**Estimating transmission probabilities for the high- and low-transmission scenarios**

*High transmission scenario*

For the high-transmission scenario, we estimated the daily transmission probability within households, *ph*, using data from Danis and colleagues [1]. Danis and colleagues reported that 8 of 10 people who shared an apartment in a French chalet for four days with one infectious individual subsequently became infected. Thus, we estimated *ph* = 0.33 by solving 1 – (1 – *ph*)4 = 8/10.

We estimated transmission rates per interaction using data from Liu and colleagues [2]. Liu and colleagues reported a total of 43 secondary infections among 126 attendees at 8 meals, each with one infectious individual present. We assumed that meals lasted 2 h and that the transmission rate was constant over time. Thus, the probability of transmission in an interaction lasting *m* minutes is

We assumed that interactions in food lines, toilet lines, and while moving about the camp lasted for 150 min, 30 min, and 5 min respectively. Therefore, *pf* = *p*(150) = 0.407, *pt* = *p*(30) = 0.099, and *pf* = *p*(5) = 0.017. These estimates are at the high end of those found in the empirical literature, and may represent an upper bound for the infectiousness of COVID-19.

*Low-transmission scenario*

For the low-transmission scenario, we estimated the daily transmission probability within households using data from Li and colleagues [3]. Li and colleagues studied the households of 105 COVID-19 patients who were hospitalised in China between 1 January and 20 February 2020. Household members were exposed to infection until patients were hospitalised, and Li and colleagues recorded the proportion of household members that became infected.

Members of households occupying isoboxes or tents in the Moria refugee camp may be in closer contact for longer periods than members of Chinese households. Therefore, we assumed that the transmission rates among household members in Moria would be similar to the transmission rates between spouses in Chinese households, who may be in closer contact than other household members.

Li and colleagues reported that 25 of 90 spouses of infectious individuals became infected. However, spouses in Li and colleagues’ data were exposed to their infectious partners for multiple days, and our model is parameterised on daily transmission probabilities. Therefore, we estimated the days of exposure for spouses in Li and colleagues’ data set, and used this and the total infection rate to estimate the daily transmission probability. Li and colleagues reported that 12 patients were hospitalised on days 0 or 1 of symptoms, 34 were hospitalised on days 2-5 of symptoms, and 59 were hospitalised on days 7-11 of symptoms. Fourteen patients self-isolated in their homes from the onset of symptoms and there was no transmission from these patients to their households. We do not know on which days the patients that self-isolated were hospitalised, so we assumed that they were divided proportionally between the group that was hospitalised on days 2-5 and the group that was hospitalised on days 7-11. We assumed that every patient became infectious three days before the appearance of symptoms [4] and remained infections until hospitalisation. We did not know the exact day on which patients were hospitalised, so we assumed that all patients were hospitalised on the middle day for their groups. We solved

for *ph* to obtain an estimated daily transmission probability within households of 0.0397. Because the Moria population has smaller homes, less sanitary conditions (e.g., no washing facilities in homes), and poorer background health than the population Li and colleagues studied, we believe this estimate is conservative.

We set the transmission probability between individuals that interact in food lines, *pf*, equal to *ph*. This is reasonable because food lines in Moria are dense (figure #) and people often wait in food lines for 2-3 h per visit. We set the transmission probability between individuals that interact in toilet lines to to reflect an estimated 0.5 h waiting time in toilet lines. We set the transmission rate per interaction during movement about the camp to *pm* = 0.006 following Shen and colleagues [5]. Shen and colleagues reported that 3 of 473 of attendees at three parties with 2 infectious individuals became infected, and it is unlikely that the 2 infectious individuals interacted with all of the other attendees. Thus, we think Shen and colleagues estimate may be conservative as a per-interaction transmission probability.

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