SUPPLEMENTAL DATA

Prior distribution for parameters of log-normal parameters for onset distribution, derived from volunteer challenge studies described by Nishiura and Halstead. The model form follows. Let $t_i$ be the time from infection to onset for participant $i$. We assume $t_i \sim \log N(m, s^2)$ with mean $\exp(m + s^2 / 2)$ and variance $\exp(2m + s^2)(\exp[s^2] - 1)$ on the natural scale (or $m$ and $s^2$ on the logarithmic scale). We assume a priori that $m \sim U(-\infty, \infty)$ and $s \sim U(0, \infty)$. The resulting posterior is approximately bivariate normal with mean $\mu$ and covariance $\Sigma$ as below:

$$
\begin{pmatrix}
m \\
s
\end{pmatrix} \sim N\left(\mu = \begin{pmatrix}1.729 \\ 0.223\end{pmatrix}, \Sigma = \begin{pmatrix}0.000388 & 0.000001 \\ 0.000001 & 0.000202\end{pmatrix}\right).
$$

This becomes the prior distribution for the analysis of the Tan Tock Seng hospital data.

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**Supplemental Table 1**

Raw data from Nishiura and Halstead$^{11*}$

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<th>Onset (h)</th>
<th>Count (DENV-1)</th>
<th>Count (DENV-4)</th>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>47</strong></td>
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</tbody>
</table>

* Incubation periods following volunteer challenge. Data as in Nishiura and Halstead$^{11}$ (Nishiura H, personal communication).