Supplementary figure legends

**Supplementary figure 1:** A summary of source locations and date ranges covered for the 27 serial interval and generation time estimates from 24 papers that were included in simulations to infer pre-symptomatic transmission. This plot refers both to the estimates from the main text for which we could capture uncertainty (black colour) and other estimates for which we could simulate distributions but not capture uncertainty (grey colour). Line widths are scaled to reflect sample size. BN = Brunei Darussalam, BR = Brazil, CN AEH = China: All regions excluding Hubei, CN HK = China: Hong Kong, CN SY = China: Shiyian (Hubei), CN SZ = China: Shenzhen, CN: TJ = China Tianjin, CN: WH = China Wuhan, CN: ZH = China: Zhuhai, IR = Iran, IT= Italy, KR = The Republic of Korea, SG = Singapore, VN = Vietnam.

**Supplementary figure 2:** A summary of the parameters from the serial interval and generation time estimates for the 27 serial interval estimates from 24 papers that were included in simulations to infer pre-symptomatic transmission. This plot refers both to the estimates from the main text for which we could capture uncertainty (black colour) and other estimates for which we could simulate distributions but not capture uncertainty (grey colour). Points indicate means and bars indicate 95% confidence intervals. BN = Brunei Darussalam, BR = Brazil, CN AEH = China: All regions excluding Hubei, CN HK = China: Hong Kong, CN SY = China: Shiyian (Hubei), CN SZ = China: Shenzhen, CN: TJ = China Tianjin, CN: WH = China Wuhan, CN: ZH = China: Zhuhai, IR = Iran, IT= Italy, KR = The Republic of Korea, SG = Singapore, VN = Vietnam.

**Supplementary figure 3:** A boxplot summarising simulation results showing transmission time in days relative to infector symptom onset. Purple triangles represent the mean of the simulation samples. Unlike for the simulation results presented in the main text, the uncertainty associated with serial interval, generation time and incubation period estimates was not incorporated in these simulations. BN = Brunei Darussalam, BR = Brazil, CN AEH = China: All regions excluding Hubei, CN HK = China: Hong Kong, CN SY = China: Shiyian (Hubei), CN SZ = China: Shenzhen, CN: TJ = China Tianjin, CN: WH = China Wuhan, CN:
ZH = China, ZH = Zhuhai, IR = Iran, IT= Italy, KR = The Republic of Korea, SG = Singapore, VN = Vietnam.