The Pandemic Evidence Collaboration International Conference
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Looking at the Pandemic in the Rearview Mirror:
Successes, Failures and Unintended Consequences

Silent spreaders or Overestimated Threat? The true role of Asymptomatic COVID-19

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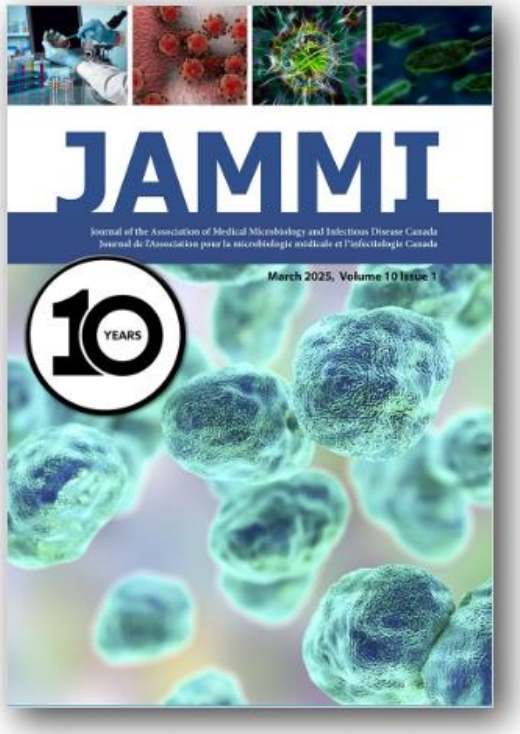

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Estimating the extent of asymptomatic COVID-19 and its potential for community transmission: Systematic review and meta-analysis

Authors: Oyungerel Byambasuren, MD, Magnolia Cardona, PhD, Katy Bell, PhD, Justin Clark, BA, Mary-Louise McLaws, PhD, and Paul Glasziou, PhD | AUTHOR INFORMATION AND AFFILIATIONS

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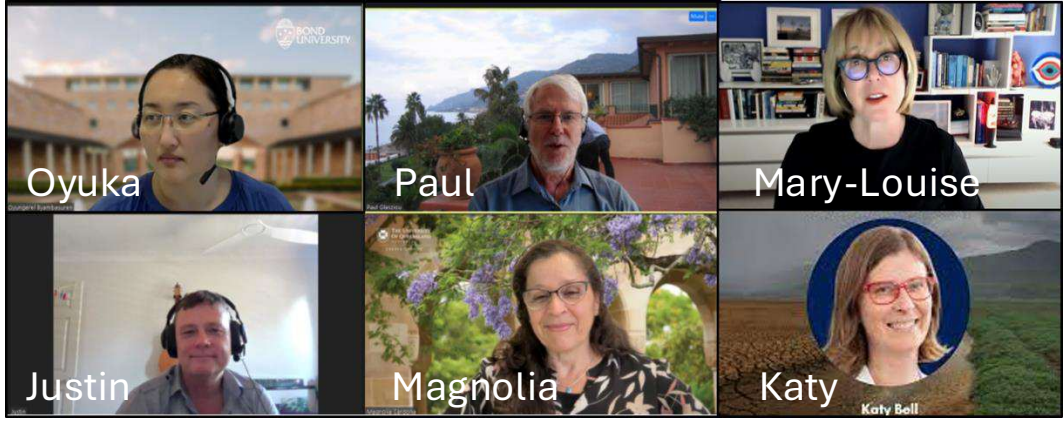
The rationale

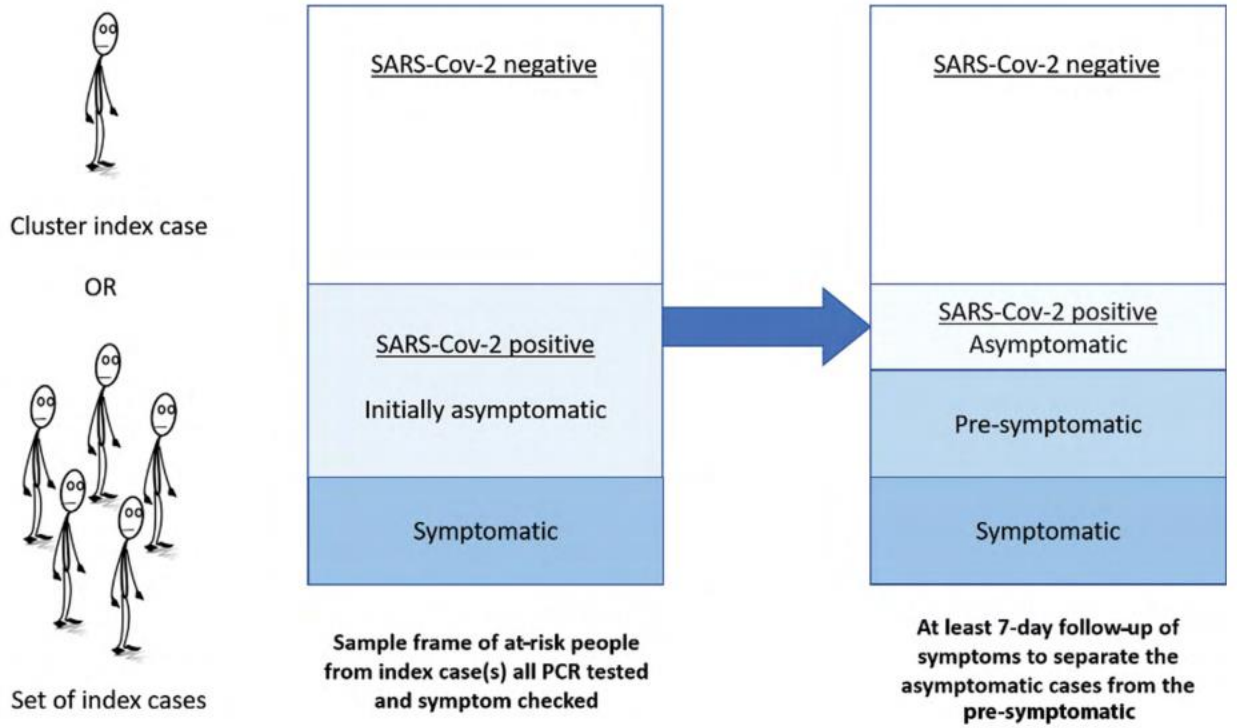
- Case reports of completely asymptomatic patients from China
- Reports of initial big infection clusters such as Diamond Princess cruise
- Rapid review from CEBM asymptomatic range 5-80%
- We aimed to conduct proper systematic review to estimate the asymptomatic cases and forward transmission rate

Photo credit: Photographer Nikos Samaras

The conduct

- 7-22 April 2020 (12 days)
- Inclusion criteria:
  - PCR tested and symptoms checked
  - Minimum follow up 7 days
- Exclusion criteria:
  - Single case clusters
  - Unsuitable study designs
- Risk of bias
  - Combination of key questions of prevalence and diagnostic accuracy studies
- Two meta-analyses

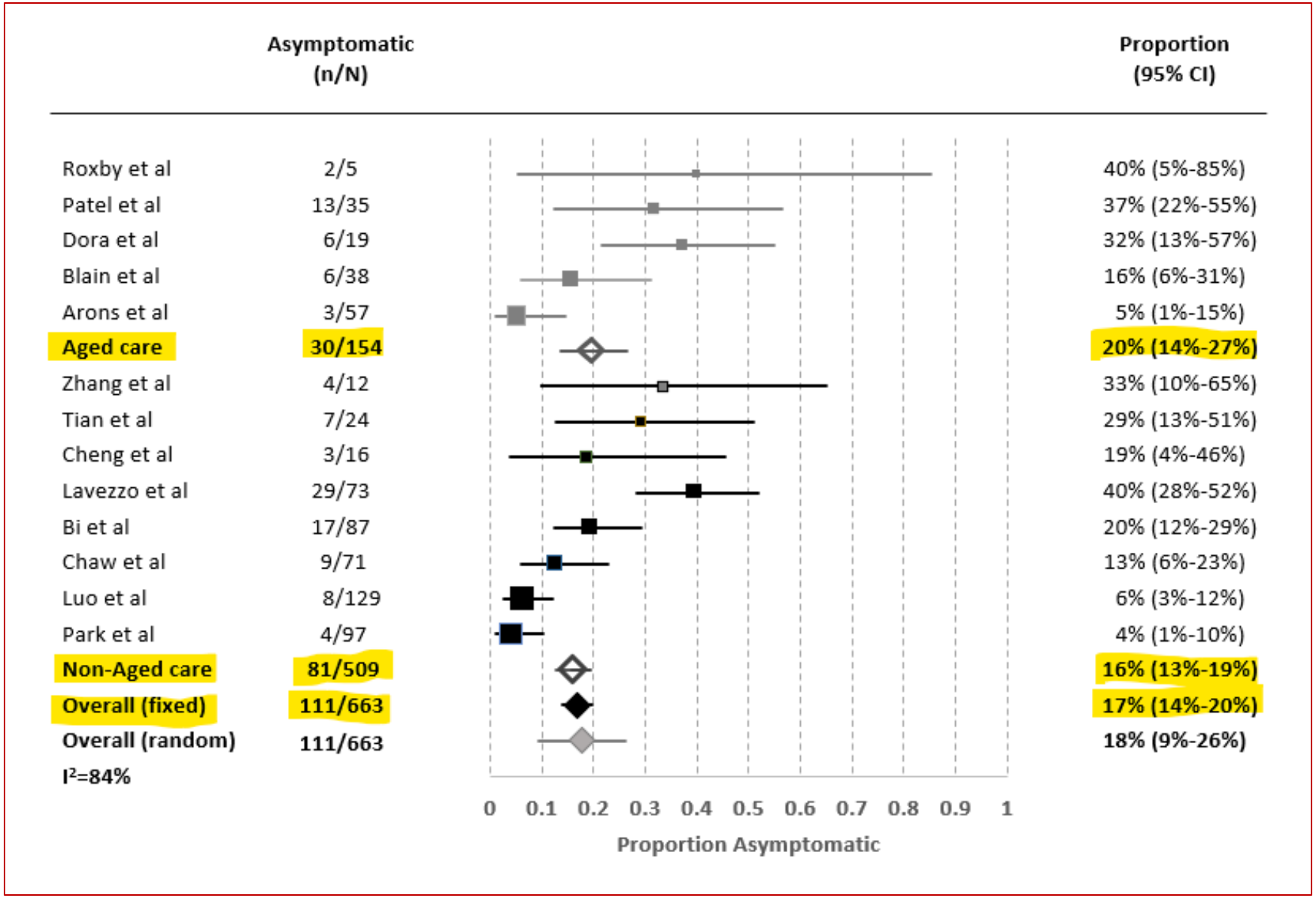




The findings

- Screened **2454** titles and abstracts
- Assessed **161** full texts (many translated)
- Included **13** studies:
  - 9 published and 4 preprints
  - 7 countries (China n = 4; United States n = 4; Taiwan n = 1; Brunei n = 1; Korea n = 1; France n = 1; and Italy n = 1)
  - 5 in aged care setting, 8 non-aged care
  - that tested 21,708 close contacts of at least 849 confirmed COVID-19 cases
  - of which 663 were positive and 111 were asymptomatic

Fixed effects pooled estimates of proportion of asymptomatic carriers by subpopulations



Comparison of secondary transmission rates

Viral load did not differ between asymptomatic and symptomatic individuals.

Study	No./*N* (%)		Relative risk
	Asymptomatic transmission rate	Symptomatic transmission rate	
Zhang et al (22)	1/119 (0.8)	11/250 (4.4)	0.2
Cheng et al (14)	0/91 (0)	22/2644 (0.8)	0.66
Chaw et al (13)	15/691 (2.2)	28/1010 (2.8)	0.78
Luo et al (17)	1/305 (0.3)	117/2305 (5.1)	0.06
Park et al (18)	0/4 (0)	34/221 (15.4)	0.72

Overall (fixed) **RR 0.58** (95% CI 0.335 to 0.994, p = 0.047)
Overall (random) **RR 0.38** (95% CI 0.13 to 1.083, p = 0.07)
I^2 = 43.4%

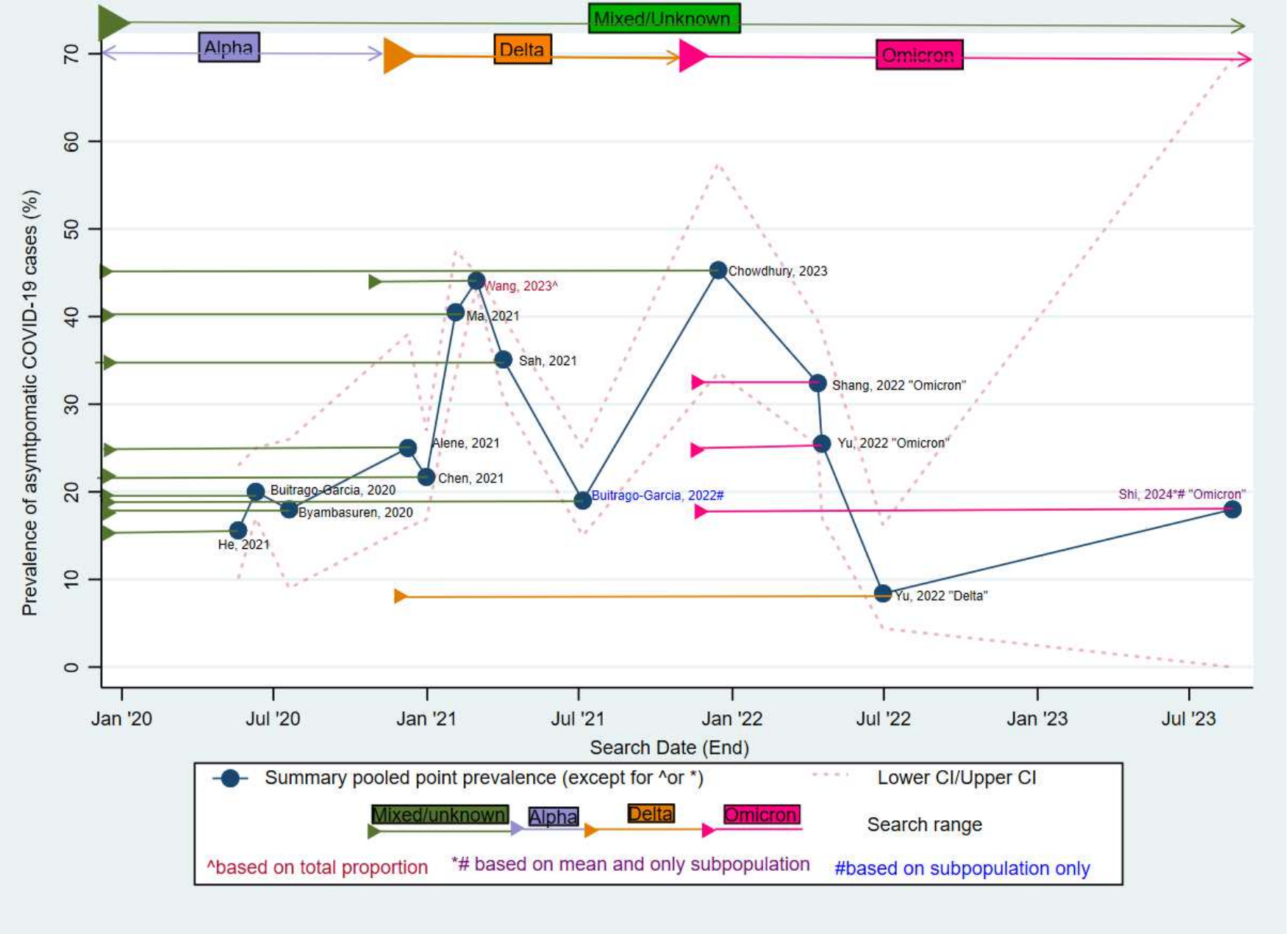
The publication

- 4 rejections in 2 weeks
- Editor's Comments:
  - *"… **The authors take a very strict approach to what studies are included** and does not consider any of the rapidly emerging studies…"*
  - *17% is too low*
- Updated the search twice to keep it up to date
- Put on MedRxiv – downloaded 30K in 3 months
- Twitter came to the rescue! JAMMI Editor Gerald Evans

aka Systematic Review

The update

- April 2025
- 11 new studies
- Prevalence ranged between 8-45%
- Publication coming



Take home messages

- 🧍 📉 Prevalence of truly asymptomatic cases were much lower than speculated and transmission risk was almost half that of symptomatic cases – unlikely drivers of the pandemic.

- 🔍 ✅ Study Quality: focus on low risk-of-bias studies. Reliable and accurate estimates are important for modelling studies and has implications for policy and public health measures.

- 🦠 Next pandemic hits: use our paper as a protocol to determine the asymptomatic case prevalence and forward transmission rates.

Thank you!

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