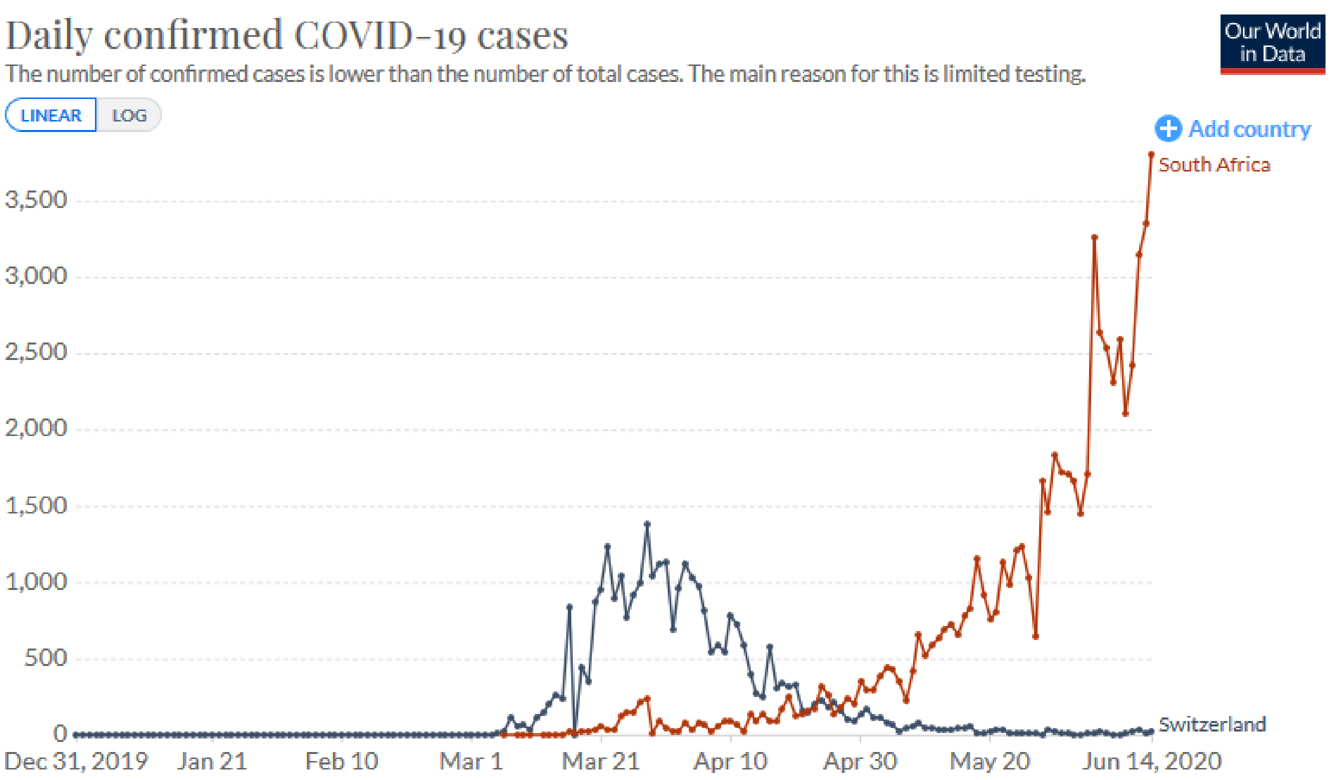
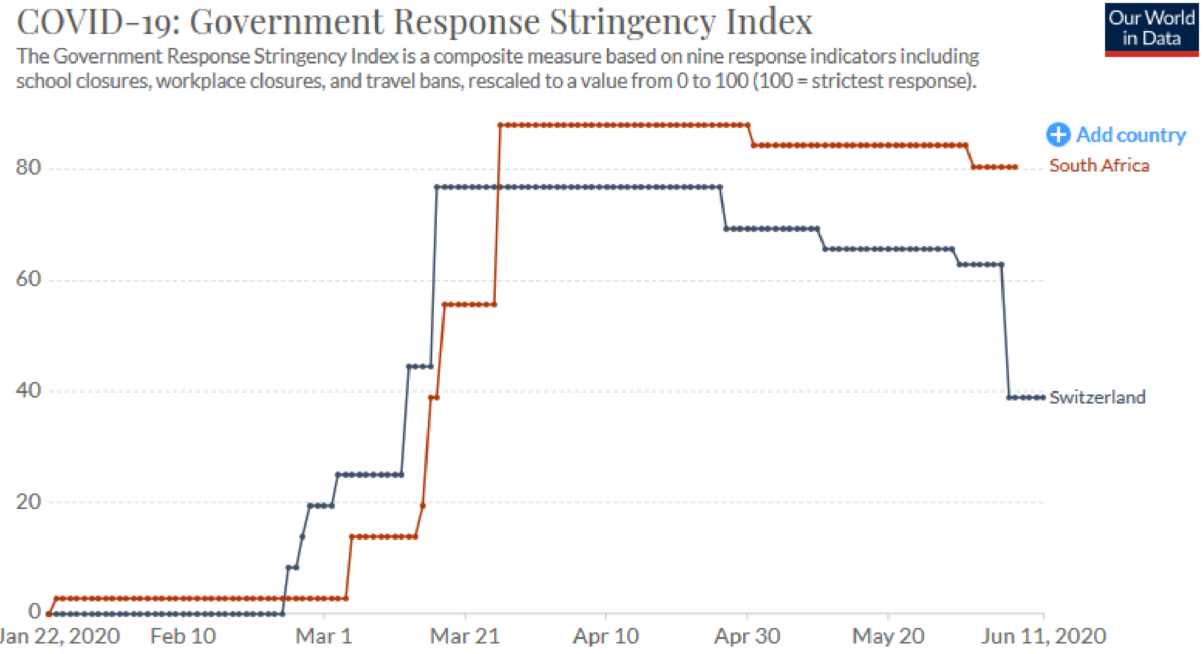



Source: European CDC – Situation Update Worldwide – Last updated 14th June, 11:15 (London time)



## COVID-19: Government Response Stringency Index

The Government Response Stringency Index is a composite measure based on nine response indicators including school closures, workplace closures, and travel bans, rescaled to a value from 0 to 100 (100 = strictest response).




Source: Hale, Webster, Petherick, Phillips, and Kira (2020). Oxford COVID-19 Government Response Tracker – Last Updated 12th June.
Note: This index simply records the number and strictness of government policies, and should not be interpreted as 'scoring' the appropriateness or effectiveness of a country's response.

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# Articles of Interest

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Table 1 Relative risk of seropositivity by age and sex

| | SARS-CoV-2 serology test result | | | Relative risk (95% CI) | p value |
|---|---|---|---|---|---|
| | Positive | Negative | Indeterminate | | |
| **Age group, years** | | | | | |
| 5–9 (n=123) | 1 (0·8%) | 114 (92·7%) | 8 (6·5%) | 0·32 (0·11–0·63) | 0·0008 |
| 10–19 (n=332) | 32 (9·6%) | 295 (88·9%) | 5 (1·5%) | 0·86 (0·57–1·22) | 0·37 |
| 20–49 (n=1096) | 108 (9·9%) | 970 (88·5%) | 18 (1·6%) | 1 (ref) | .. |
| 50–64 (n=846) | 63 (7·4%) | 772 (91·3%) | 11 (1·3%) | 0·79 (0·57–1·04) | 0·090 |
| ≥65 (n=369) | 15 (4·1%) | 348 (94·3%) | 6 (1·6%) | 0·50 (0·28–0·78) | 0·0020 |
| **Sex** | | | | | |
| Female (n=1454) | 101 (6·9%) | 1333 (91·7%) | 20 (1·4%) | 1 (ref) | .. |
| Male (n=1312) | 118 (9·0%) | 1166 (88·9%) | 28 (2·1%) | 1·26 (1·00–1·58) | 0·054 |

Data are n (%) unless otherwise stated. Age 20–49 years and female are the reference groups, with which other groups are compared. p values are Bayesian p values following Gelman and colleagues.[14] SARS-CoV-2=severe acute respiratory syndrome coronavirus 2.

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# Seroprevalence of anti-SARS-CoV-2 IgG antibodies in Geneva, Switzerland (SEROCoV-POP): a population-based study

Silvia Stringhini, PhD • Ania Wisniak, MS † • Giovanni Piumatti, PhD † • Andrew S Azman, PhD † • Stephen A Lauer, PhD • Hélène Baysson, PhD • et al. Show all authors • Show footnotes

Published: June 11, 2020 • DOI: https://doi.org/10.1016/S0140-6736(20)31304-0 • Check for updates

Population based study, Geneva Switzerland
Sero-prevalence weekly, for 5 weeks
Randomly selected participants from a previous population based survey
1300 invited to participate per week
Commercial ELISA detecting IgG, sensitivity of 93% and a specificity of 100%
Statistical methods adjusted for test performance
2766 participants included, 52% women
Compared with the population of Geneva

- over-representation of 50–64-year-olds
- under-representation of people older than 80 years
- more individuals with tertiary education (795 [59·6%] of 1334 *vs* 39%)
- fewer non-Swiss nationals (314 [23·5%] of 1334 *vs* 41%)

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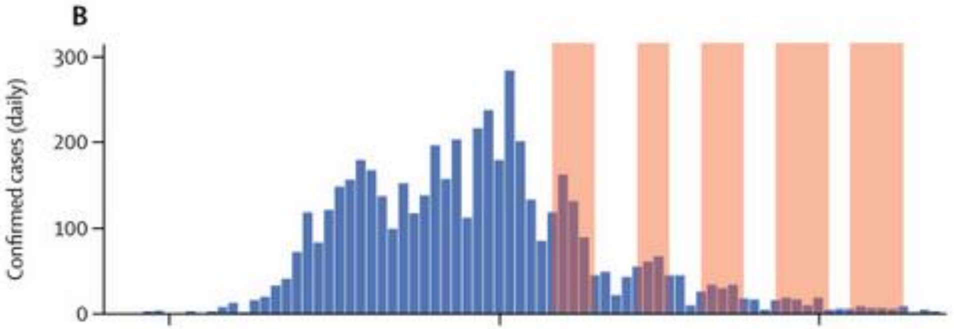
**Table 2 Overview of seroprevalence estimates by week**

| | SARS-CoV-2 serology test result | | | Estimated seroprevalence in the general population of Geneva (95% CI) | p value |
|---|---|---|---|---|---|
| | Positive | Negative | Indeterminate | | |
| Week 1 (n=341) | 12 (3·5%) | 322 (94·4%) | 7 (2·1%) | 4·8% (2·4–8·0) | 0·043 |
| Week 2 (n=469) | 28 (6·0%) | 435 (92·8%) | 6 (1·3%) | 8·5% (5·9–11·4) | .. |
| Week 3 (n=577) | 61 (10·6%) | 500 (86·7%) | 16 (2·8%) | 10·9% (7·9–14·4) | 0·23 |
| Week 4 (n=604) | 36 (6·0%) | 557 (92·2%) | 11 (1·8%) | 6·6% (4·3–9·4) | 0·29 |
| Week 5 (n=775) | 82 (10·6%) | 685 (88·4%) | 8 (1·0%) | 10·8% (8·2–13·9) | 0·22 |

Data are n (%) unless otherwise stated. Week 2 is the reference week, with which all other weeks are compared. p values are Bayesian p values following Gelman and colleagues.[14] SARS-CoV-2=severe acute respiratory syndrome coronavirus 2.

Estimated that for every reported confirmed case there were 11.6 infections in the community
Lower infection rate below 10 y, above 65 y
immunological, social?




Limitations:
ELISA validated in adults only
Potential for selection bias

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Regional differences in mortality rate in Italy
Investigated whether there was epidemiological association with influenza vaccine uptake
Performed simple linear regression of the relationship between proportion of adults above 65 years vaccinated
Acknowledge substantial potential for confounding

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MEDICAL VIROLOGY

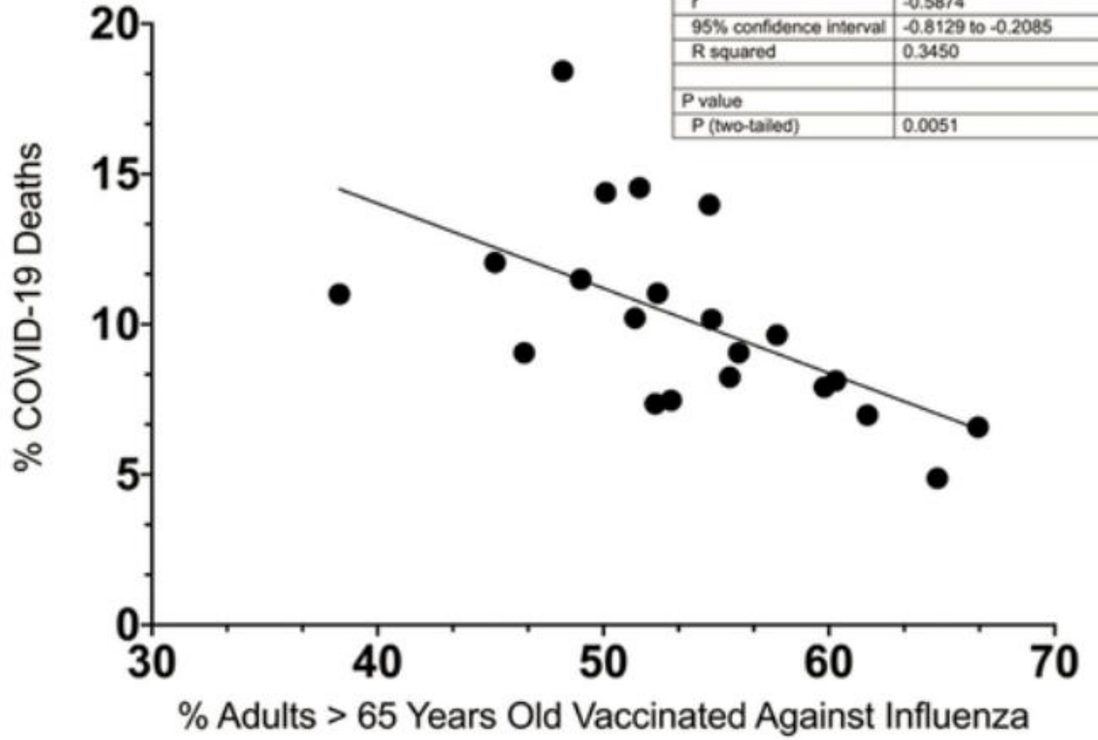
LETTER TO THE EDITOR | Free Access

## Epidemiological evidence for association between higher influenza vaccine uptake in the elderly and lower COVID-19 deaths in Italy

Daniela Marín-Hernández, Robert E. Schwartz, Douglas F. Nixon

First published:04 June 2020 | https://doi.org/10.1002/jmv.26120

| | Percentage >65 vaccinated vs. % COVID-19 deaths |
|---|---|
| Pearson r | |
| r | -0.5874 |
| 95% confidence interval | -0.8129 to -0.2085 |
| R squared | 0.3450 |
| | |
| P value | |
| P (two-tailed) | 0.0051 |



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New York
Orthopaedic referral hospital for emergencies during surge
Universal covid-19 testing from April
These results during 3 weeks following peak infections in NY
12/99 positive (7 asymptomatic)
Highlight the importance of decisions to operate on Covid-19 positive patients, even if asymptomatic
17% mortality and 29% ICU admission
They recommend delaying elective surgery in positive cases

> J Bone Joint Surg Am. 2020 Jun 8. doi: 10.2106/JBJS.20.01053. Online ahead of print.

# Universal Testing for COVID-19 in Essential Orthopaedic Surgery Reveals a High Percentage of Asymptomatic Infections

Jordan A Gruskay [1], Aleksey Dvorzhinskiy [1], Maxwell A Konnaris [1], Drake G LeBrun [1], Gregory C Ghahramani [1 2], Ajay Premkumar [1], Christopher J DeFrancesco [1], Christopher L Mendias [1 2], William M Ricci [1]

Affiliations + expand

PMID: 32516279 DOI: 10.2106/JBJS.20.01053

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Public Health. 2020 May 30
doi: 10.1016/j.puhe.2020.05.047 [Epub ahead of print]
PMCID: PMC7260492
PMID: 32516623

# Children's mortality from COVID-19 compared with all-deaths and other relevant causes of death: epidemiological information for decision-making by parents, teachers, clinicians and policymakers

Sunil Bhopal,[a,*] Jay Bagaria,[b] and Raj Bhopal[c]

▸ Author information ▸ Article notes ▸ Copyright and License information Disclaimer

**Table 1**

Age-specific data for seven countries showing population, estimated deaths from all and specific causes for three months, compared with COVID-19 cases and deaths from the beginning of the COVID-19 pandemic to 8–19 May 2020 (see note five for exact date for country, which varies by reporting method).

| Country | Age | Population | All-cause deaths | | Unintentional injury deaths | | LRTI deaths | | Influenza deaths | Confirmed COVID-19 cases | COVID-19 deaths | | COVID-19 deaths as % of all deaths |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | n | per 100,000 | n | per 100,000 | n | per 100,000 | n | n | n | per 100,000 | |
| USA | 0-4 y | 9,810,275 | 6503 | 32.83 | 522 | 2.63 | 159 | 0.80 | 46 | 4385 | 6 | 0.03 | 0.092% |
| | 5-14 y | 41,075,169 | 1361 | 3.31 | 194 | 0.47 | 35 | 0.09 | 43 | 17,523 | 7 | 0.02 | 0.514% |
| United Kingdom | 0-9 y | 8,052,552 | 1034 | 12.84 | 34 | 0.42 | 34 | 0.42 | 4 | 972 | 2 | 0.02 | 0.193% |
| | 10-19 y | 7,528,144 | 303 | 4.02 | 26 | 0.35 | 6 | 0.08 | 2 | 1245 | 9 | 0.12 | 2.975% |
| Italy | 0-9 y | 5,090,482 | 428 | 8.41 | 17 | 0.32 | 11 | 0.21 | 5 | 1774 | 4 | 0.08 | 0.935% |
| | 10-19 y | 5,768,874 | 211 | 3.65 | 20 | 0.34 | 3 | 0.05 | 3 | 3148 | 0 | 0.00 | 0.000% |
| Germany | 0-9 y | 7,588,635 | 759 | 10.00 | 36 | 0.47 | 14 | 0.18 | 1 | 3172 | 1 | 0.01 | 0.132% |
| | 10-19 y | 7,705,657 | 341 | 4.42 | 24 | 0.31 | 5 | 0.06 | 1 | 7350 | 2 | 0.03 | 0.587% |
| Spain | 0-9 y | 4,370,858 | 373 | 8.54 | 20 | 0.45 | 9 | 0.21 | 1 | 857 | 2 | 0.05 | 0.536% |
| | 10-19 y | 4,883,447 | 145 | 2.97 | 15 | 0.31 | 3 | 0.05 | 1 | 1591 | 5 | 0.10 | 3.448% |
| France | 0-9 y | 7,755,755 | 795 | 10.25 | 58 | 0.75 | 13 | 0.16 | NA | NA | 3 | 0.04 | 0.377% |
| | 10-19 y | 8,328,988 | 291 | 3.50 | 29 | 0.35 | 3 | 0.04 | NA | NA | 3 | 0.04 | 1.030% |
| Korea | 0-9 y | 4,148,654 | 414 | 9.99 | 39 | 0.93 | 10 | 0.24 | NA | 143 | 0 | 0.00 | 0.000% |
| | 10-19 y | 4,940,455 | 222 | 4.49 | 21 | 0.42 | 3 | 0.06 | NA | 614 | 0 | 0.00 | 0.000% |
| **TOTAL** | | **137,326,595** | **13,200** | **9.62** | **1056** | **0.77** | **308** | **0.22** | **107** | **42,846** | **44** | **0.03** | **0.333%** |

*This summary was prepared by Dr E Maasdorp as part of the daily brief to the TBH ICU team.*