

Journal and date	Title	Methods	Key findings	Implications
Li et al. Science 16 Mar 2020	Substantial undocumented infection facilitates the rapid dissemination of novel coronavirus (SARS-CoV2)	Simulation of observations during 10–23 January 2020 (i.e., the period before the initiation of travel restrictions) to infer SARS-CoV2 transmission dynamics during the early stage of the outbreak	<ul style="list-style-type: none"> • Before the Wuhan lockdown, 86% of infections went undocumented and that, per person, these undocumented infections were 55% as contagious as documented infections • This high proportion of undocumented infections, mostly not severely symptomatic, appears to have facilitated the rapid spread of the virus throughout China 	<ul style="list-style-type: none"> • A large proportion of COVID-19 infections were undocumented prior to the implementation of travel restrictions and other control measures in China • These findings indicate that an increase in the identification and isolation of currently undocumented infections would be needed to fully control SARS-CoV2
Althaus et al. (preliminary report)	Real-time modelling and projections of the COVID-19 epidemic in Switzerland	A dynamic transmission model to the daily number of reported deaths, estimate the reduction in transmission after the strengthening of social distancing measures on 17 Mar 2020	<ul style="list-style-type: none"> • Before 17 Mar 2020, estimated basic reproduction number R_0 of COVID-19 was 2.73 (95% confidence interval, CI: 2.42 - 3.12). • Transmission decreased with the strengthening of social distancing measures by 78% (95% CI: 66%-90%). • This resulted in an effective reproduction number $R = 0.59$ (95% confidence interval, CI: 0.36 - 0.89) 	<ul style="list-style-type: none"> • Social distancing measures in Switzerland seem to have been effective and reduced the reproduction number to 0.59 (95% CI: 0.36-0.89).
Leung et al. The Lancet https://doi.org/10.1016/S0140-6736(20)30746-7	First-wave COVID-19 transmissibility and severity in China outside Hubei after control measures, and second-wave scenario	Susceptible–infectious–recovered model was used to show the potential effects of relaxing containment measures after the first wave of infection, in anticipation of a possible second wave	<ul style="list-style-type: none"> • In all 4 selected cities mean of R_t decreased substantially, after massive control measures were implemented on Jan 23, • Relaxation of intervention increased the cumulative case count exponentially • Allowing R_t to rise above 1 when the epidemic size is still small (ie, no herd immunity) would likely 	<ul style="list-style-type: none"> • These findings highlight that as the number of cases would progressively rise when $R_t > 1$, simply tightening control interventions again to maintain $R_t=1$ would not reduce the burden back to its original baseline. • Control measures should be relaxed gradually so that the resulting R_t would not sustainably exceed 1.

	planning: a modelling impact assessment		<p>incur both health and economic loss even if aggressive interventions could push the prevalence back to pre-relaxation level afterwards.</p> <ul style="list-style-type: none"> • To note the majority of cases were in household clusters: At least 235 (56%) of 417 cases reported in Shenzhen were from clusters, among which more than 80% were household clusters. • 	<ul style="list-style-type: none"> • Proactively striking a balance between resuming economic activities and keeping R_t below 1 is likely to be the optimal strategy until effective vaccines become widely available, • Control policies, including social distancing, behavioural change, and public awareness, will probably be maintained for some time • Keeping close watch of real-time transmissibility will also help to ensure the infection prevalence does not exceed the surge capacity of the health system.
Prem et al. Lancet Public health	The effect of control strategies to reduce social mixing on outcomes of the COVID-19 epidemic in Wuhan, China: a modelling study	Simulation of the ongoing trajectory of an outbreak in Wuhan using an age-structured susceptible-exposed-infected-removed (SEIR) model for several physical distancing measures	<ul style="list-style-type: none"> • Extreme physical distancing measures, including school closures, workplace closures, and avoidance of any public gatherings all at once can push the transmission to households, leading to increased clustering of household cases • If these restrictions are lifted in March, 2020, a second peak of cases might occur in late August, 2020 in China. Such a peak could be delayed by 2 months if the restrictions were relaxed a month later, in April, 2020. 	<ul style="list-style-type: none"> • This paper simulated lifting the interventions in a staggered fashion • Projections suggest that premature and sudden lifting of interventions could lead to an earlier secondary peak • This indicates the need to carefully consider epidemiological and modelling evidence before lifting these measures to mitigate the impact of a second peak in cases.
Wei et al. MMWR	Presymptomatic Transmission of SARS-CoV-2	Investigation of all 243 cases of COVID-19 reported in Singapore during January 23–March 16	<ul style="list-style-type: none"> • 7 COVID-19 epidemiologic clusters in which presymptomatic transmission likely occurred were identified, 	<ul style="list-style-type: none"> • These findings suggest the possibility of presymptomatic transmission • It is important to develop contact tracing protocols that includes a period before symptom onset.

			<ul style="list-style-type: none"> • 10 of the 157 (6.4%) locally acquired cases were attributed to presymptomatic transmission • In the 4 clusters for which the date of exposure could be determined, presymptomatic transmission occurred 1–3 days before symptom onset 	<ul style="list-style-type: none"> • Evidence of presymptomatic transmission of SARS-CoV-2 underscores the critical role of social distancing
<p>Zhang et al. Cell</p> <p>DOI: 10.1016/j.xinn.2020.04.004</p>	<p>What is required to prevent a second major outbreak of SARS-CoV-2 upon lifting the quarantine of Wuhan city, China</p>	<p>6 proposed dates for quarantine lifting was examined in this model.</p>	<ul style="list-style-type: none"> • Estimated 24.6% would be infected through public contacts, 69.7% through household contact, 5.5% through hospital contacts • Estimated ~70% of all infected cases was due to household transmission in agreement with a recent report of WHO (78- 85%). • This modelling suggests if public contact recovered to 100% the pre-quarantine level and facial mask usage was high at 95%, the epidemic would follow a smooth decline to elimination regardless of which day for quarantine was lifted • However, this assumption is based on face masks help reduce infection 	<ul style="list-style-type: none"> • In cases where the epidemic results in a second major outbreak, the second outbreak would be predominantly driven by household transmission. • Governments will need to determine how to minimise public contacts from workplaces, venues for essential daily commodities, residents, leisure, entertainment venues and public events. • Intercity travel should be minimised, and the return of the residents may need to be staged. •