Morning Brief : Scientific Review

12 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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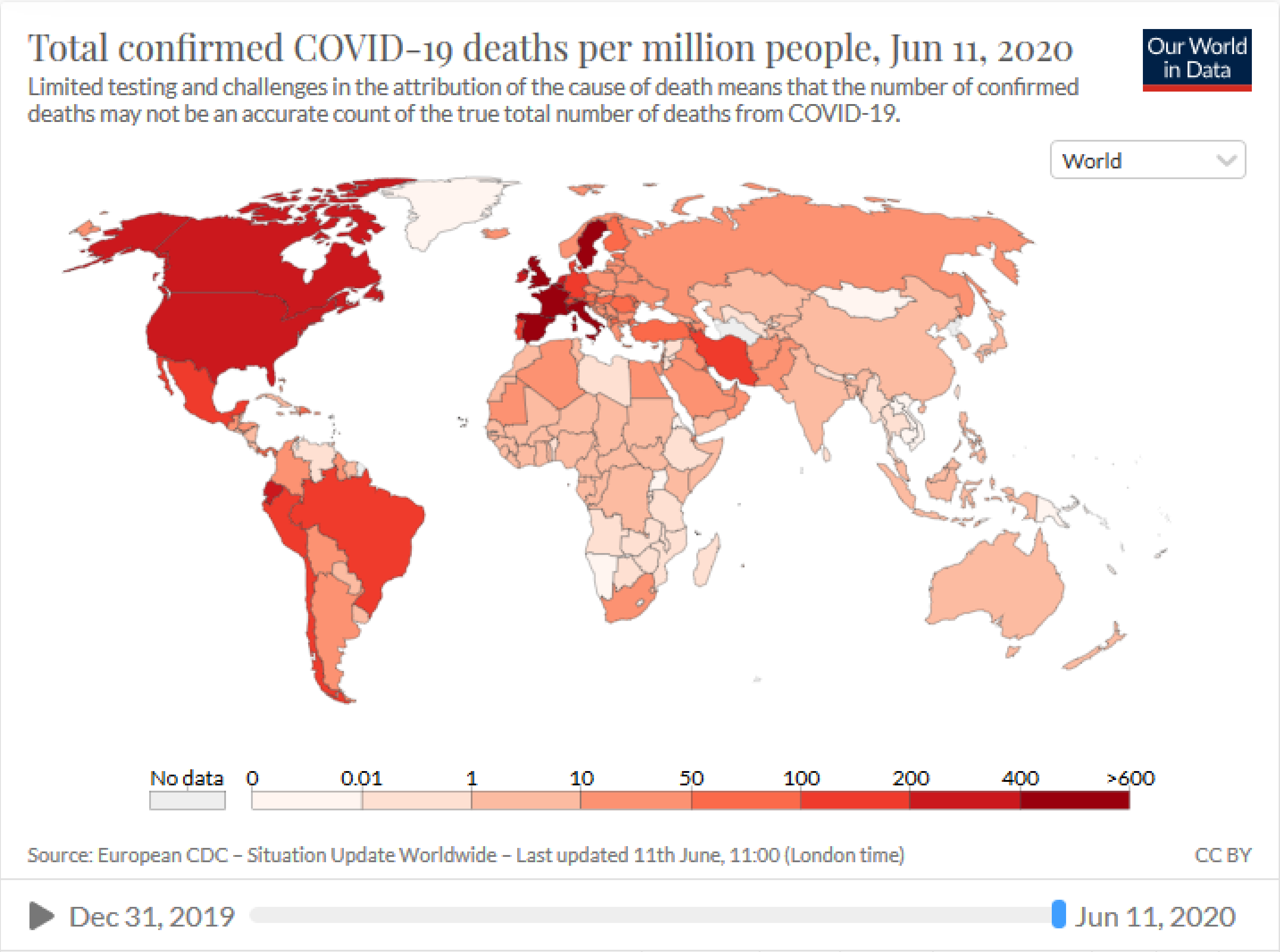
Content of the brief

- Global Statistics
- South African Statistics
- Topic: Brief reports on transmission

Global Statistics



Source: https://coronavirus.jhu.edu/map.html

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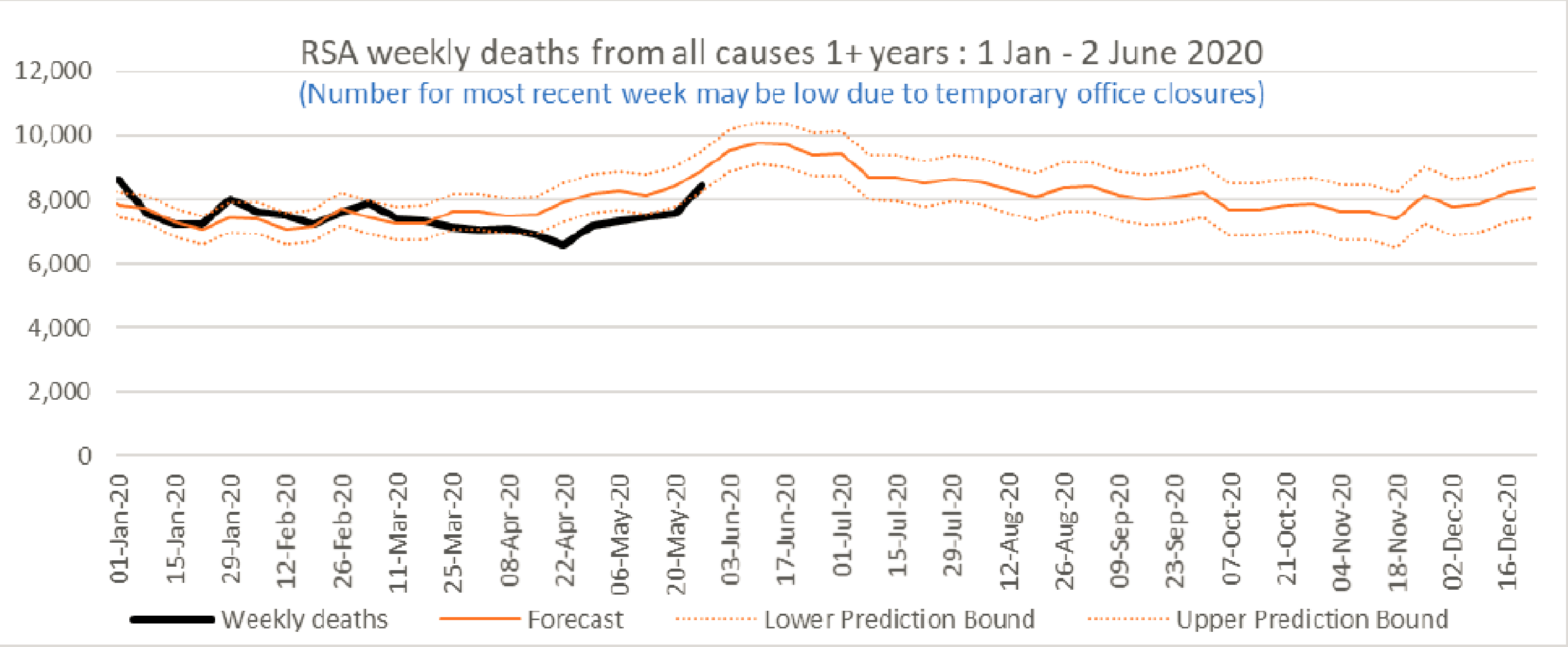
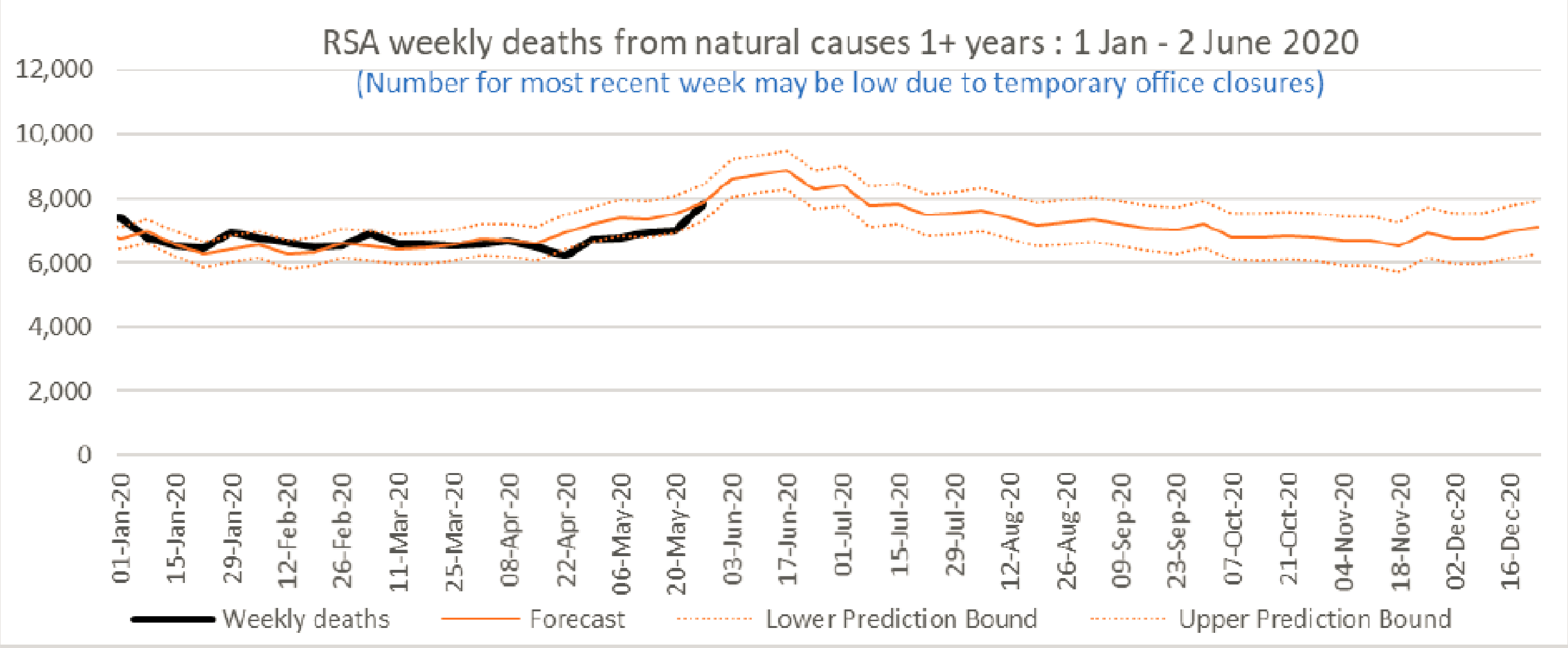
South African Statistics





Warning: The Department of Home Affairs is facing office closures, particularly in areas that are more affected by COVID-19. This means that the numbers of registered deaths for the most recent week, and possibly the week before that may be underestimates. This is particularly the case in this report for Cape Town and hence the Western Cape, possibly Buffalo City and hence Eastern Cape and, to a less marked extent, the country as a whole.

Source: https://samrc.ac.za

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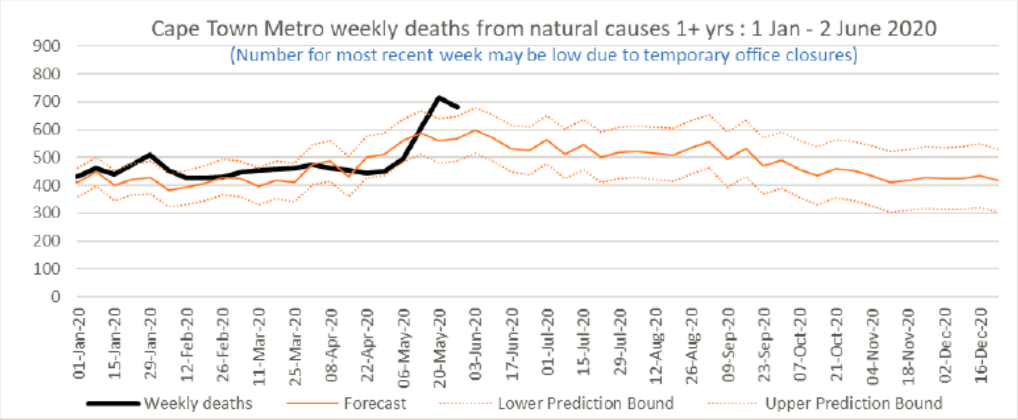

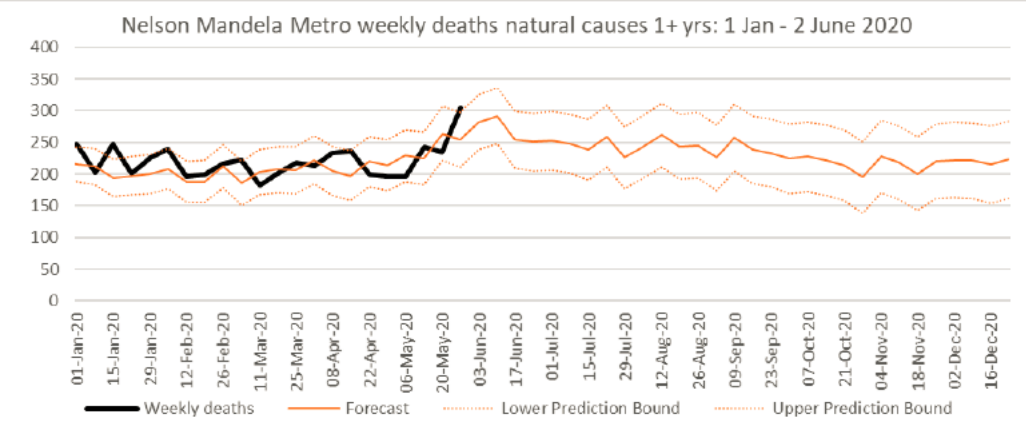

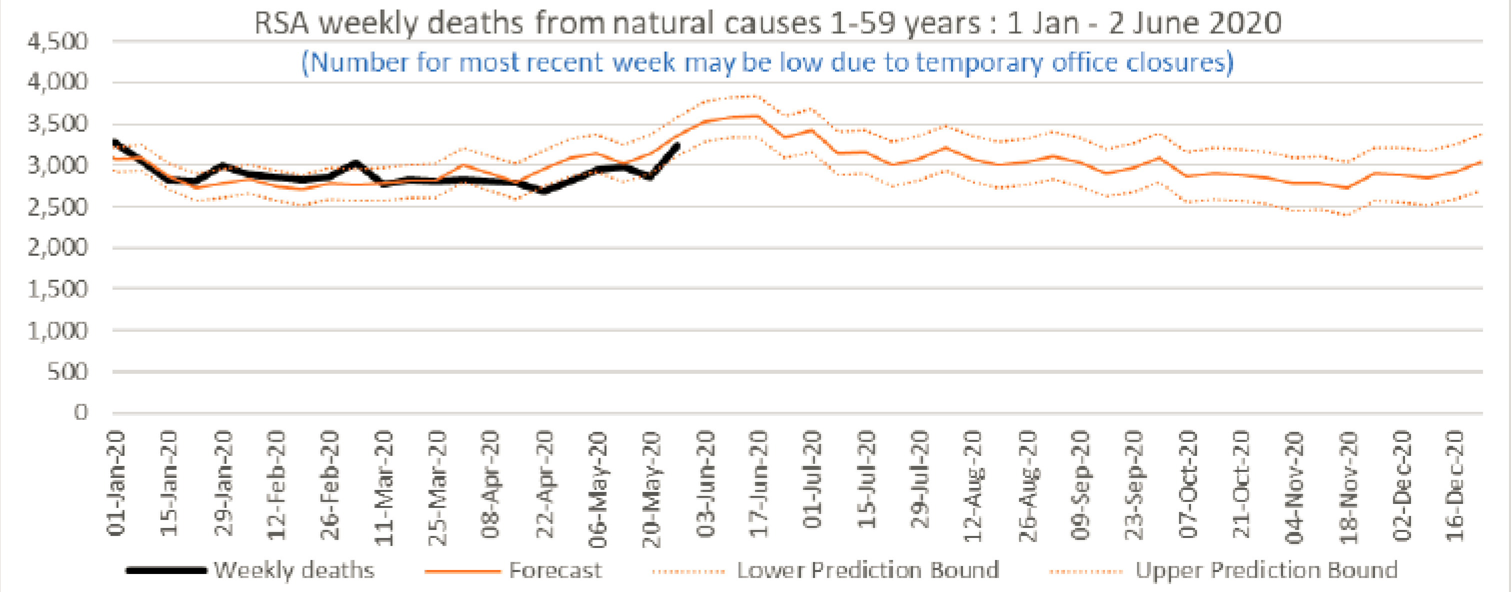

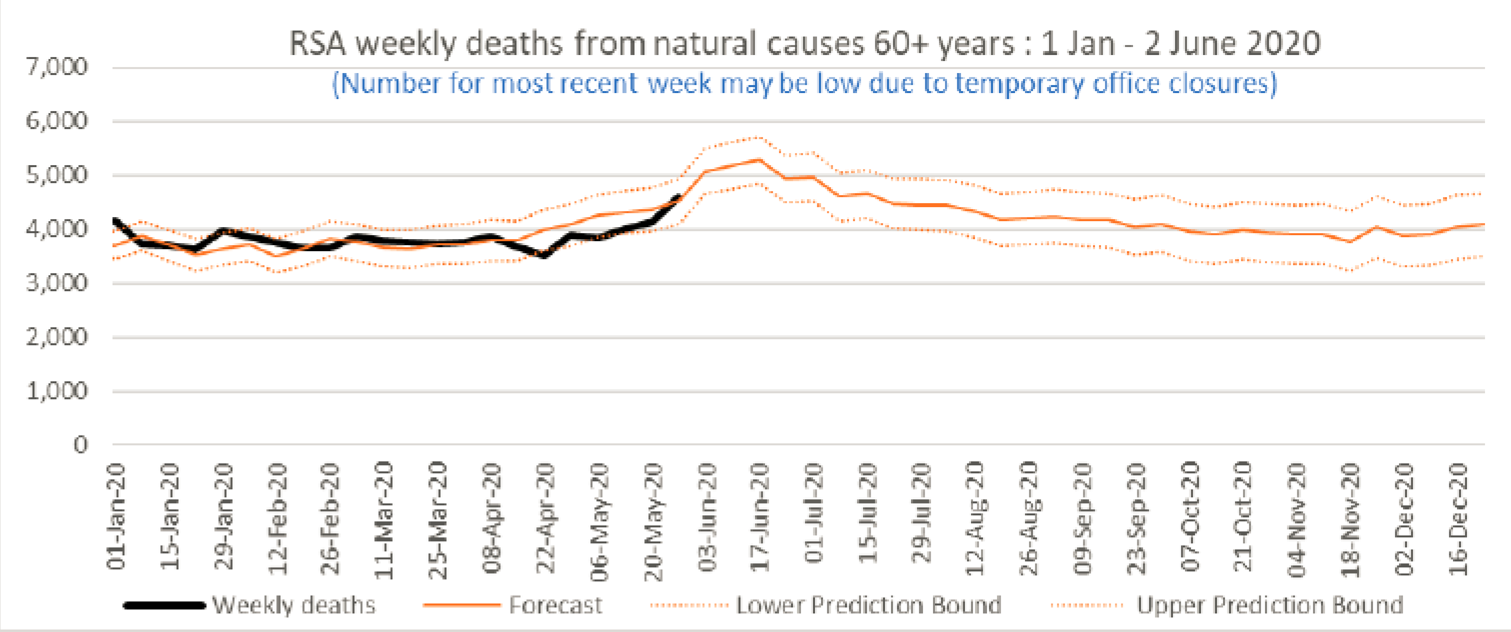

Numbers for the last week have been adjusted for delayed registrations

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Source: https://samrc.ac.za

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Articles of Interest

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Self-reporting provider registry to collect data on nosocomial exposure, procedural performance, use of PPE, and subsequent COVID-19-related outcomes after tracheal intubation – intubateCOVID registry, launched 23 March 2020

503 hospitals, 17 countries, majority US and UK
Collection ongoing, this analysis up to 2 June 2020
Primary endpoint: composite outcome of either new laboratory-confirmed COVID-19 or new COVID-19 symptoms requiring self-isolation or hospitalisation

1718 participants who performed at least 1 intubation
5148 intubations reported
Median intubations reported 2 (IQR 1- 42)
Half performed in critical care units
87.9% of intubations performed while wearing PPE – gown, gloves, eye protection and N95 or equivalent mask
I.e. 12% inadequate PPE
Median follow-up duration since first reported intubation was 32 days, at least 21 day follow-up available in 1192 participants

Anaesthesia
Peri-operative medicine, critical care and pain
Association of Anaesthetists

ORIGINAL ARTICLE | Free Access

Risks to healthcare workers following tracheal intubation of patients with COVID-19: a prospective international multicentre cohort study

K. El-Boghdadly, D.J.N. Wong, R. Owen, M.D. Neuman, S. Pocock, J.B. Carlisle, C. Johnstone, P. Andruszkiewicz, P.A. Baker, B.M. Biccard, G.L. Bryson, M.T.V. Chan, M.H. Cheng ... See all authors

First published:09 June 2020 | https://doi.org/10.1111/anae.15170

184 (10.7%) had primary endpoint
8.4% symptomatic self-isolation
3.1% lab-confirmed
0.1% hospital admission
Most frequent symptoms: fatigue (60%), cough (55%), sore throat (54%)
Multivariable analysis being female was significantly associated with higher risk of infection (HR 1.36, 1.01 – 1.82) – authors state the reason is unknown to them
Specialty and seniority and specific techniques (eg. video, direct or tracheostomy) not significantly associated
Implications for workforce if 10% of intubators has to isolate at some point
Contrast with other reports of 7% HCW asymptomatic carriers and 44% asymptomatic seroconversion
Limitations – community exposure or non-intubation exposure could not be taken into account, no control group

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Narrative review on viral shedding and infectivity

Findings

Viral shedding up to 63 days after symptom onset, median duration of shedding 12 to 20 days, but 31 days in one study of 41 severe cases

Outlasts symptom resolution

Peak viral load in upper respiratory tract swabs 4 – 6 days after symptom onset

Shedding in stool up to 33 days after negative PCR in respiratory samples

Viable virus has been cultured from stool and therefore faecal-oral transmission cannot be excluded

Viral shedding in stool also makes wastewater a potential surveillance tool for community spread

The true proportion of asymptomatic cases remains unclear

1 nursing home study 50% of positive PCRs in pre-symptomatic and 6% in permanently asymptomatic cases

Multiple case reports of transmission history and laboratory evidence of infection from pre-symptomatic and asymptomatic cases

True proportion of transmission that happens in this way unknown – challenge for guidelines on testing of asymptomatic people

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Available online at www.sciencedirect.com

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journal homepage: http://www.journals.elsevier.com/infection-disease-and-health/

ELSEVIER

INFECTION, DISEASE & HEALTH

Discussion paper

SARS-CoV-2: The viral shedding vs infectivity dilemma

Arabella Widders [a,*], Alex Broom [b], Jennifer Broom [c,d]

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Received 29 April 2020; received in revised form 13 May 2020; accepted 13 May 2020

Highlight that pos PCR does not equate viable virus

Amount of viral RNA not necessarily correlated to infectivity

One study suggest infectivity from 2.3 days before symptom onset, with a peak at 0.7 days before

Cite Wolfel and Arons papers on viral culture as discussed here before – no live virus isolated after day 9 after symptom onset

Additionally cite Liu who showed one case with positive viral culture from sputum on day 18 after symptom onset

Association of infectivity and sero-conversion is not known currently – both viral shedding and live virus isolation have been shown after sero-conversion

Authors highlight both the clinical and social implications of evidence on infectivity on testing strategy, resource allocation and length of isolation / implications for return to work

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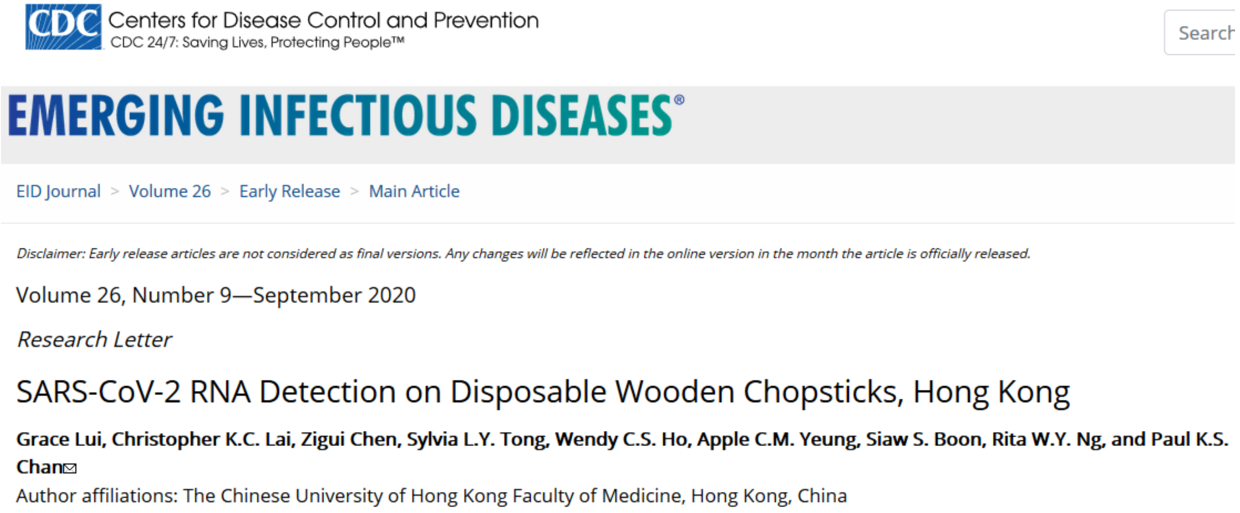
Aimed to examine the evidence of paediatric transmission in the Republic of Ireland in the school setting – **before school closures** on 12 March 2020

3 children and 3 adults with school attendance

No secondary cases among 924 child contacts and 101 adult contacts in school setting of these 6 cases



Positive PCR from wooden chopsticks of both symptomatic and asymptomatic patients

No attempt to establish viability of virus

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