

[Supplemental Material]

The contribution of pre-symptomatic infection to the transmission dynamics of COVID-2019

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1. The effectiveness of case isolation in reducing the number of secondary cases during the symptomatic period

Let x be the proportion of pre-symptomatic transmission in the absence of active case finding and y that proportion in the presence of active case finding. Then y can be expressed as a function of x accounting for a reduction ϕ in the symptomatic cases:

$$y = \frac{x}{x + \phi(1 - x)}$$

Solving for ϕ :

$$\phi = \frac{\frac{x}{y} - x}{1 - x} = \frac{x(1 - y)}{y(1 - x)}$$

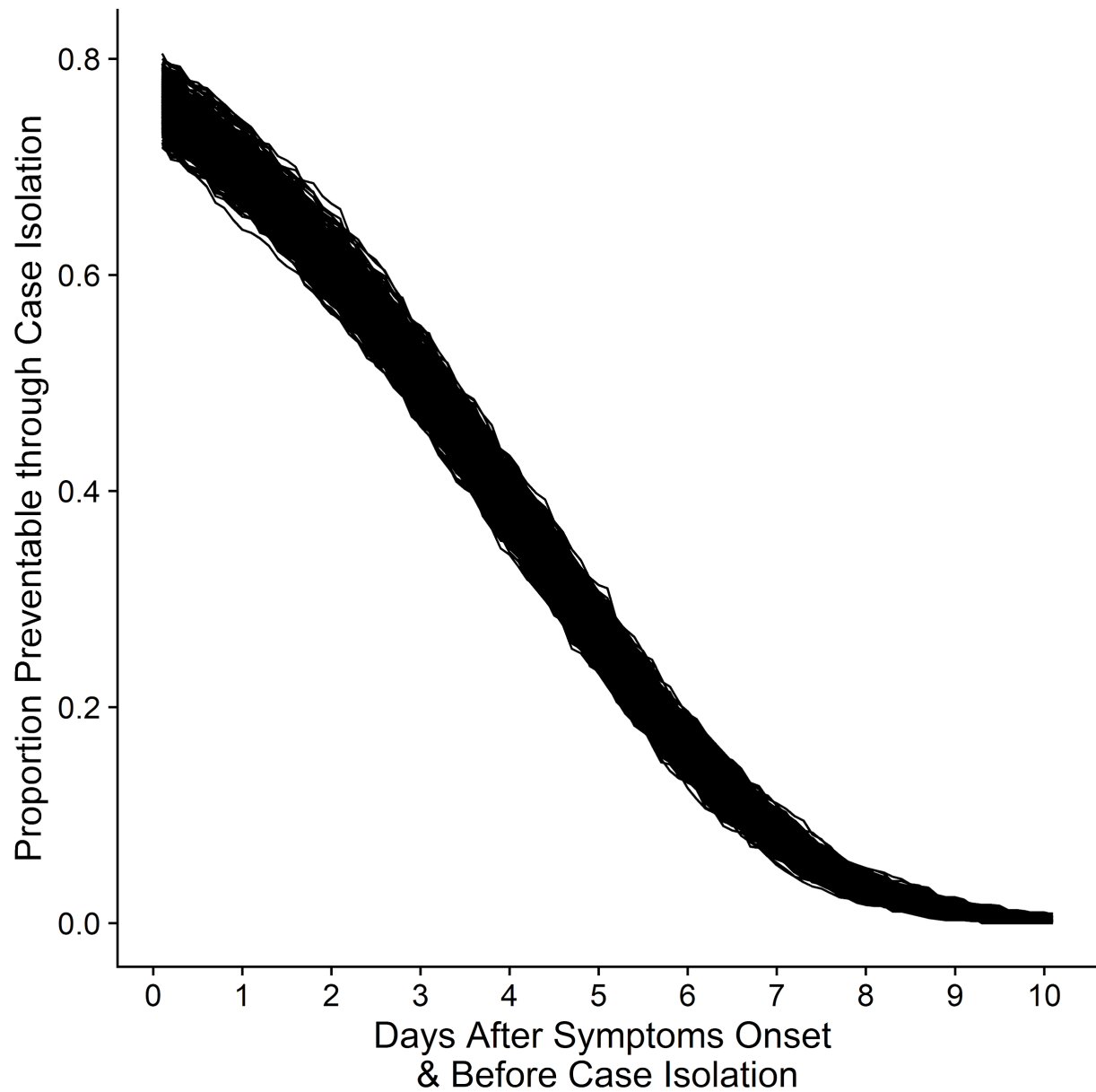
2. Symptom onset and case isolation

Supplemental Table 1. Proportions Potentially Targetable in Case Isolation

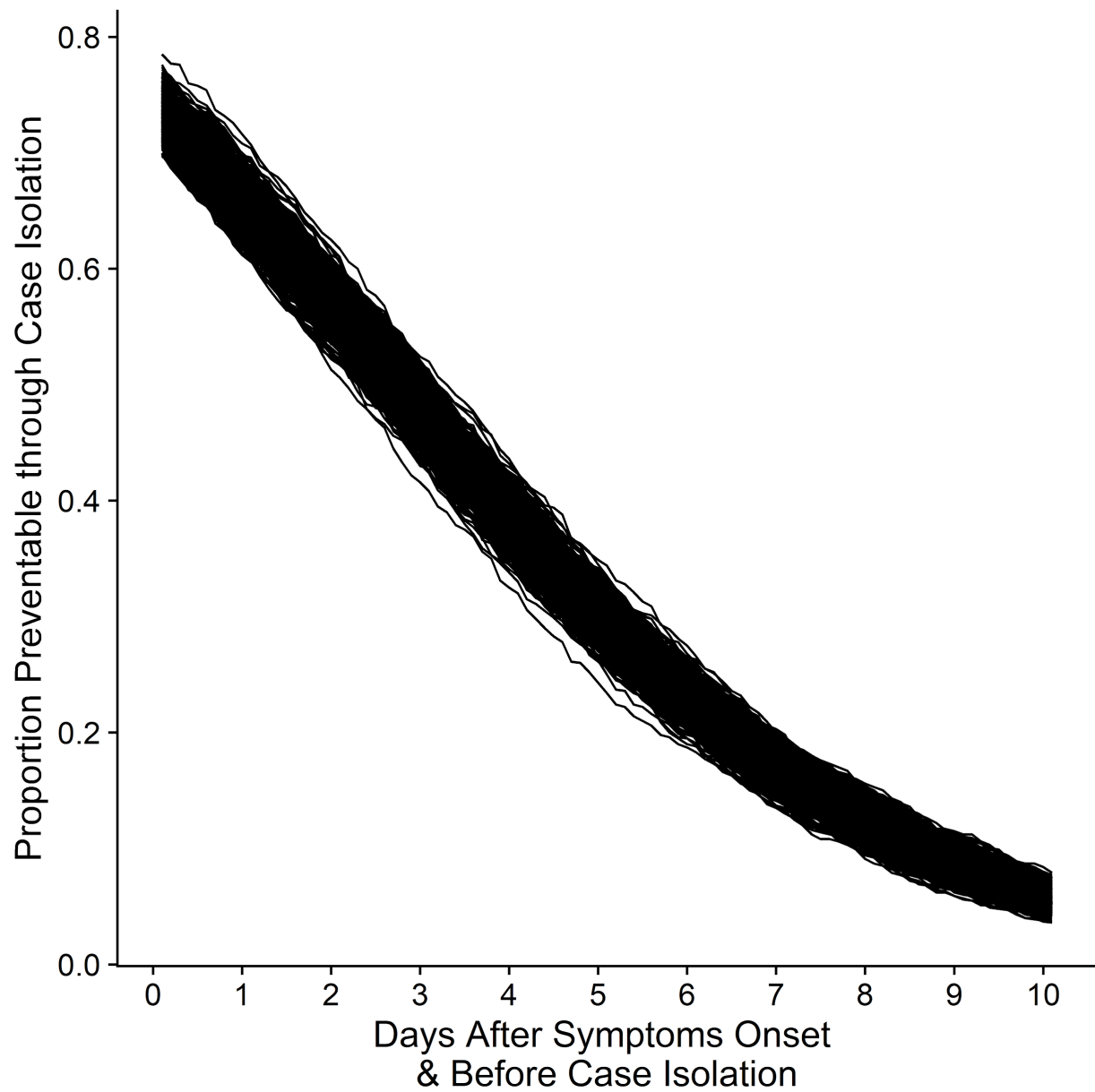
Study	Days after Symptoms but before case isolation	The proportion of cases that can be targeted for case isolation in order to reduce onward transmission
Li et al.	0	73%
Li et al.	1	65%
Li et al.	2	56%
Li et al.	3	47%
Li et al.	7	17%
Bi et al.	0	76%
Bi et al.	1	69%
Bi et al.	2	60%
Bi et al.	3	50%
Bi et al.	7	8%

This has only been done for study currently done in settings without case isolation.

Supplemental Figure 1. Association between days of case isolation and proportion of cases potential targetable for case isolation based on Bi et al. (subgroup = those isolated after more than 6 days).



Supplemental Figure 2. Association between days of case isolation and proportion of cases potential targetable for case isolation based on Li et al.



References

1. Bi Q, Wu Y, Mei S, Ye C, Zou X, Zhang Z, et al. Epidemiology and Transmission of COVID-19 in Shenzhen China: Analysis of 391 cases and 1,286 of their close contacts [Internet]. *Infectious Diseases (except HIV/AIDS)*; 2020 Mar [cited 2020 Mar 7]. Available from: <http://medrxiv.org/lookup/doi/10.1101/2020.03.03.20028423>
2. Li Q, Guan X, Wu P, Wang X, Zhou L, Tong Y, et al. Early Transmission Dynamics in Wuhan, China, of Novel Coronavirus–Infected Pneumonia. *N Engl J Med* [Internet]. 2020 Jan 29 [cited 2020 Jan 30];0(0):null. Available from: <https://doi.org/10.1056/NEJMoa2001316>