Supplementary Information

Severe acute respiratory syndrome (SARS) mathematical models and disease parameters: a systematic review and meta-analysis

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Overview

This supplement provides additional details of the methodology used in our literature review (section A) as well as additional results (section B), including full details of the information extracted as part of the review and synthesised in the main text. Section C introduces our R package `epireview`, where all the data gathered in this review is stored. Section D contains our PRISMA checklists. Section E details other SARS systematic reviews identified in our initial literature search and which we used to ensure no relevant study was omitted in our review. Section F lists all the studies we excluded. Finally, section G lists all members of the Pathogen Epidemiology Review Group who contributed to this work.

A Additional Methods

This systematic review and meta-analysis of severe acute respiratory syndrome coronavirus 1 (SARS-CoV-1) is part of a series of systematic reviews of nine priority pathogens on the WHO's R&D blueprint list, which was registered on PROSPERO. Other systematic reviews in this series completed to date concerned Marburg virus disease [1], Ebola virus disease [2], and Lassa fever [3].

The code to reproduce our results is available at `https://github.com/mrc-ide/priority-pathogens`.

A.1 Study Selection

Original research papers in English were included if reporting on SARS-CoV-1 transmission, evolution, natural history, severity, seroprevalence, size of previous outbreaks or published mathematical transmission models. Non-peer-reviewed literature was excluded. Papers identified in the search were imported into *Covidence*, a software program used to manage systematic reviews. From a team of seven reviewers, two independent reviewers first screened titles and abstracts, followed by full-text reviews to assess eligibility for data extraction. Disagreements in eligibility determination were resolved by consensus between the two independent reviewers.

Search term: `(SARS OR SARS-CoV-1 OR "Severe acute respiratory syndrome") AND ((transmissi* OR epidemiolog*) OR (model* NOT imag*) OR (severity OR "case fatality ratio*" OR CFR OR "case fatality rate*" OR "mortality rate*" OR "attack rate*") OR ("infectious period*" OR "serial interval*" OR "incubation period*" OR "generation time*" OR "generation interval*" OR "latent period*" OR latency) OR (heterogeneit* OR superspread* OR "super spread*" OR super-spread* OR overdispersion OR overdispersed OR over-dispersion OR over-dispersed OR "over dispersion" OR "over dispersed") OR (infectivity OR infectiousness OR "growth rate*" OR "reproduction number*" OR "reproductive number*" OR R0 OR "reproduction ratio*" OR "reproductive rate*") OR ("pre-existing immunity" OR serological OR serology OR serosurvey*) OR (evolution* OR mutation* OR substitution*) OR (outbreak* OR cluster* OR epidemic*) OR ("risk factor*")) NOT (COVID-19 OR SARS-CoV-2)`

This search term is common to all pathogen systematic reviews in the series (apart from the first field containing the pathogen name). In addition, for this review, we added the final term above to exclude SARS-CoV-2 related papers, as these were not in scope for this review. The search was initially conducted on 08/03/19 but repeated on 18/11/2023 and 24/06/2024.

A.2 Data Extraction

Models

Details of disease transmission models were extracted, including model type, whether it modelled deterministic or stochastic processes, which transmission pathways were included, and in the case of compartmental models, the compartmental structure of human health states (e.g., SIR, SEIR). Furthermore, we extracted information on underlying model assumptions, whether the model is theoretical or fitted to data, which interventions were considered, and the availability of model code. See Table B.6 for full details.

Parameters

For each parameter, we extracted all available information, including types of value estimated (e.g., mean, median, standard deviation), uncertainty intervals (capturing the precision of estimates), and ranges (if, for example, multiple estimates were obtained from different populations or using different methods). Study context for parameter values included survey location and dates, sample size, basic demographic information, and timing of the survey in relation to reported outbreaks. See Table B.7 for full details.

For genomic data, if specified we noted the gene studied and if newly sequenced data were available. For reproduction numbers, we recorded the methods used for estimation (e.g. renewal equations, compartmental models, empirical methods). For case fatality ratios, we extracted whether the estimation approach accounted for cases with unknown final status or not [4]. For both case fatality ratios and seroprevalence, we additionally recorded numerators and denominators where available.

For risk factors, we extracted the outcome (e.g. infection or death), the risk factor for that outcome (e.g. age, sex or occupation), the type of occupation if specified, and whether the risk factor(s) estimates were statistically significant and/or adjusted. We chose not to extract numerical odds ratio estimates because studies may have used different stratifications or reference groups, making it challenging to compare values across studies. The information we extract offers an overview of risk factors explored across studies that may affect the risk of infection and death, which may be useful to consider when designing SARS transmission models.

For papers which reported multiple parameter values for the same parameter (e.g. for multiple locations, time periods, assumptions, sub-groups), we applied the 'rule of 5', that is, if *more than* 5 parameter values were reported, we only captured the range of values reported for this parameter. The threshold of 5 was chosen so that we can capture the location with community transmission of SARS-CoV-1.

To summarise studies, which only have ranges captured in the database, we report the midpoint of the range and state this explicitly.

A.3 Data Analysis

We compute doubling times as $T_d = \frac{\ln 2}{r}$, where r is the reported growth rate estimate.

A.3.1 Meta-analysis

The meta-analysis of mean incubation periods and the mean onset-admission delay (in Figure 5 of the main text) followed a standard approach and was conducted using the `meta` R package [5].

A mixed-effects model is a linear model $y_i = \beta_0 + \sum_{j=1} \beta_j x_{ij} + u_i + \epsilon_i$, where y_i are the observed data, x_{ij} are explanatory variables, β_j are fixed effect coefficients, u_i are the random effects (centred around zero and independent across i), and ϵ_i are error terms. Meta-analysis is a special case of the above mixed-effects model with only an intercept term β_0 (a fixed-effects/common-effects model) or only an intercept term β_0 and a random-effects term u_i associated with that intercept (a random-effects model).

In Figure 5D of the main text, we present our meta-analysis of the mean incubation period. The meta-analysis reports the common and random effects for each sub-group of the study population to investigate any patterns between groups (the subgroup analysis was done independently for each group).

The mean onset-admission delay meta-analysis in Figure 5E requires paired mean and standard deviation estimates of the onset-to-admission delay (the same applies to the mean incubation period meta-analysis). However, the underlying studies report several different parameter value types (e.g., means, medians, standard deviations, interquartile range, minimum/maximum), we use the functionality of *metamean*, which is implemented in the `meta` package, to infer the means and standard deviations for each study. In particular, we use the method provided by Cai et al. (2021) [6], which allows for unknown non-normal distributions.

Data inclusion protocol for meta-analysis

- The data is taken as extracted (post-data cleaning), and the mean and the standard deviations are inferred using the stated methods above (where possible).
- Any filtering (for sub-group, setting, country) will be stated clearly in the analysis.
- Parameter estimates, which are ranges as the 'rule of 5' was applied, were not included in the meta-analysis.
- The included studies in the mean onset-to-admission delay subgroup meta-analysis are available in Figure B.10 and for the mean incubation period meta-analysis in the main text Figure 5.

A.3.2 CFR data synthesis

We estimated location-specific CFRs using data from the the final report of the Hong Kong SARS Expert Committee [7]. Specifically, for each location i, the CFR_i was calculated as the number of deaths divided by the total number of cases, computed as: cases who recovered + cases who died + cases still in hospital.

To obtain an overall estimate of the CFR using the same data, we used a generalised logistic mixed-effects model, in which the location-specific CFR estimates are transformed using the logit-transformation $y_i = \log\left(\frac{CFR_i}{1-CFR_i}\right)$ to ensure that the distribution was approximately normal, and then a generalised linear mixed-effects model is applied to the transformed CFRs to estimate the pooled effect. A comprehensive overview of the methodology is provided by Harrer et al. (2021) [8].

A.3.3 Overdispersion data analysis

We calculated the proportion of SARS-CoV-1 transmission events attributable to the 20% most infectious cases following the approach outlined in Lloyd-Smith et al. [9]. We take the basis reproduction number R_0 and the overdispersion parameter estimate k from the literature [9], which parameterise the gamma distribution of the individual reproduction number ν with pdf $f_\nu(x)$ and cdf $F_\nu(x)$. The cdf for the transmission of the disease is given by:

$$F_{trans}(x) = \frac{1}{R_0}\int_0^x u f_\nu(u)du$$

This is the expected proportion of all transmissions due to infectious individuals with $\nu < x$.

The expected proportion of transmission events due to the 20% most infectious individuals was calculated as 1-$F_{trans}(x_{20})$, where x_{20} is obtained by solving $1 - F_\nu(x_{20}) = 0.2$.

We used the following values for the computation:

Location	Period	R_0 or R_t	k	proportion of infections due to 20% most infectious
Singapore	pre-intervention	1.63	0.16	0.912
Singapore	post-intervention	0.68	0.071	0.971
Beijing	pre-intervention	0.94	0.17	0.920
Beijing	post-intervention	0.28	0.0062	0.998

Assumed reproduction number values and overdispersion parameters k. For the pre-intervention period R_0 is used, for the post-intervention period R_t for the applicable time period is used. All estimates are taken R_0, R_t and k estimates are from [9]

A.3.4 Reporting Uncertainty

A wide assortment of uncertainty formats and range reporting was extracted across all studies. In this section we clarify our wording when referring to uncertainty.

While most studies reported a central estimate for parameters of interest, some instead reported a range of values or we applied the 'rule of 5' as outlined in section A.2. These range of values are depicted throughout our manuscript figures via shaded colour bars in all figures. These ranges are

included when we refer to "central estimates", and we specifically extract the midpoint of these ranges for plotting central estimate points.

This is different to where papers report uncertainty. We extracted both single type uncertainty estimates (e.g. standard deviation, or variance) as well as paired-type uncertainty estimates (e.g. confidence/credibility intervals). Uncertainty is depicted across all our figures using solid line error bars. Throughout the manuscript, when we refer to the "ranges of uncertainty" for a parameter, we refer to the lowest point across all uncertainty intervals to the highest point across all uncertainty intervals. For example, if three estimates for R_0 were given: 1.3 (95% CI 0.7-1.5), 1.4 (95% CI 1.1-1.7) and 1.5 (95% CI 1.4-1.6), we say that the ranges of uncertainty for the parameter, were 0.7 to 1.7.

Note, that we included fields to explicitly extract when reported standard deviations were of a sample, or of an estimator. However, only one extracted parameter was specifically highlighted as for an estimator, the majority were undefined.

Note, where standard errors were reported, we did not convert these to uncertainty estimates, and did not plot standard errors in our figures.

A.4 Inclusion & Exclusion Criteria

Inclusion	Exclusion
Measures/estimates of human: Reproduction numbers (R, R_0, R_t, r, R_e), growth rate (r), doubling times, generation time, serial interval, incubation/latent period, case fatality ratio (CFR), attack rate, mutation rate (e.g. from phylogenetic study), overdispersion, risk factors (risk and the measure).	Non-English language publication
Mention of historical or any outbreak in humans: size, year, location, duration, spatial scale	Studies of co-infections. (local, regional, national, international).
Measures/estimates of animal: R, R_0, R_t, r, R_e, growth rate, mutation rate.	Animal studies that do not report R, R_t etc.
Mathematical or statistical model of transmission.	Qualitative studies, e.g., KAP studies.
Measures of seroprevalence and negative seroprevalence in humans.	Pathogen not the primary focus of study.
Relative ratio of human-human vs animal introductions.	Duplicates.
Reviews that report inclusion criteria for reference checking.	Does not match any of the inclusion criteria.
For "small" pathogens[1], include case reports to potentially reconstruct serial interval distribution etc.	In-vitro studies.
	Non-peer reviewed publications, conference proceedings, abstracts, posters, letters to the editor

Table A.1: Inclusion and exclusion criteria for papers.

A.5 Quality Assessment

Theme	Question
Is the methodological/statistical approach suitable? (how the data are used)	1. Clear and reproducible 2. Robust and appropriate for the aim [subjective criteria]
Are the assumptions appropriate? (input parameters/assumptions - what goes into the methodology)	3. Clear and reproducible 4. Justified (published study or analysis of data)[objective criteria]
Are the data appropriate for the selected methodological approach?	5. Clearly described and reproducible 6. Are issues in the data clearly discussed and acknowledged? 7. Are issues in the data accounted for in the chosen methodological approach?

Table A.2: Quality assessment questionnaire: possible responses for each question listed were: Yes, No, and NA (non-applicable).

[1]The inclusion/exclusion criteria are reported as stated in the PROSPERO registration for the overall priority pathogen project. The threshold is determined on a case-by-case basis for each pathogen and SARS is not considered a "small" pathogen.

B Additional Results

B.1 Quality Assessment Results

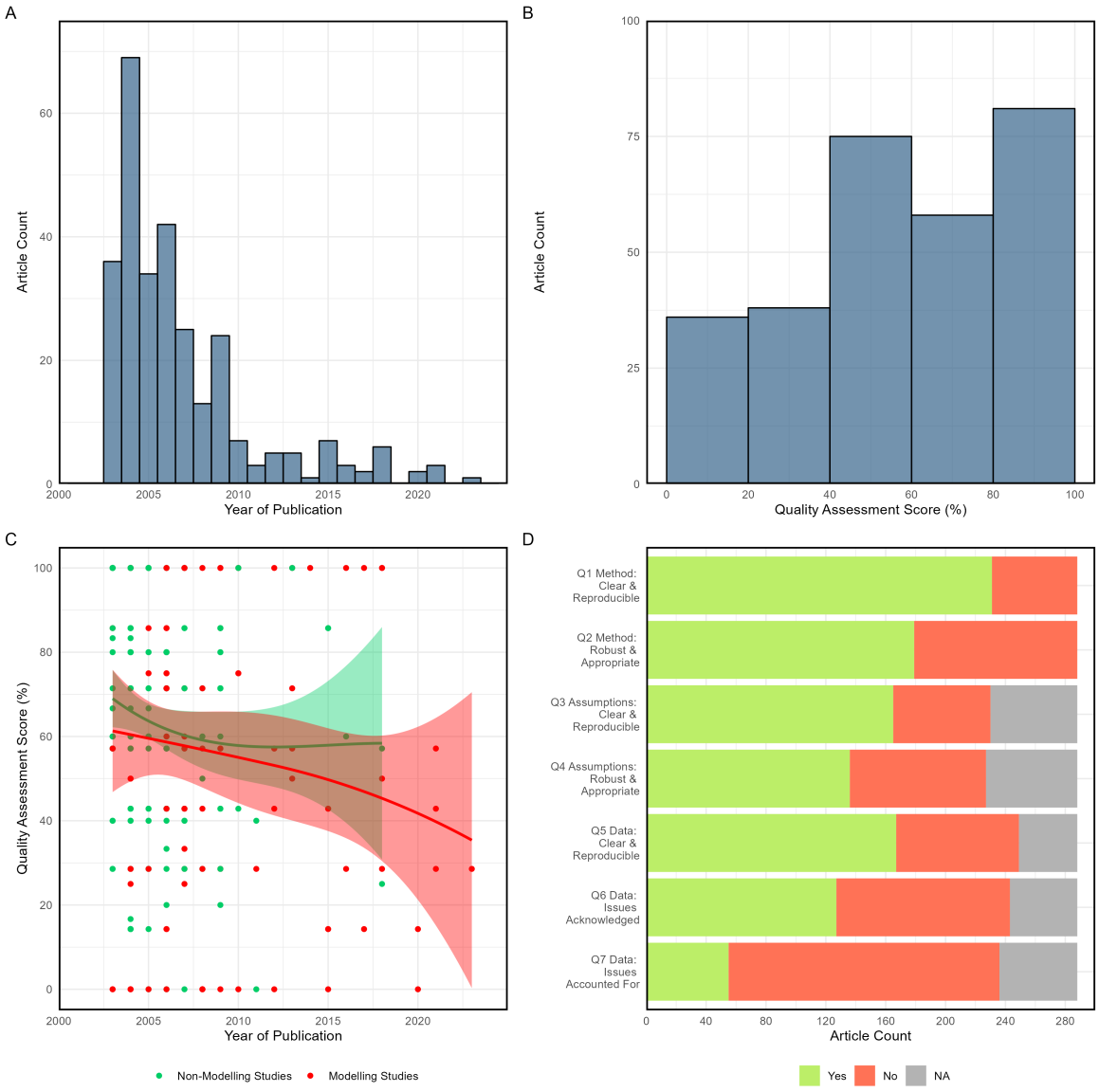

Figure B.1: (A) Article count by year of publication; (B) article count by quality assessment score (defined as percentage of 'Yes' answers relative to sum of 'Yes' and 'No' answers for each paper, removing 'NAs'); (C) quality assessment score by year of publication (time trends for articles with and without transmission models fitted via local polynomial regression); (D) article count for each quality assessment question scoring 'Yes', 'No' or 'Non-Applicable'.

B.2 Parameter and Model Overview

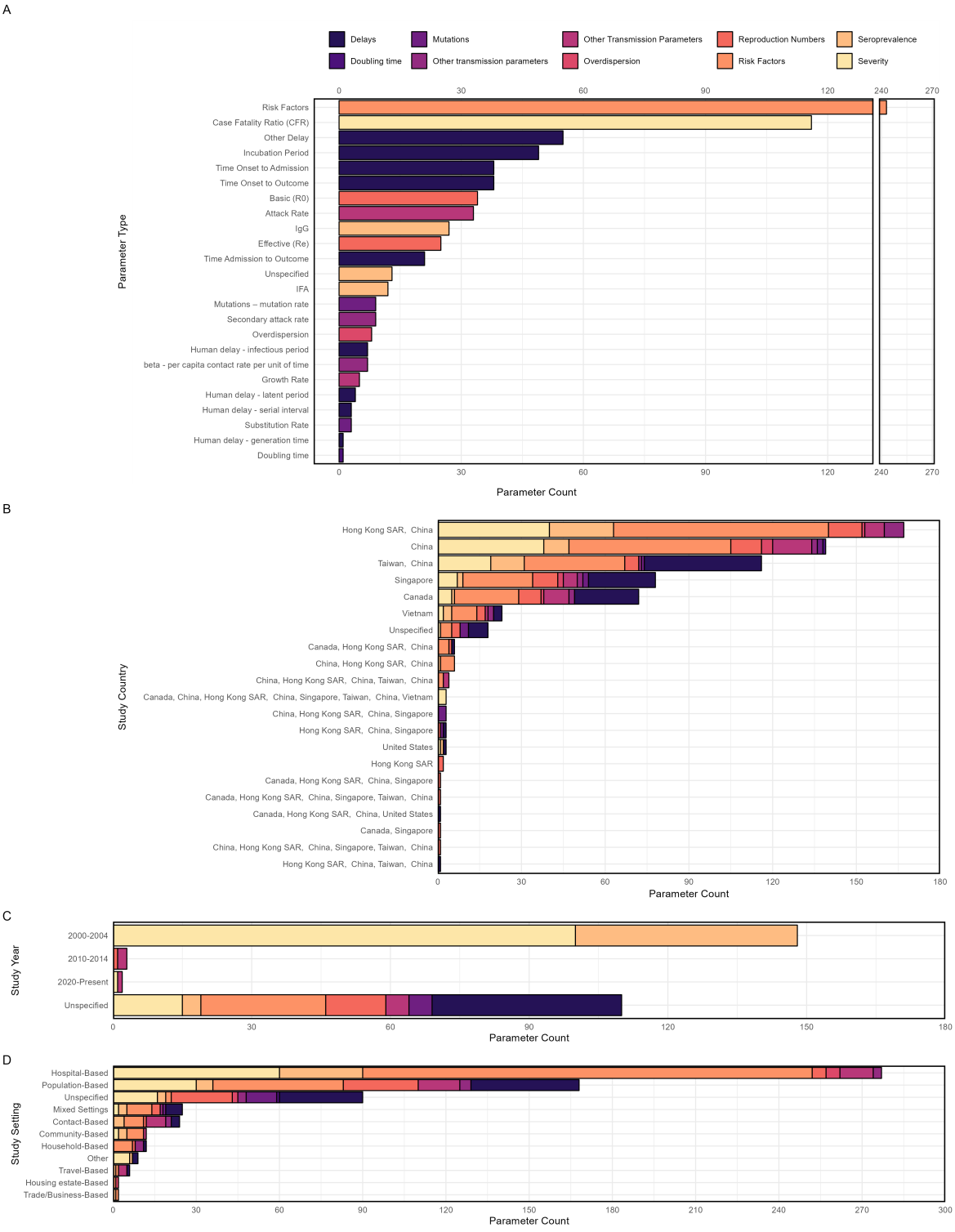

Figure B.2: Parameter type count by (A) parameter class, (B) survey country/countries, (C) survey decade (D) study setting. Colour corresponds to parameter type.

Parameter class	**Total (no quality assessment)**		**Quality assessment** > 0.5	
	# parameters	# papers	# parameters	# papers
Attack rate	33	22	26	16
Doubling time	1	1	0	0
Growth rate	5	3	4	2
Delays	217	100	155	74
Mutation rates	12	6	5	2
Overdispersion	8	4	7	3
Reproduction number	59	32	33	17
Risk factors	243	102	180	75
Seroprevalence	52	39	40	31
Severity	116	77	86	56
Other transmission parameters	16	14	14	12

Table B.3: Total parameters extracted and total number of papers these parameters were extracted from. Middle column includes all parameters. Right column only includes those papers that scored higher than 0.5 for quality assessment (see Table A.2).

Parameter type	**Total (irrespective of QA)**		**Quality assessment** > 0.5	
	# parameters	# papers	# parameters	# papers
Attack rate	33	22	26	16
Secondary attack rate	9	8	7	6
Doubling time	1	1	0	0
Growth rate (r)	5	3	4	2
Delay - admission to care>death	9	8	7	6
Delay - admission to care>discharge/recovery	12	11	6	6
Delay - generation time	1	1	1	1
Delay - incubation period	49	39	42	32
Delay - infectious period	7	7	5	5
Delay - latent period	4	4	1	1
Delay - other delay (go to section)	55	27	34	20
Delay - serial interval	3	2	3	2
Delay - symptom onset>admission to care	38	33	29	25
Delay - symptom onset>death	16	13	14	11
Delay - symptom onset>discharge/recovery	8	6	6	4
Delay - time in care (length of stay)	15	14	7	7
Mutations – mutation rate	9	6	2	2
Mutations – substitution rate	3	1	3	1
Overdispersion	8	4	7	3
Reproduction number (Basic, R0)	34	25	16	13
Reproduction number (Effective, Re)	25	13	17	8
Risk factors	243	102	180	75
Seroprevalence - IFA	12	9	10	7
Seroprevalence - IgG	27	21	21	18
Seroprevalence - Unspecified	13	13	9	9
Severity - case fatality rate (CFR)	116	77	86	56
Beta - per capita contact rate per unit of time	7	6	7	6

Table B.4: Total parameters extracted and the total number of papers these parameters were extracted from. Middle column includes all parameters. Right column only includes those papers that scored higher than 0.5 for quality assessment (see Table A.2).

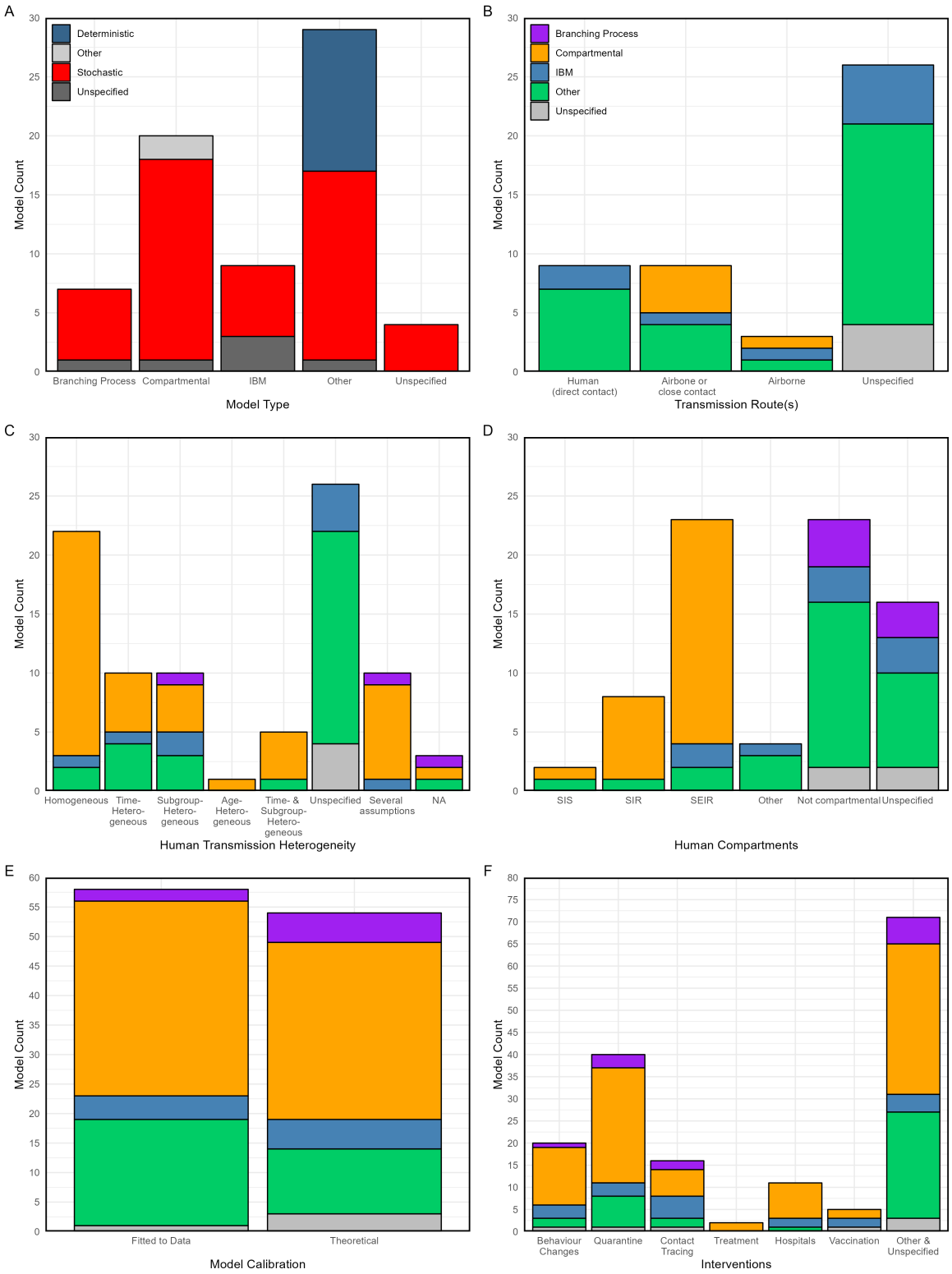

Figure B.3: Total published SARS transmission models separated by (A) model type, (B) routes of transmission considered, (C) transmission assumptions, (D) compartmental model form, (E) how the model was calibrated, (F) interventions directly modelled/considered. NA results are not plotted.

Model Type	# Deterministic	# Stochastic	# Unspecified	# Both
Agent / Individual based	0	6	3	0
Agent / Individual based;Branching process	0	0	1	0
Branching process	0	6	1	0
Compartmental	43	17	1	2
Compartmental;Other	1	0	0	0
Other	11	16	0	0
Unspecified	0	4	0	0

Table B.5: Total number of models extracted by model type and if the model is deterministic or stochastic. The model type and classification are extracted as stated in the paper.

B.3 Extraction Fields

B.3.1 Model extraction fields

Data field	Expected data type	Variable name	Notes
Article ID	integer	article_id	ID to connect to article form
Model data ID	integer	model_data_id	ID assigned by database
Model type	character	model_type	General type of model - from dropdown list
Stochastic or deterministic	character	stoch_deter	Stochastic or deterministic model as reported
Transmission route	character	transmission_route	Transmission route(s) modelled - from dropdown list
Assumptions	character	assumptions	General assumptions for the model - from dropdown list
Compartmental type	character	compartmental_type	Specific type of compartmental model - from dropdown list
Theoretical model	logical	theoretical_model	Tick box whether the model was fitted to data (TRUE) or just theoretical (NA)
Intervention type	character	interventions_type	Type of intervention(s) modelled - from dropdown list
Code available	logical	code_available	Tick box whether code for model was publicly available and reported in the paper

Table B.6: Model form fields: refer to epireview in Supplement C for dropdown options.

B.3.2 Parameter extraction fields

Data field	Expected data type	Variable name	Notes
Article ID	integer	article_id	ID to connect to article form
Parameter data ID	integer	parameter_data_id	ID assigned by database
Parameter type	character	parameter_type	Category of parameter - see dropdown list
Parameter value	numeric	parameter_value	Central parameter value
Parameter exponent	integer	exponent	Parameter value exponent (base 10)
Inverse parameter	logical	inverse_param	Tick box to indicate that only inverse of parameter is reported (e.g., recovery rate from fitted model instead of infectious period)
Parameter unit	character	parameter_unit	Units for parameter value, applies to central estimate and ranges/uncertainty intervals - see dropdown list
Parameter value type	character	parameter_value_type	Type of central parameter value - see dropdown list
Parameter lower bound	numeric	parameter_lower_bound	Lower bound of the parameter range if a range was reported or if data are disaggregated
Parameter upper bound	numeric	parameter_upper_bound	Upper bound of the parameter range if a range was reported or if data are disaggregated
Parameter uncertainty - single type	character	parameter_uncertainty_singe_type	Type of uncertainty fpr central parameter value if single value was reported - see dropdown list
Parameter uncertainty - single value	numeric	parameter_uncertainty_single_value	Value for uncertainty for central parameter value if a single value was reported

Distribution type	logical	distribution_type	Type of distribution for estimated parameter - see dropdown list
First distribution parameter type	logical	distribution_par1_type	Type of value for first distribution parameter - see dropdown list
First distribution parameter value	logical	distribution_par1_value	Value for first distribution parameter (e.g. shape or scale parameter for a gamma distribution)
First distribution parameter uncertainty	logical	distribution_par1_uncertainty	Tick box for whether uncertainty is estimated for the first distribution parameter (TRUE) or not (FALSE)
Second distribution parameter type	logical	distribution_par2_type	Type of value for second distribution parameter - see dropdown list
Second distribution parameter value	logical	distribution_par2_value	Value for second distribution parameter (e.g. shape or scale parameter for a gamma distribution)
Second distribution parameter uncertainty	logical	distribution_par2_uncertainty	Tick box for whether uncertainty is estimated for the second distribution parameter (TRUE) or not (FALSE)
Disaggregated data available	logical	method_disaggregated	Tick box if disaggregated estimates are available (TRUE) or not (FALSE)
Parameter estimates disaggregated by	character	method_disaggregated_by	Categories for disaggregation of parameter estimates
Only disaggregated data available	logical	method_disaggregated_only	Tick box if ONLY disaggregated estimates are available (TRUE) or if a central estimate is also available (FALSE)
Is parameter from supplement?	logical	method_from_supplement	Tick box for whether parameter was extracted from supplement (TRUE) or not (FALSE)
Is parameter in a figure only?	logical	parameter_fromfigure	Tick box to indicate that parameter is plotted in a figure but not reported numerically in the text/table, and thus could not be extracted
Study population country	character	population_country	Country of the survey population - see dropdown list
Study population location	character	population_location	Region/district/province/city of the survey population - see dropdown list
Start day of study	integer	population_study_start_day	Study start day
Start month of study	character	population_study_start_month	Study start month - see dropdown list
Start year of study	integer	population_study_start_year	Study start year - see dropdown list
End day of study	integer	population_study_end_day	Study end day
End month of study	character	population_study_end_month	Study end month - see dropdown list
End year of study	integer	population_study_end_year	Study end year - see dropdown list
Survey timing related to outbreak	character	method_moment_value	Timing of the survey in relation to the outbreak, if specified in paper - see dropdown list
Study population sample size	integer	population_sample_size	Sample size of the population used for parameter estimation
Study population minimum age (years)	numeric	population_age_min	Minimum age of the survey population in years
Study population maximum age (years)	numeric	population_age_max	Maximum age of the survey population in years
Sex of study population	character	population_sex	Sex of survey population - see dropdown list
Population sample setting	character	population_sample_type	General setting of the survey - see dropdown list
Population group	character	population_group	Specific group of the survey population - see dropdown list
Genome site	character	genome_site	Site of genome or gene studied
Genomic sequence available?	logical	genomic_sequence_available	Tick box whether genomic sequence data are available (TRUE) or not (FALSE)
Reproduction number pathway	character	r_pathway	Transmission pathway that reproduction number is based on for vector-borne diseases
Method to estimate R	character	method_r	Method used for estimation of the reproduction number - see dropdown list
Other delay start point	character	other_delay_start	Start point for delays not in the parameter type dropdown list (e.g., delay from ... to ...)
Other delay end point	character	other_delay_end	End point for delays not in the parameter type dropdown list (e.g., delay from ... to ...)

Numerator	integer	cfr_ifr_numerator	Numerator of either CFR/IFR (deaths) or seroprevalence (number seropositive) estimates
Denominator	integer	cfr_ifr_denominator	Denominator of either CFR/IFR (cases) or seroprevalence (number tested) estimates
Is the CFR/IFR estimate adjusted?	character	cfr_ifr_method	Is the CFR/IFR estimate adjusted, unadjusted, or unspecified - see dropdown list
Outcome for risk factor(s)	character	riskfactor_outcome	Outcome for risk factor(s) - see dropdown list
Risk factor name	character	riskfactor_name	Risk factor name - see dropdown list
Risk factor occupation	character	riskfactor_occupation	If risk factor is an occupation, then specified occupation as risk factor - see dropdown list
Risk factor adjusted	character	riskfactor_adjusted	Adjustment status of risk factor(s)- see dropdown list
Risk factor significant	character	riskfactor_significant	Statistical significance of risk factor(s) - see dropdown list
Parameter class	character	parameter_class	General parameter class (delays, seroprevalence, reproduction numbers, mutations, severity, risk factors, relative contribution)
Uncertainty	character	uncertainty	Formatted uncertainty range from 'parameter_uncertainty_lower_value' and 'parameter_uncertainty_lower_value' in format x - x for ranges and x, x for confidence or credible intervals
Survey year	character	survey_year	Dates of survey in format YYYY, YYYY-YYYY, MMM YYYY, or MMM-MMM YYYY from survey start and end variables

Table B.7: Parameter form fields: refer to epireview in Supplement C for dropdown options.

B.4 Extracted Data

This section provides all extracted parameter and model data.

B.4.1 Transmission parameters

Table B.8 lists all extracted transmission parameters, in order of:

1. Basic Reproduction Numbers (R_0)
2. Effective Reproduction Numbers (R_e)
3. Growth rates
4. Overdispersion parameters
5. Beta (per capita contact rate per unit of time)
6. Attack rates
7. Secondary attack rates
8. Mutation rates
9. Substitution rates

Parameter	Uncertainty	Disaggregated By	Gene	Method	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
Reproduction Number R0										
0.2				Empirical (Contact Tracing)	212	Vietnam	26 Feb 2003 - 28 Apr 2003	Contact	Mixed Groups	Tuan (2007)
0.58	IQR: 0.24-1.18			Unspecified		Canada				Chowell (2004)
1.1				Growth Rate		Canada, Hong Kong SAR, China, Singa-pore	2003 - 25 Apr 2003	Population		Chowell (2003)
1.1	IQR: 0.44-2.29			Unspecified		Hong Kong SAR, China				Chowell (2004)
1.17	IQR: 0.47-2.47			Unspecified		Singapore				Chowell (2004)
1.2				Growth Rate		Hong Kong SAR, China				Massad (2005)
1.32				Growth Rate		Canada				Massad (2005)
1.5		Region		Compartmental Model		Canada	25 Feb 2003 - 6 Apr 2003	Unspecified	Unspecified	Choi (2003b)
1.63	90% CI: 0.54-2.65			Branching Process	57	Singapore	25 Feb 2003 - 22 Mar 2003			Lloyd-Smith (2005)
1.88	95% CI: 1.85-1.91			Compartmental Model		Taiwan, China	25 Feb 2003 - 25 Jun 2003	Unspecified	Unspecified	Wang (2012)
1.88				Branching Process	33	China	2003	Hospital		Lloyd-Smith (2005)
2.09				Next Generation Matrix		Singapore	25 Mar 2003 - 27 Apr 2003	Population	General Population	He (2023)
2.1				Growth Rate		Hong Kong SAR, China	17 Mar 2003 - 15 May 2003	Population	General Population	Zhou (2003)
2.16				Compartmental Model		China	21 Apr 2003 - 24 May 2003	Population	General Population	Wang (2003)
1.0698 - 3.2524				Compartmental Model		China	27 Apr 2003 - 10 Jun 2003	Population	General Population	Wang (2004c)
2.23				Compartmental Model	671	Taiwan, China		Population	General Population	Bombardt (2006)
1.5 - 3						Canada, Hong Kong SAR, China, Singa-pore, Taiwan, China		Unspecified		Glass (2007)
2.37				Compartmental Model		China	19 Apr 2003 - 21 Jun 2003	Population	Persons Under Investigation	Wang (2006a)
2.21 - 2.53		Time		Compartmental Model		Canada	23 Feb 2003 - 11 Jun 2003	Unspecified	Unspecified	Wang (2012)
2.65	90% CI: 0.57-12.45					Taiwan, China	29 Apr 2003 - 8 May 2003	Hospital	Persons Under Investigation	Liao (2008)
2.65	Normal-Log var: 2.55			Other		Taiwan, China	24 Apr 2003 - 8 May 2003	Unspecified	Unspecified	Chen (2006b)

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Parameter	Uncertainty	Disaggregated By	Gene	Method	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
2.7				Growth Rate		Singapore	17 Mar 2003 - 15 May 2003	Population	General Population	Zhou (2003)
2.7	95% CI: 2.2-3.7			Compartmental Model	1512	Hong Kong SAR, China	3 Mar 2003 - 6 May 2003	Mixed	Mixed Groups	Riley (2003)
2.2 - 3.6		Other, Time		Growth Rate	425		15 Feb 2003 - 28 Mar 2003	Mixed	Persons Under Investigation	Lipsitch (2003)
2 - 4				Other		Hong Kong SAR, China				Fraser (2004)
3.5256				Compartmental Model		Canada	25 Mar 2003 -	Population	Persons Under Investigation	Ding (2004)
3.567				Compartmental Model		Hong Kong SAR, China	17 Mar 2003 - 1 Apr 2003	Population	Persons Under Investigation	Ding (2004)
1.5402 - 5.6304		Region		Growth Rate		China, Hong Kong SAR, China, Singapore, Taiwan, China		Unspecified	Unspecified	Zhang (2004)
3.8				Growth Rate		China	17 Mar 2003 - 15 May 2003	Population	General Population	Zhou (2003)
3.88	Standard Deviation: 0.09			Compartmental Model	1755	Hong Kong SAR, China	15 Feb 2003 - 24 Jul 2003	Unspecified	Unspecified	Lekone (2008)
4.4544				Compartmental Model		Singapore	8 Mar 2003 -	Population	Persons Under Investigation	Ding (2004)
4.587436164				Next Generation Matrix		Canada, Hong Kong SAR, China		Population	General Population	Ruan (2006)
2.02 - 23.95	95% CI: 1.83-49.27	Region		Branching Process	716	Hong Kong SAR, China, Singapore	15 Feb 2003 - 25 Mar 2003	Population	General Population	Moser (2015)
0.595 - 176		Method		Next Generation Matrix	390	Hong Kong SAR, China	11 Mar 2003 - 31 Jul 2003	Hospital	Mixed Groups	Kwok (2007)
Reproduction Number Re										
0.001				Compartmental Model	1755	Hong Kong SAR, China	15 Feb 2003 - 24 Jul 2003	Unspecified	Unspecified	Lekone (2008)
0.1				Compartmental Model		China	19 Apr 2003 - 21 Jun 2003	Population	Persons Under Investigation	Wang (2006a)
0.28				Branching Process	43	China	2003	Hospital		Lloyd-Smith (2005)
0.3	95% CI: 0.1-0.7			Branching Process		Vietnam	12 Mar 2003 - Jul 2003	Population	General Population	Wallinga (2004)

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Parameter	Uncertainty	Disaggregated By	Gene	Method	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
0.13 - 0.5				Empirical (Contact Tracing)	2658	China	2003	Household	Unspecified	Pitzer (2007)
0.14 - 1		Time			1512	Hong Kong SAR, China	3 Mar 2003 - 6 May 2003	Mixed	Mixed Groups	Riley (2003)
0.68				Branching Process	114	Singapore	22 Mar 2003			Lloyd-Smith (2005)
0.7	95% CI: 0.7-0.8			Branching Process		Hong Kong SAR	12 Mar 2003 - Jul 2003	Population	General Population	Wallinga (2004)
0.7	95% CI: 0.6-0.9			Branching Process		Singapore	12 Mar 2003 - Jul 2003	Population	General Population	Wallinga (2004)
0.75	95% CrI: 0.65-0.85			Compartmental Model	354	China	Feb 2003 - May 2003	Unspecified	Persons Under Investigation	McBryde (2006)
0.861	Standard Deviation: 0.413			Compartmental Model			24 Mar 2003 - 2 May 2023			Feng (2009a)
1.4937 - 0.2485		Time		Growth Rate		China	21 Apr 2003 - 12 May 2003	Population	Persons Under Investigation	Zhang (2007)
0.95	95% CI: 0.67-1.23			Branching Process		Canada, Singapore	23 Feb 2003 - 11 May 2003	Hospital	Persons Under Investigation	Chowell (2015)
1	95% CI: 0.9-1.2			Branching Process		Canada	12 Mar 2003 - Jul 2003	Population	General Population	Wallinga (2004)
1.2849				Compartmental Model		Singapore	- 1 Apr 2003	Population	Persons Under Investigation	Ding (2004)
1.3901				Compartmental Model		Canada	- 15 Apr 2003	Population	Persons Under Investigation	Ding (2004)
1.7068				Compartmental Model		Hong Kong SAR, China	1 Apr 2003 - 14 Apr 2003	Population	Persons Under Investigation	Ding (2004)
2.4	95% CI: 1.8-3.1			Branching Process		Vietnam	Feb 2003 - 11 Mar 2003	Population	General Population	Wallinga (2004)
2.7	95% CI: 1.8-3.6			Branching Process		Canada	Feb 2003 - 11 Mar 2003	Population	General Population	Wallinga (2004)
3.1	95% CI: 2.3-4			Branching Process		Singapore	Feb 2003 - 11 Mar 2003	Population	General Population	Wallinga (2004)
3.16	Standard Deviation: 2.25			Compartmental Model		Hong Kong SAR, China	24 Feb 2003 - 24 Mar 2003			Feng (2009a)
3.5	90% CrI: 1.5-7.7	Time		Growth Rate	425					Lipsitch (2003)
3.6	95% CI: 3.1-4.2			Branching Process		Hong Kong SAR	Feb 2003 - 11 Mar 2003	Population	General Population	Wallinga (2004)
4.23						Taiwan, China	6 May 2003 - 4 Jun 2003			Hsieh (2004)
4.8	95% CrI: 2.2-8.8			Compartmental Model	354	China	Feb 2003 - May 2003	Unspecified	Persons Under Investigation	McBryde (2006)
Growth Rate										
0.013 - 0.0713		Time		Growth Rate		China	21 Apr 2003 - 12 May 2003	Population	Persons Under Investigation	Zhang (2007)
0.09						Hong Kong SAR, China	17 Mar 2003 - 15 May 2003	Population	General Population	Zhou (2003)
0.12						Singapore	17 Mar 2003 - 15 May 2003	Population	General Population	Zhou (2003)

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Parameter	Uncertainty	Disaggregated By	Gene	Method	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
0.16						China	17 Mar 2003 - 15 May 2003	Population	General Population	Zhou (2003)
0.142 - 0.859 per day					250	Canada	23 Feb 2003 - 12 Jun 2003	Community		Hsieh (2006a)
Overdispersion										
$2.6311\ 10^{-11}$	Standard Deviation: $14.077\ 10^{-11}$			Compartmental Model	2048	China	20 Apr 2003 - 4 Jun 2003	Hospital	Persons Under Investigation	Kong (2016)
$1.1882\ 10^{-5}$	Standard Deviation: 0.575 10^{-5}			Compartmental Model	2048	China	7 Mar 2003 - 20 Apr 2003	Hospital	Persons Under Investigation	Kong (2016)
0.0062				Branching Process	43	China	2003	Hospital		Lloyd-Smith (2005)
0.071	90% CI: 0.049-0.41			Branching Process	114	Singapore	22 Mar 2003			Lloyd-Smith (2005)
0.12	90% CI: 0.08-0.42			Branching Process	33	China	2003	Hospital		Lloyd-Smith (2005)
0.16	90% CI: 0.11-0.64			Branching Process	57	Singapore	25 Feb 2003 - 22 Mar 2003			Lloyd-Smith (2005)
0.2	95% CI: 0.13-0.27			Branching Process		Canada	23 Feb 2003 - 11 May 2003	Hospital	Persons Under Investigation	Chowell (2015)
331 mnc	95% CI: 295-331 mnc				331	Hong Kong SAR, China	18 Mar 2003 - 20 Mar 2003	Housing		Riley (2003)
Beta										
0.062 Unspecified					1512	Hong Kong SAR, China	3 Mar 2003 - 6 May 2003	Mixed	Mixed Groups	Riley (2003)
0 - 1.49 per day 10^{-1}		Time		Compartmental Model		Hong Kong SAR, China	14 Feb 2003 - 3 Jun 2003			Mubayi (2021)
0.149	Standard Deviation: 0.003			Compartmental Model	1755	Hong Kong SAR, China	15 Feb 2003 - 24 Jul 2003	Unspecified	Unspecified	Lekone (2008)
0.347 per day	95% CI: 0.3108-0.3837 per day				461	Taiwan, China	25 Feb 2003 - 25 Jun 2003	Population	General Population	Hsieh (2007)
0.5459 per day	Standard Deviation: 0.0335 per day			Compartmental Model	2048	China	7 Mar 2003 - 4 Jun 2003	Hospital	Persons Under Investigation	Kong (2016)
0.68						Singapore	2003	Population		Chowell (2003)
0.75						Hong Kong SAR, China	2003	Population		Chowell (2003)
Attack Rate										
0		Other			363	China	2003 - 23 May 2023	Contact	Persons Under Investigation	Zeng (2009)
0 %	95% CI: 0-26.4 %	Other				China, Hong Kong SAR, China, Taiwan, China		Travel	Persons Under Investigation	Olsen (2003)

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Parameter	Uncertainty	Disaggregated By	Gene	Method	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
0 %	95% CI: 0-40.2 %	Other				China, Hong Kong SAR, China, Taiwan, China		Travel	Persons Under Investigation	Olsen (2003)
8.9 10^{-5}						Hong Kong SAR, China	Mar 2003 - Jun 2003	Population	General Population	Leung (2004c)
18.6 10^{-5}		Age, Sex				China	8 Mar 2003 - 28 May 2003	Population	General Population	Liang (2007)
28.3 10^{-5}		Region			632683	China	14 Mar 2003 - 22 May 2003	Population	General Population	Liang (2003)
21.993 per 10k		Region				China	1 Mar 2003 - 16 Aug 2003	Population	General Population	Liu (2005)
465 10^{-5}						China	5 Mar 2003 - 20 May 2003	Hospital	Healthcare Workers	Liang (2004)
0.25 - 0.88 %		Time			8662	Canada	23 Feb 2003 - 2 Jul 2003	Population	General Population	Rea (2007)
0.61 %		Time			40	Hong Kong SAR, China	25 Mar 2003 - 31 Mar 2003	Hospital	Healthcare Workers	Ho (2003)
0.7 %	95% CI: 0.54-0.9 %				8662	Canada	23 Feb 2003 - 2 Jul 2003	Population	General Population	Rea (2007)
0.68 - 0.72 %		Sex			8662	Canada	23 Feb 2003 - 2 Jul 2003	Population	General Population	Rea (2007)
1 %	95% CI: 0.8-1.1 %				23103	Canada	23 Feb 2003 - 1 Jul 2003	Population	General Population	Svoboda (2004)
0.42 - 1.68 %		Age			8662	Canada	23 Feb 2003 - 2 Jul 2003	Population	General Population	Rea (2007)
1.2 %		Occupation, Region, Time			339	Hong Kong SAR, China	4 Mar 2003 - 31 May 2003	Hospital	Healthcare Workers	Lau (2004a)
0.39 - 2.45 %		Other			8662	Canada	23 Feb 2003 - 2 Jul 2003	Population	General Population	Rea (2007)
4.5 %		Other			402	China	14 Mar 2003 - 22 May 2003	Contact	Healthcare Workers	Liang (2003)
0 - 10.36 %		Level of Exposure			8662	Canada	23 Feb 2003 - 2 Jul 2003	Population	General Population	Rea (2007)
6.3 %	95% CI: 5.3-7.3 %	Other				China		Contact	Other	Pang (2003)
6.7 %	95% CI: 0.6-14 %				212	Vietnam	26 Feb 2003 - 28 Apr 2003	Contact	Mixed Groups	Tuan (2007)
7.1 %					742	Hong Kong SAR, China		Hospital	Healthcare Workers	Ip (2004)
7.4 %		Region			474	China	14 Mar 2003 - 22 May 2003	Contact	Persons Under Investigation	Liang (2003)
9.7 %		Other			1140	China	16 Apr 2003 - 12 May 2003	Hospital	Mixed Groups	Wang (2006b)
10 %		Other			70	Singapore	5 Apr 2023 -	Hospital	Mixed Groups	Tan (2004)
11.2 %	95% CI: 9.4-13 %	Age				China		Contact	Other	Pang (2003)
0 - 32.5 %		Other				Singapore	1 Mar 2003 - 31 May 2003	Hospital	Healthcare Workers	Chen (2006f)
16.4 %		Other			110	China	15 Mar 2003 -	Travel	General Population	Lei (2018)
0 - 33.3 %		Other				Singapore	1 Mar 2003 - 31 May 2003	Hospital	Persons Under Investigation	Chen (2006f)
6.3 - 28.8		Other			669	China	2003 - 23 May 2023	Contact	Persons Under Investigation	Zeng (2009)
23.1 %		Other			65	Hong Kong SAR, China	4 Mar 2003 - 10 Mar 2003	Hospital	Healthcare Workers	Wong (2004)
10.3 - 60 %		Occupation				Canada	14 Mar 2003 - 15 Apr 2003	Hospital	Healthcare Workers	Varia (2003)

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Parameter	Uncertainty	Disaggregated By	Gene	Method	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
40.5 %		Other, Time			74	Hong Kong SAR, China	4 Mar 2003 - Mar 2003	Hospital	Persons Under Investigation	Yu (2005)
57 %					80	Singapore	Apr 2003 - Jun 2003	Hospital	Healthcare Workers	Wilder-Smith (2005)
Secondary Attack Rate										
4.2 %	95% CI: 1.5-7 %				212	Vietnam	26 Feb 2003 - 28 Apr 2003	Contact	Mixed Groups	Tuan (2007)
6.2 %	95% CI: 3.9-8.6 %				417	Singapore	24 Feb 2003 - 29 Apr 2003		Other	Goh (2004)
8 %		Other, Time			2139	Hong Kong SAR, China	4 Apr 2003 - 10 Jun 2003	Population	Household Contacts Of Survivors	Lau (2004c)
8.8 %		Other			697	Hong Kong SAR, China	28 Feb 2003 - 8 Jun 2003	Household	Household Contacts Of Survivors	Chan (2004b)
10.2 %	95% CI: 6.7-23.5 %				176	Canada	25 May 2003 - 31 Oct 2003	Household	Persons Under Investigation	Wilson-Clark (2006)
14.9 %	95% CI: 12.6-17.4 %	Other, Time			881	Hong Kong SAR, China	4 Apr 2003 - 10 Jun 2003	Household	General Population	Lau (2004c)
18.7 %		Occupation			193	Vietnam	26 Feb 2003 - 24 Mar 2003	Hospital	Healthcare Workers	Reynolds (2006)
19 %					31	Canada	23 Mar 2003 -	Hospital	Healthcare Workers	Scales (2003)
18.5 - 66.7 %		Other			77	China	5 Feb 2003 - 4 May 2003	Contact	Persons Under Investigation	Shen (2004)
Mutation Rate										
8.26 Unspecified 10^{-6}	SD_s: 2.16 Unspecified 10^{-6}				61	China	31 Jan 2003 -	Unspecified	Unspecified	MEC (2004)
0.42 - 2.38 s/s/y 10^{-3}		Method, Region			16	China, Hong Kong SAR, China, Singapore	14 Apr 2003 - 29 Aug 2003	Unspecified	Persons Under Investigation	Zhao (2004)
0.121 %					33			Unspecified	Unspecified	Wang (2004b)
0.636 %					33			Unspecified	Unspecified	Wang (2004b)
0.079 - 3.333 %		Other			33			Unspecified	Unspecified	Wang (2004b)
8 Unspecified 10^{-6}			Synonymous; multiple sites comprising 91.25		33			Unspecified	Unspecified	Wang (2004b)
4.3 Unspecified 10^{-6}			whole genome		12	Singapore	- 2003	Unspecified	Unspecified	Vega (2004)
5.7 Unspecified 10^{-6}			whole genome		6	Singapore	- 2003	Unspecified	Unspecified	Vega (2004)
0.11 - 0.07 m/g/g			whole genome		10	Taiwan, China	Mar 2003 - Jun 2003	Mixed	Persons Under Investigation	Yeh (2004)
Substitution Rate										

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Parameter	Uncertainty	Disaggregated By	Gene	Method	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
0.8 - 2.38 s/s/y 10^{-3}					11	Hong Kong SAR, China, Singapore	14 Apr 2003 - 29 Aug 2003	Unspecified	Persons Under Investigation	Zhao (2004)
0.81 - 9.22 s/s/y 10^{-3}		Other	non-synonymous sites		16	China, Hong Kong SAR, China, Singapore	14 Apr 2003 - 29 Aug 2003	Unspecified	Persons Under Investigation	Zhao (2004)
0 - 8.5 s/s/y 10^{-3}		Other	synonymous sites		16	China, Hong Kong SAR, China, Singapore	14 Apr 2003 - 29 Aug 2003	Unspecified	Persons Under Investigation	Zhao (2004)

Table B.8: Transmission parameters grouped by parameter type. Study characteristics are reported for each parameter estimate. Note that s/s/y stands for nucleotide substitutions per site per year and m/g/g stands for mutations per genome per generation. If an exponent is stated for the parameter value the same exponent applies for the uncertainty parameters (without stating it again).

B.4.2 Models

Table B.9 lists all extracted transmission models, in order of:

1. Agent / individual based models
2. Branching process models
3. Compartmental models
4. Other / unspecified models

Transmission Route(s)	Human Transmission Heterogeneity	Human Compartments	Fitted	Interventions	Source
Agent / Individual based - NA					
Human-Human	Age, Groups		Fitted	Behaviour Changes, Vaccination	Pourbohloul (2005)
	Unspecified		Theoretical	Hospitals, Other, Quarantine	Huang (2010)
			Fitted	Behaviour Changes	Durham (2012)
Agent / Individual based - Stochastic					
Human-Human	Groups	SEIR	Theoretical	Contact Tracing	Duan (2013)
			Fitted	Contact Tracing, Quarantine	Fraser (2004)
	Groups	Other	Theoretical	Behaviour Changes, Contact Tracing, Hospitals, Other, Quarantine	Hsieh (2006b)
	Time		Fitted		Xiao (2017)
		SEIR	Theoretical	Contact Tracing, Other	Duan (2021)
			Theoretical	Contact Tracing, Vaccination	Xu (2009)
Agent / Individual based;Branching process - NA					
	Time		Theoretical	Other, Quarantine	Peak (2017)
Branching Process					
			Fitted		Li (2004)
	Groups		Fitted	Contact Tracing, Other, Quarantine	Lloyd-Smith (2005)
	Groups		Theoretical		Nandi (2018)
	Unspecified		Theoretical		Wallinga (2004)
	Unspecified		Theoretical		Goubar (2009)
			Theoretical	Quarantine	Klinkenberg (2006)
Branching process - NA					
Human-Human			Theoretical	Behaviour Changes, Contact Tracing, Other, Quarantine	Becker (2005)
Compartmental - Deterministic					
Human-Human		SIR	Fitted		Choi (2003b)
Human-Human		SEIR	Theoretical		Ruan (2006)
Human-Human		SEIR	Theoretical	Contact Tracing, Quarantine	Nishiura (2004)
Human-Human		Other	Fitted	Quarantine	Nishiura (2009)
Human-Human		Other	Fitted		Nishiura (2009)
Human-Human		Other	Fitted		Ng (2003)
Human-Human		Other	Theoretical	Contact Tracing, Quarantine	Mubayi (2010)
Human-Human		Other	Theoretical	Behaviour Changes, Other	Zhang (2007)
Human-Human			Fitted	Other	Denphedtnong (2013)
Human-Human	Age	SIR	Fitted	Contact Tracing, Other, Quarantine	Huo (2015)
Human-Human	Time	Other	Fitted	Other, Quarantine	Ding (2004)
Human-Human	Time, Unspecified	Other	Fitted	Quarantine	Zhou (2004)
Human-Human	Unspecified	Other	Fitted	Hospitals	Zhang (2004)
Human-Human	Unspecified	Other	Theoretical	Quarantine	Zhang (2005)
Human-Human		SIR	Theoretical		Khatua (2020)
Human-Human		SEIR	Theoretical		Jana (2020)
		SIR	Fitted		Mubayi (2021)
		SEIR	Fitted	Quarantine	Bombardt (2006)
		SEIR	Theoretical	Other, Quarantine	Yan (2008)
		SEIR	Theoretical	Other, Quarantine	Safi (2010)
		Other	Theoretical	Quarantine	Gumel (2004)
			Theoretical	Quarantine, Vaccination	Siriprapaiwan (2018)
	Age, Groups		Fitted	Behaviour Changes	Chowell (2003)
	Groups	Other	Theoretical	Hospitals, Quarantine	Brauer (2015)
	Groups	Other	Fitted	Hospitals	He (2023)
	Groups,	Other	Theoretical	Behaviour Changes, Quarantine	Hsu (2007)

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Transmission Route(s)	Human Transmission Heterogeneity	Human Compartments	Fitted	Interventions	Source
	Groups,	Other	Theoretical	Behaviour Changes, Quarantine	Hsu (2006)
	Groups, Time	Other	Fitted	Behaviour Changes	Kwok (2007)
	Time	SEIR	Fitted	Other	Wang (2006a)
	Time	Other	Fitted	Behaviour Changes, Quarantine	Wang (2004c)
	Time	Other	Theoretical	Quarantine	McLeod (2006)
	Unspecified	SIR	Fitted		Wang (2012)
	Unspecified	SIR	Fitted		Hirose (2012)
	Unspecified	SEIR	Theoretical		Alvarez (2015)
	Unspecified	SEIR	Theoretical	Other, Quarantine	Cantun-Avila (2021)
	Unspecified	Other	Theoretical	Behaviour Changes, Contact Tracing, Vaccination	Gjorgjieva (2005)
	Unspecified	Other	Theoretical	Quarantine	Zhu (2008)
	Unspecified	Other	Theoretical	Behaviour Changes	Wang (2015)
	Unspecified	Other	Theoretical	Behaviour Changes, Quarantine	Safi (2011)
	Unspecified	Other	Theoretical		Naheed (2014)
		SEIR	Fitted		Kong (2016)
		Other	Fitted		Hsieh (2004)
		Other	Fitted	Hospitals, Quarantine	Feng (2009a)
Compartmental - Deterministic;Stochastic					
Human-Human	Groups, Time	SIR	Fitted	Other	Zong-Mao (2012)
	Time	SEIR	Theoretical	Hospitals	Fukutome (2007)
Compartmental - NA					
	Groups, Time	Other	Theoretical	Hospitals, Quarantine	Webb (2004)
Compartmental - Stochastic					
Human-Human		SEIR	Fitted	Behaviour Changes, Other	Nishiura (2005)
Human-Human		Other	Theoretical	Contact Tracing, Quarantine, Treatment	Bogaards (2007)
Human-Human		SIS	Fitted	Behaviour Changes, Treatment	Aya (2018)
Human-Human	Groups	SEIR	Theoretical	Behaviour Changes, Contact Tracing, Other, Quarantine	Lloyd-Smith (2003)
Human-Human	Time	SEIR	Fitted		Lekone (2008)
Human-Human		SEIR	Fitted		Drake (2006)
		SEIR	Fitted		Lai (2013)
		Other	Fitted	Quarantine	Colizza (2007)
	Groups	SEIR	Theoretical		Nandi (2018)
	Groups	SEIR	Theoretical		Hollingsworth (2007)
	Groups, Time	Other	Fitted	Behaviour Changes, Hospitals, Other	Riley (2003)
	Groups, Time	Other	Fitted		McBryde (2006)
	Time	SEIR	Fitted		Cori (2009)
	Unspecified	Other	Fitted		Brockmann (2013)
	Unspecified	Other	Theoretical	Hospitals	Colizza (2008)
		Other	Fitted	Quarantine	Lipsitch (2003)
		SIR, SIS	Theoretical		Maeno (2010)
Compartmental;Other - Deterministic					
		Other	Fitted	Hospitals, Quarantine	Hsieh (2007)
Other - Deterministic					
Human-Human			Fitted		Yoneyama (2012)
Human-Human	Unspecified		Fitted		Zhang (2004)
	Groups, Time	Other	Theoretical	Quarantine, Other	Roberts (2004)
	Time	SEIR	Theoretical		Wang (2008)
	Unspecified		Fitted		Wang (2012)
	Unspecified		Fitted	Contact Tracing, Quarantine	Han (2004b)
	Unspecified		Fitted	Behaviour Changes	Wang (2003)
	Unspecified	Other	Fitted		Zhou (2003)
			Fitted		Pitzer (2007)
			Theoretical		Masuda (2004)
			Fitted		Hsieh (2006a)
Other - Stochastic					
Human-Human	Groups		Theoretical		Fujie (2007)
Human-Human	Groups		Theoretical	Quarantine	Fang (2004)
Human-Human	Unspecified		Fitted		Kuk (2009)
Human-Human			Fitted		yip (2008)
Human-Human			Theoretical		Zhen (2007)
		SIR	Theoretical		Liao (2005)
			Theoretical	Other	Glass (2006)
	Groups	SIS	Theoretical	Other	Wan (2008)
	Time		Fitted		Glass (2007)
	Time		Fitted		Chen (2008)
	Unspecified		Fitted	Behaviour Changes, Other, Quarantine	Chan (2006)

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Transmission Route(s)	Human Transmission Heterogeneity	Human Compartments	Fitted	Interventions	Source
	Unspecified		Fitted	Contact Tracing, Quarantine	Liao (2008)
			Fitted	Other	Chen (2006b)
		SEIR	Fitted		Small (2006)
			Theoretical		Cauchemez (2006a)
			Fitted		Cao (2016)
Unspecified - Stochastic					
	Unspecified		Theoretical	Behaviour Changes, Contact Tracing, Quarantine, Vaccination	Krumkamp (2009)
	Unspecified		Theoretical		Campbell (2018)
	Unspecified		Theoretical		Shi (2003)
			Fitted		Cauchemez (2006b)

Table B.9: Characteristics of extracted transmission models.

B.4.3 Natural history

Table B.10 lists all extracted natural history parameters. These are parameters capturing delays from one epidemiological period/event to another. These are given in order of:

1. Incubation period
2. Latent period
3. Infectious period
4. Symptom onset to admission delay
5. Symptomatic period
6. Other delay
7. Generation time
8. Serial interval
9. Admission to recovery delay
10. Admission to death delay
11. Time in Care
12. Symptom onset to recovery
13. Symptom onset to death

Delay (days)	Statistic	Uncertainty	Disaggregated By	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
Incubation Period									
2.4 days	Mean	Other: 1.5 days		17	China	22 Dec 2002 - Mar 2003	Hospital	General Population	Xiao (2003)
3 days	Median	Range: 2-6 days		11	Hong Kong SAR, China	4 Mar 2003 - 10 Mar 2003	Hospital	Persons Under Investigation	Wong (2004)
3.5 days	Mean	SD_s: 3 days	Age, Sex	10	Canada	23 Mar 2003 -	Hospital	Healthcare Workers	Avendano (2003)
3.7 days	Mean	95% CrI: 2.6-5.8 days	Other	302	Hong Kong SAR, China	Feb 2003 - Jul 2003	Hospital	Mixed Groups	Virlogeux (2015)
4 days	Median	Range: 2-10 days		42	Canada	14 Mar 2003 - 15 Apr 2003	Hospital	Persons Under Investigation	Varia (2003)
4 days		Range: 2-8 days		22	Hong Kong SAR, China, Taiwan, China		Travel	Persons Under Investigation	Olsen (2003)
4 days	Median	Range: 1-18 days		19	Canada, Hong Kong SAR, China, United States		Unspecified	Unspecified	Meltzer (2004)
4 days	Median	Range_s: 2-8 days		7	Singapore	Feb 2003 - Mar 2003	Hospital	Mixed Groups	Hsu (2003)
4 days	Median	Range_s: 3-6 days		32	Taiwan, China	17 Apr 2003 - 26 Apr 2003	Hospital	Mixed Groups	Chen (2003)
4 days	Mean	SD_s: 3 days	Age, Sex	4	Canada	23 Mar 2003 -	Hospital	Healthcare Workers	Avendano (2003)
4.09 days	Mean	Range: 0-14 days		16	Hong Kong SAR, China	2003	Hospital	Persons Under Investigation	Tam (2007)
4.4 days	Mean	SD_s: 4.6 days		168	Hong Kong SAR, China		Population	General Population	Lau (2010)
4.6 days	Standard Deviation	95% CrI: 3.6-6 days	Other	234	Hong Kong SAR, China	Feb 2003 - Jul 2003	Hospital	Persons Under Investigation	Virlogeux (2015)
4.6 days	Mean	Variance: 15.9 days		1755	Hong Kong SAR, China		Population	Persons Under Investigation	Leung (2009b)
4.6 days	Mean	95% CI: 3.8-5.8 days		81	Hong Kong SAR, China	15 Feb 2003 - 31 May 2003	Unspecified	Persons Under Investigation	Leung (2004a)
4.7 days	Mean	95% CrI: 4.1-5.4 days	Other	234	Hong Kong SAR, China	Feb 2003 - Jul 2003	Hospital	Persons Under Investigation	Virlogeux (2015)
4.7 days	Mean	Range: 1-12 days		59	Canada	23 Feb 2003 - 1 Jul 2003	Population	General Population	Svoboda (2004)
4.8 days	Mean	95% CrI: 4.2-5.5 days	Other	1453	Hong Kong SAR, China	Feb 2003 - Jul 2003	Hospital	Mixed Groups	Virlogeux (2015)
4.8 days	Median	Other: 3.8 days		46	Taiwan, China	18 Apr 2003 - 31 May 2003	Hospital	Persons Under Investigation	Lim (2003)
4.82 days	Mean	95% CI: 4.23-5.5 days		2658	China	2003	Household		Pitzer (2007)
4.83 days	Mean	Weibull Shape: 1.91 days		198	Singapore	Mar 2003 - Mar 2003	Mixed	Persons Under Investigation	Kuk (2005)
5 days	Mean	Range: 2-10 days		42	Canada	14 Mar 2003 - 15 Apr 2003	Hospital	Persons Under Investigation	Varia (2003)
5 days	Median	Range: 1-15 days		7	Canada	23 Mar 2003 -	Hospital	Healthcare Workers	Scales (2003)
5 days	Mean			249	Taiwan, China	1 Nov 2002 - 31 Dec 2003	Hospital	Persons Under Investigation	Liu (2016)
5 days	Mean	Range: 2-15 days			Singapore		Hospital	Mixed Groups	Leong (2006b)
5 days	Median	Other: 9 days		50	Singapore	25 Feb 2003 - 11 May 2003	Population	Persons Under Investigation	Goh (2006)
5 days			Region		Canada	25 Feb 2003 - 6 Apr 2003	Unspecified	Unspecified	Choi (2003b)

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Delay	Statistic	Uncertainty	Disaggregated By	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
5.1 days	Mean	Standard Deviation: 2.2 days		50	Singapore	25 Feb 2003 - 11 May 2003	Population	Persons Under Investigation	Goh (2006)
5.1 days	Mean	Normal-Log var: 18.3 days	Region	317	Canada, Hong Kong SAR, China		Population	Persons Under Investigation	Cowling (2007)
5.29 days	Mean	Variance: 12.33 days	Age, Occupation, Other, Region, Sex	209	China	2003	Mixed	Persons Under Investigation	Cai (2006)
5.3 days	Mean	Gamma Scale: 0.26 days		85	China	Feb 2003 - May 2003	Unspecified	Persons Under Investigation	McBryde (2006)
3 - 8 days				15	Singapore	24 Mar 2003 - 15 Apr 2003	Hospital	Persons Under Investigation	Chow (2004)
5.7 days	Mean			33	China	5 Feb 2003 - 4 May 2003	Hospital	Persons Under Investigation	Shen (2004)
5.7 days	Mean	SD_s: 9.7 days		97	China		Population	General Population	Lau (2010)
5.9 days	Mean	Standard Deviation: 3.5 days		96	China	30 Jan 2003 - 10 Mar 2003	Hospital	Mixed Groups	Wu (2003)
1 - 11 days	Other		Other	10	Hong Kong SAR, China	22 Feb 2003 - 22 Mar 2003	Contact	Persons Under Investigation	Tsang (2003b)
6 days	Median	Range_s: 1-15 days		98	Taiwan, China	1 Nov 2002 - 31 Dec 2003	Hospital	Healthcare Workers	Liu (2016)
6 days	Median	Range_s: 2-16 days		138	Hong Kong SAR, China	11 Mar 2003 - 25 Mar 2003	Hospital	Persons Under Investigation	Lee (2003)
2 - 10 days				15	Taiwan, China	Apr 2003 - May 2003	Population	Children	Chang (2004b)
6 days	Median	IQR: 3-10 days		144	Canada	7 Mar 2003 - 10 Apr 2003	Hospital	General Population	Booth (2003)
6 days	Mean				China	Apr 2003 -	Unspecified	Unspecified	Zhou (2004)
6.4 days	Mean	95% CI: 5.2-7.7 days		1425	Hong Kong SAR, China	20 Feb 2003 - 28 Apr 2003	Hospital	General Population	Donnelly (2003)
6.9 days	Mean	SD_s: 6.1 days		210	Taiwan, China		Population	General Population	Lau (2010)
2 - 12 days	Other		Level of Exposure		Singapore	28 Feb 2003 - 10 Apr 2003			Hsu (2004)
7 days	Median	Range_s: 4-12 days		13	Singapore	Feb 2003 - Mar 2003	Hospital	Mixed Groups	Hsu (2003)
7.8 days	Mean			595	China	5 Mar 2003 - 20 May 2003	Hospital	Persons Under Investigation	Liang (2004)
10 days				45	Hong Kong SAR, China	Mar 2003 -	Hospital	Healthcare Workers	Cheng (2005b)
10.66 days	Other	95% CI: 9.24-13.68 days		128	Hong Kong SAR, China		Hospital	Persons Under Investigation	Farewell (2005)
11.44 - 11.83 days					Hong Kong SAR, China	17 Mar 2003 - 10 May 2003			Ng (2003)
Latent Period									
4 days	Median	Range: 2-11 days		111	China	16 Apr 2003 - 12 May 2003	Hospital	Mixed Groups	Wang (2006b)
4.49 days	Mean	SD_s: 2.63 days			China		Unspecified	Unspecified	Bombardt (2006)
5 days	Mean				China	19 Apr 2003 - 21 Jun 2003	Population	Persons Under Investigation	Wang (2006a)
6.868132 days	Mean	Range: 4.694836-6.997901 days		2048	China	7 Mar 2003 - 4 Jun 2003	Hospital	Persons Under Investigation	Kong (2016)
Infectious Period									

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Delay	Statistic	Uncertainty	Disaggregated By	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
4 days	Mean				China	19 Apr 2003 - 21 Jun 2003	Population	Persons Under Investigation	Wang (2006a)
0.2064 days	Mean	Standard Deviation: 0.0118 days		2048	China	7 Mar 2003 - 4 Jun 2003	Hospital	Persons Under Investigation	Kong (2016)
5 - 10 days	Unspecified				Hong Kong SAR, China				Fraser (2004)
8.3 days		95% CI: 5.8-14.3 days			Singapore	2003			Drake (2006)
9.3 days	Mean	95% CrI: 8.6-9.9 days		1467	Hong Kong SAR, China	Mar 2003 - Jul 2003	Hospital	Persons Under Investigation	Cori (2009)
12.5 days	Mean	SD_s: 5.6 days			Hong Kong SAR, China		Unspecified	Unspecified	Bombardt (2006)
21.6 days	Median	95% CI: 14.9-26.8 days							Peak (2017)
Onset - Admission									
2 days	Mean			98	Taiwan, China	1 Nov 2002 - 31 Dec 2003	Hospital	Healthcare Workers	Liu (2016)
2.4 days	Mean	Standard Deviation: 1.8 days		142	Hong Kong SAR, China	2003	Hospital	Persons Under Investigation	Cheng (2004)
2.7 days	Mean				China		Population	General Population	Lau (2010)
2.7 days	Mean			40	Hong Kong SAR, China	25 Mar 2003 - 5 May 2003	Hospital	Healthcare Workers	Ho (2003)
2.8 days	Mean				Taiwan, China		Population	General Population	Lau (2010)
2.8 days	Mean			303	Hong Kong SAR, China	1 Jun 2004 - 31 Dec 2004	Hospital	Persons Under Investigation	Lee (2006b)
2.89 days	Mean	SD_s: 2.1 days					Unspecified	Unspecified	Bombardt (2006)
2.9 days	Mean	Standard Deviation: 2 days		96	China	30 Jan 2003 - 10 Mar 2003	Hospital	Mixed Groups	Wu (2003)
3 days	Median	Range: 1-12 days		76	Taiwan, China	8 Mar 2003 - 15 Jun 2003	Hospital	Persons Under Investigation	Wang (2004a)
3 days	Median	Range: 0-11 days		138	Hong Kong SAR, China	11 Mar 2003 - 25 Mar 2003	Hospital	Persons Under Investigation	Sung (2004)
3 days	Mean			249	Taiwan, China	1 Nov 2002 - 31 Dec 2003	Hospital	Persons Under Investigation	Liu (2016)
3 days	Median				Singapore		Hospital	Mixed Groups	Leong (2006b)
3 days	Median		Disease Generation, Other, Symptoms	401	China	Dec 2002 - Jun 2003	Hospital	Persons Under Investigation	Chen (2006c)
3 days	Mean	Standard Deviation: 3.1 days	Other	268	Hong Kong SAR, China	28 Feb 2003 - 8 Jun 2003	Hospital	Healthcare Workers	Chan (2004b)
3.1 days	Mean	Range_s: 0.2-16 days	Occupation, Other	263	Singapore	13 Mar 2003 - 31 May 2003	Hospital	Persons Under Investigation	Chong (2005)
3.1 days	Mean	95% CI: 0.79-2.08 days	Occupation, Other	263	Singapore	13 Mar 2003 - 31 May 2003	Hospital	Persons Under Investigation	Chong (2005)
3.5 days	Mean	Gamma Scale: 0.37 days		354	China	Feb 2003 - May 2003	Unspecified	Persons Under Investigation	McBryde (2006)
3.6 days	Mean				Hong Kong SAR, China		Population	General Population	Lau (2010)
3.6 days	Mean	SD_s: 2.4 days		115	Hong Kong SAR, China	9 Mar 2003 - 31 May 2003	Hospital	General Population	Chan (2003c)

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Delay	Statistic	Uncertainty	Disaggregated By	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
3.8 days	Mean	95% CI: 3.7-4 days	Age, Occupation, Other, Region, Sex, Time	5258	China	16 Nov 2002 - 28 May 2003	Population	Persons Under Investigation	Feng (2009b)
3.8 days	Mean	95% CI: 3.7-4 days			China	16 Nov 2002 - 28 May 2003	Population	Persons Under Investigation	Feng (2009c)
3.96 days	Mean	SD_s: 4.28 days		5327	China	Nov 2002 - Jun 2003	Population	Persons Under Investigation	Cao (2016)
4 days	Mean	Range: 0-13 days		45	Vietnam	26 Feb 2003 - 28 Apr 2003	Hospital	Persons Under Investigation	Tuan (2007)
2 - 6 days	Median	IQR: 1-14 days	Time		China				Pang (2003)
4 days		IQR: 2-6 days		273	Canada	Feb 2003 - Jun 2003	Hospital	Persons Under Investigation	Muller (2006)
3 - 5 days	Mean			1425	Hong Kong SAR, China	20 Feb 2003 - 28 Apr 2003	Hospital	General Population	Donnelly (2003)
4.1 days	Mean			1876	China	8 Mar 2003 - 28 May 2003	Hospital	Persons Under Investigation	Liang (2007)
4.3 days	Mean	Standard Deviation: 1.6 days			China	14 Mar 2003 - 22 May 2003	Hospital	Persons Under Investigation	Liang (2003)
4.4 days		SD_s: 2.7 days		1312	Hong Kong SAR, China	2003	Hospital	General Population	Chan (2007)
4.6 days	Mean	Range_s: 1-8 days	Age, Sex	14	Canada	23 Mar 2003 -	Hospital	Healthcare Workers	Avendano (2003)
4.8 days	Mean	SD_e: 2.3 days		29	Taiwan, China	28 Mar 2003 - 30 Jun 2003	Hospital	Persons Under Investigation	Jang (2004)
2.2 - 7.4 days	Mean		Time	1755	Hong Kong SAR, China	15 Feb 2003 - 31 May 2003	Mixed	Persons Under Investigation	Leung (2004a)
5 days	Median	IQR_s: 2-7 days		38	Canada	- 15 Apr 2003	Hospital	Persons Under Investigation	Fowler (2003)
5 days	Median	Range_s: 0-17 days		219	China	Feb 2003 - May 2003	Population	General Population	Chang (2006b)
6 days	Mean			3	Vietnam	26 Feb 2003 - 28 Apr 2003	Contact	Persons Under Investigation	Tuan (2007)
6 days	Median			20	Singapore	28 Feb 2003 - 10 Apr 2003	Hospital		Hsu (2004)
6 days	Median	Range_s: 0-9 days	Age, Sex, Time	20	Singapore	Feb 2003 - Mar 2003	Hospital	Mixed Groups	Hsu (2003)
6.8 days	Mean		Time		Singapore	3 Mar 2003 - 9 Mar 2003	Population	Persons Under Investigation	Goh (2006)
Symptomatic Period									
10.3 days	Unspecified			62	Taiwan, China	8 Mar 2003 - 15 Jun 2003	Hospital	Persons Under Investigation	Wang (2004a)
Other Human Delay									
0.16 days	Median	95% CI: 0-0.67 days							Peak (2017)
1.2 days	Mean	Range_s: 0-10 days		27	China	22 Apr 2003 -	Hospital	Mixed Groups	Han (2004a)
2.1 days	Mean	Standard Deviation: 3.2 days			China	14 Mar 2003 - 22 May 2003	Hospital	Persons Under Investigation	Liang (2003)
2.11 days	Mean				Taiwan, China	6 May 2003 - 4 Jun 2003			Hsieh (2004)
1.203 - 3.6398 days	Mean		Other, Time	475	Taiwan, China	2003 - 31 Dec 2004	Population	General Population	Hsieh (2005)
2 - 4 days			Other	105	Singapore	1 Mar 2003 - 31 May 2003	Hospital	Mixed Groups	Chen (2006f)

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Delay	Statistic	Uncertainty	Disaggregated By	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
3 days	Median	IQR: 2-5 days		144	Canada	7 Mar 2003 - 10 Apr 2003	Hospital	General Population	Booth (2003)
3.7 days	Mean	Range: 0-12 days		44	Hong Kong SAR, China	14 Mar 2003 - 10 Jun 2003	Hospital	Children	Leung (2004c)
3.9 days	Mean	Standard Deviation: 3.2 days		225	Canada	23 Feb 2003 - 1 Jul 2003	Population	General Population	Svoboda (2004)
3.9 days	Mean	SD_s: 4.8 days		21	Singapore	18 Mar 2003 -	Hospital		Ho (2004)
4 days	Mean	Other: 3.6-4.6 days		390	Hong Kong SAR, China	11 Mar 2003 - 31 Jul 2003	Hospital	Persons Under Investigation	Kwok (2007)
4.2 days	Median	Range_s: 0-12 days	Other	105	Singapore	1 Mar 2003 - 31 May 2003	Hospital	Mixed Groups	Chen (2006f)
4.4 days	Mean	Standard Deviation: 2.3 days		218	Hong Kong SAR, China	26 Feb 2003 - 31 Mar 2003	Hospital	Persons Under Investigation	Tsang (2003a)
4.6 days	Mean	Range_s: 1-13 days		17	Taiwan, China	20 Mar 2003 - 5 Jul 2003	Hospital	Persons Under Investigation	Chen (2005d)
5 days	Median	Range: 3-7 days		10	Hong Kong SAR, China	22 Feb 2003 - 22 Mar 2002	Contact	Persons Under Investigation	Tsang (2003b)
5 days	Mean	Range_s: 1-10 days		29	Taiwan, China	28 Mar 2003 - 30 Jun 2003	Hospital	Persons Under Investigation	Jang (2004)
5.6 days	Mean	Range_s: 2-9 days		6	China	22 Apr 2003 -	Hospital	Mixed Groups	Han (2004a)
5.8 days	Mean	SD_s: 2.8 days		25	Taiwan, China	28 Mar 2003 - 30 Jun 2003	Hospital	Mixed Groups	Jang (2004)
5.8 days	Mean	SD_s: 5.4 days		167	Hong Kong SAR, China	10 Mar 2003 - 5 Jun 2003	Hospital	Persons Under Investigation	Chan (2005)
6.37 days	Mean	95% CI: 5.29-7.75 days		1425	Hong Kong SAR, China	20 Feb 2003 - 28 Apr 2003	Hospital	General Population	Donnelly (2003)
6.4 days	Mean	SD_s: 6 days		54		12 Mar 2003 - 18 Apr 2003	Hospital	Persons Under Investigation	Gomersall (2004)
6.5 days	Mean	SD_s: 2.9 days		15	Taiwan, China	28 Mar 2003 - 30 Jun 2003	Hospital	Mixed Groups	Jang (2004)
6.8 days	Mean	SD_s: 2.9 days		29	Taiwan, China	28 Mar 2003 - 30 Jun 2003	Hospital	Persons Under Investigation	Jang (2004)
7.1 days	Mean	Range: 1-17 days		44	Hong Kong SAR, China	14 Mar 2003 - 10 Jun 2003	Hospital	Children	Leung (2004c)
7.5443 days	Mean			327	Taiwan, China	2003 - 31 Dec 2004	Other	General Population	Hsieh (2005)
7.7647 days	Mean			17	Taiwan, China	2003 - 31 Dec 2004	Other	General Population	Hsieh (2005)
8 days	Median	IQR_s: 5-10 days		38	Canada	- 15 Apr 2003	Hospital	Persons Under Investigation	Fowler (2003)
8 days	Median	IQR_s: 6-12 days		29	Canada	- 15 Apr 2003	Hospital	Persons Under Investigation	Fowler (2003)
8.3 days	Mean	Range: 3-15 days		9	Hong Kong SAR, China	14 Mar 2003 - 10 Jun 2003	Hospital	Children	Leung (2004c)
8.3 days	Mean	Range_s: 5-13 days		10	China	22 Apr 2003 -	Hospital	Mixed Groups	Han (2004a)
8.5 days	Median	IQR_s: 5-22.3 days		54		12 Mar 2003 - 18 Apr 2003	Hospital	Persons Under Investigation	Gomersall (2004)
8.6 days	Mean	Standard Deviation: 14 days	Other	20	Hong Kong SAR, China	9 Mar 2003 - 28 Apr 2003	Hospital	Unspecified	Chueng (2004)
9.2 days	Mean	SD_s: 4 days		29	Taiwan, China	28 Mar 2003 - 30 Jun 2003	Hospital	Persons Under Investigation	Jang (2004)
9.2 days	Unspecified	Range: 2-21 days		234	Singapore		Hospital	Mixed Groups	Leong (2006a)

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Delay	Statistic	Uncertainty	Disaggregated By	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
9.5 days		Standard Deviation: 4.7 days		67	Hong Kong SAR, China	13 Mar 2003 - 31 May 2003	Hospital		Gomersall (2006)
9.6 days	Mean	SD_s: 4.6 days		54		12 Mar 2003 - 18 Apr 2003	Hospital	Persons Under Investigation	Gomersall (2004)
9.7 days	Mean	SD_s: 2.2 days		9	Taiwan, China	28 Mar 2003 - 30 Jun 2003	Hospital	Mixed Groups	Jang (2004)
10.5 days	Median	IQR_s: 5-28 days			Canada	- 15 Apr 2003	Hospital	Persons Under Investigation	Fowler (2003)
10.7 days	Mean	SD_s: 3.8 days		30	China	22 Apr 2003 -	Hospital	Mixed Groups	Han (2004a)
11.38 days	Mean				Taiwan, China	6 May 2003 - 4 Jun 2003			Hsieh (2004)
3 - 20 days				21	China	22 Apr 2003 -	Hospital	Mixed Groups	Han (2004a)
12.56 days	Mean				Taiwan, China	6 May 2003 - 4 Jun 2003			Hsieh (2004)
12.7 days		SD_s: 6.3 days		1312	Hong Kong SAR, China	2003	Hospital	General Population	Chan (2007)
13 days		IQR: 6-24 days		67	Hong Kong SAR, China	13 Mar 2003 - 31 May 2003	Hospital		Gomersall (2006)
13 days	Median	Range: 2-60 days		45	Hong Kong SAR, China	24 Mar 2003 - 4 May 2003	Hospital	Persons Under Investigation	Chu (2005)
13.1 days	Mean	SD_s: 10.3 days		21	Taiwan, China	28 Mar 2003 - 30 Jun 2003	Hospital	Mixed Groups	Jang (2004)
14 days	Median	IQR_s: 8-25 days		27		12 Mar 2003 - 18 Apr 2003	Hospital	Persons Under Investigation	Gomersall (2004)
14 days			Region		Canada	25 Feb 2003 - 6 Apr 2003	Unspecified	Unspecified	Choi (2003b)
14 days		Range: 7-30 days	Other	80	Hong Kong SAR, China	20 Mar 2003 - 26 May 2003	Hospital	Unspecified	Cheng (2005a)
18.8 days	Mean	Range_s: 11-40 days		5	Taiwan, China	28 Mar 2003 - 30 Jun 2003	Hospital	Mixed Groups	Jang (2004)
24.31 days	Mean				Taiwan, China	6 May 2003 - 4 Jun 2003			Hsieh (2004)
30 days	Median	Range: 2-81 days		45	Hong Kong SAR, China	24 Mar 2003 - 4 May 2003	Hospital	Persons Under Investigation	Chu (2005)
33.7 days	Mean	Standard Deviation: 13.5 days	Other	20	Hong Kong SAR, China	9 Mar 2003 - 28 Apr 2003	Hospital	Unspecified	Chueng (2004)
35.2 days	Mean	Standard Deviation: 15.4 days		45	Hong Kong SAR, China	24 Mar 2003 - 4 May 2003	Hospital	Persons Under Investigation	Chu (2005)
Generation Time									
10.6 days	Other			1512	Hong Kong SAR, China	3 Mar 2003 - 6 May 2003	Mixed	Mixed Groups	Riley (2003)
Serial Interval									
8.4 days	Mean	Standard Deviation: 3.8 days	Time	205	Singapore	25 Feb 2003 - 5 May 2003	Population	Persons Under Investigation	Lipsitch (2003)
10 days	Mean	Standard Deviation: 2.8 days			Singapore	25 Feb 2003 - Mar 2003	Population	Persons Under Investigation	Lipsitch (2003)
7.42 - 16.86 days	Mean	95% CI: 6.77-18.55 days	Region	716	Hong Kong SAR, China, Singapore	15 Feb 2003 - 25 Mar 2003	Population	General Population	Moser (2015)
Admission - Recovery									
15.9 days	Mean	Range: 1-101 days			Singapore		Hospital	Unspecified	Leong (2006a)

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Delay	Statistic	Uncertainty	Disaggregated By	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
19 days	Mean			249	Taiwan, China	1 Nov 2002 - 31 Dec 2003	Hospital	Persons Under Investigation	Liu (2016)
19.5 days	Median			7	Canada	23 Mar 2003 -	Hospital	Healthcare Workers	Scales (2003)
22.6 days	Mean	SD_s: 22 days		25	Taiwan, China	28 Mar 2003 - 30 Jun 2003	Hospital	Mixed Groups	Jang (2004)
23 days	Mean	Gamma Scale: 0.18 days		354	China	Feb 2003 - May 2003	Unspecified	Persons Under Investigation	McBryde (2006)
23.1 days	Mean	SD_s: 7.8 days			Hong Kong SAR, China		Unspecified	Unspecified	Bombardt (2006)
23.5 days	Mean	Variance: 62.1 days		1425	Hong Kong SAR, China	20 Feb 2003 - 28 Apr 2003	Hospital	General Population	Donnelly (2003)
23.94 days					Taiwan, China	6 May 2003 - 4 Jun 2003			Hsieh (2004)
25.19 days	Mean	SD_s: 22.43 days			China	Nov 2002 - Jun 2003	Population	Persons Under Investigation	Cao (2016)
29.6 days	Mean	Range: 3-101 days			Singapore		Hospital	Other	Leong (2006a)
29.7 days	Mean	95% CI: 29.3-30 days	Age, Occupation, Other, Region, Sex, Time	4591	China	16 Nov 2002 - 28 May 2003	Population	Persons Under Investigation	Feng (2009b)
29.7 days	Mean	95% CI: 29.3-30 days			China	16 Nov 2002 - 28 May 2003	Population	Persons Under Investigation	Feng (2009c)
Admission - Death									
6 days	Median			8	Taiwan, China	26 Mar 2003 - 25 May 2003	Hospital	Persons Under Investigation	Wong (2003)
9.4 days	Mean		Age	41	China	14 Mar 2003 - 22 May 2003	Hospital	Persons Under Investigation	Liang (2003)
11.7 days	Mean	95% CI: 10.6-13 days	Age, Occupation, Other, Region, Sex, Time	343	China	16 Nov 2002 - 28 May 2003	Population	Persons Under Investigation	Feng (2009b)
17 days	Mean	Gamma Scale: 0.068 days		354	China	Feb 2003 - May 2003	Unspecified	Persons Under Investigation	McBryde (2006)
17 days	Median			25	Hong Kong SAR, China	22 Feb 2003 - 31 May 2003	Hospital	Other	Chan (2004a)
17.3 days	Mean	95% CI: 15.8-18.8 days			China	16 Nov 2002 - 28 May 2003	Population	Persons Under Investigation	Feng (2009c)
27 days	Median			52	Hong Kong SAR, China	22 Feb 2003 - 31 May 2003	Hospital	Persons Under Investigation	Chan (2004a)
35.9 days	Mean	Variance: 572.9 days		1425	Hong Kong SAR, China	20 Feb 2003 - 28 Apr 2003	Hospital	General Population	Donnelly (2003)
36.87 days					Taiwan, China	6 May 2003 - 4 Jun 2003			Hsieh (2004)
Time In Care									
3 days	Median	Range: 1-14 days		90	United States	17 Mar 2003 - 30 Jul 2003	Population	Persons Under Investigation	Schrag (2004)
10 days	Median	IQR: 6-15 days		144	Canada	7 Mar 2003 - 10 Apr 2003	Hospital	General Population	Booth (2003)
12 days	Median	Range: 1-101 days		234	Singapore		Hospital	Mixed Groups	Leong (2006b)
14 days	Mean	Range_s: 12-15 days		14	Canada	23 Mar 2003 -	Hospital	Healthcare Workers	Avendano (2003)
17.2 days	Mean	Standard Deviation: 8 days		96	China	30 Jan 2003 - 10 Mar 2003	Hospital	Mixed Groups	Wu (2003)
18 days		Range: 5-38 days		16	Taiwan, China	1 May 2003 - 15 Jun 2003	Hospital	Healthcare Workers	Chiu (2004)

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Delay	Statistic	Uncertainty	Disaggregated By	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
18.7 days	Mean	Standard Deviation: 12 days		78	Taiwan, China	Aug 2003 - Feb 2004	Hospital	Persons Under Investigation	Liu (2009b)
22.1 days	Mean	Standard Deviation: 3.1 days	Symptoms, Time	75	China	24 Mar 2003 - 28 Mar 2003			Peiris (2003)
23 days	Mean		Other	1606	Hong Kong SAR, China	2 Apr 2003 - May 2003	Hospital	Persons Under Investigation	Ghani (2005)
23.1 days	Mean	Other: 11.9 days		78	China	22 Dec 2002 - Mar 2003	Hospital	General Population	Xiao (2003)
23.1 days	Unspecified	Other: 12.3 days		98	China	Dec 2002 - Jun 2003	Hospital	General Population	Mo (2006)
24.5 days	Mean	Standard Deviation: 7.4 days		62	Vietnam	26 Feb 2003 - May 2003	Hospital	Persons Under Investigation	Vu (2004)
24.9 days	Mean	IQR_s: 14.8-33.3 days	Disease Generation	67	Taiwan, China	20 Mar 2003 - 5 Jul 2003	Hospital	Persons Under Investigation	Chen (2005d)
29.02 days	Mean			801	China	Mar 2003 - Jun 2003	Hospital	Mixed Groups	Lu (2005)
Onset - Recovery									
19 days	Median				Taiwan, China		Population	General Population	Lau (2010)
23 days	Median				Hong Kong SAR, China		Population	General Population	Lau (2010)
24 days	Mean			98	Taiwan, China	1 Nov 2002 - 31 Dec 2003	Hospital	Healthcare Workers	Liu (2016)
26 days	Mean	Gamma Scale: 0.22 days		354	China	Feb 2003 - May 2003	Unspecified	Persons Under Investigation	McBryde (2006)
26.47 days	Mean	Variance: 25.8-27.2 days	Age, Sex	1755	Hong Kong SAR, China	15 Feb 2003 - 31 May 2003	Mixed	Persons Under Investigation	Leung (2004a)
26.5 days	Mean	Variance: 194.9 days		1755	Hong Kong SAR, China		Population	Persons Under Investigation	Leung (2009b)
32.79 days	Mean			801	China	Mar 2003 - Jun 2003	Hospital	Mixed Groups	Lu (2005)
36 days	Median				China		Population	General Population	Lau (2010)
Onset - Death									
10 days	Median				Taiwan, China		Population	General Population	Lau (2010)
11 days	Median		Sex	53	China	15 Mar 2003 - 14 May 2003	Population	General Population	Zhang (2006)
12 days	Median	Range: 4-42 days		15	Taiwan, China	8 Mar 2003 - 15 Jun 2003	Hospital	Persons Under Investigation	Wang (2004a)
12 days	Mean			249	Taiwan, China	1 Nov 2002 - 31 Dec 2003	Hospital	Persons Under Investigation	Liu (2016)
12.8 days	Mean	Range: 4-31 days		23	China	14 Mar 2003 - 22 May 2003	Hospital	Persons Under Investigation	Liang (2003)
14.5 days	Mean			98	Taiwan, China	1 Nov 2002 - 31 Dec 2003	Hospital	Healthcare Workers	Liu (2016)
19 days	Median	IQR_s: 11-22 days		13	Canada	- 15 Apr 2003	Hospital	Persons Under Investigation	Fowler (2003)
21 days	Mean	Gamma Scale: 0.11 days		354	China	Feb 2003 - May 2003	Unspecified	Persons Under Investigation	McBryde (2006)
21 days	Median				Hong Kong SAR, China		Population	General Population	Lau (2010)
23.5 days	Mean	SD_s: 13.2 days			Hong Kong SAR, China		Unspecified	Unspecified	Bombardt (2006)
23.66 days	Mean	Variance: 22-25.3 days	Age, Sex	1755	Hong Kong SAR, China	15 Feb 2003 - 31 May 2003	Mixed	Persons Under Investigation	Leung (2004a)

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Delay	Statistic	Uncertainty	Disaggregated By	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
23.7 days		Variance: 221 days		1755	Hong Kong SAR, China		Population	Persons Under Investigation	Leung (2009b)
24 days	Median				China		Population	General Population	Lau (2010)
24.8 days	Mean	Range: 9-57 days		17	Canada	14 Mar 2003 - 15 Apr 2003	Hospital	Persons Under Investigation	Varia (2003)
27 days	Mean	Range: 5-108 days		20	Canada		Hospital	Persons Under Investigation	Hwang (2005)
32.4 days	Mean	Standard Deviation: 10.6 days		34	Hong Kong SAR, China		Hospital	Persons Under Investigation	Hung (2009)

Table B.10: Human Delays grouped by published parameter. Study characteristics are reported for each parameter value.

B.4.4 CFR

Table B.11 lists all extracted CFRs by country/countries of reporting.

CFR (%)	Uncertainty	Disaggregated By	Method	Deaths	Sample Size	Study Dates	Study Setting	Study Group	Source
25.9			Naive	14	54	12 Mar 2003 - 18 Apr 2003	Hospital	Persons Under Investigation	Gomersall (2004)
Canada									
12.5			Naive	1	8	17 Mar 2003 - 4 Jul 2003			Yoshikura (2011)
13.3		Age, Other	Naive	17	128	14 Mar 2003 - 10 Jul 2003	Hospital	Persons Under Investigation	Varia (2003)
13.4 - 18.7		Other				2 Mar 2003 - 21 Apr 2003	Population	General Population	Lau (2009)
16.9			Naive	38	225	23 Feb 2003 - 1 Jul 2003	Population	General Population	Svoboda (2004)
30		Region				25 Feb 2003 - 6 Apr 2003	Unspecified	Unspecified	Choi (2003b)
Canada; China; Hong Kong SAR; China; Singapore; Taiwan; China; Vietnam									
9.56		Region	Naive	774	8096		Unspecified	Unspecified	Hirose (2007)
10.4			Adjusted			10 Apr 2003 - 21 Apr 2003	Unspecified	Unspecified	Galvani (2003)
14.7			Adjusted			10 Apr 2003 - 12 May 2003	Unspecified	Unspecified	Galvani (2003)
China									
1			Naive	1	96	30 Jan 2003 - 10 Mar 2003	Hospital	Mixed Groups	Wu (2003)
3.3	95% CI: 2.1-4.4 %	Age, Occupation, Other, Sex	Naive	30	917		Population	General Population	Lau (2010)
3.6			Naive	54	1504	16 Nov 2002 - 2003	Population	General Population	Na (2009)
3.8			Naive	55	1454	16 Nov 2002 - 30 Apr 2003	Community	General Population	Xu (2004)
3.84			Adjusted			Apr 2003 - May 2003	Population	Persons Under Investigation	Cui (2003)
5			Naive	1	20	27 Mar 2003 - 4 Jul 2003			Yoshikura (2011)
5.31	Range_s: 4.86-5.87 %	Sex	Naive	134	2521	15 Mar 2003 - 14 May 2003	Population	General Population	Zhang (2006)
5.36			Adjusted			Apr 2003 - May 2003	Population	Persons Under Investigation	Cui (2003)
5.4			Naive	24	449	16 Nov 2002 - 2003	Population	General Population	Na (2009)
5.58			Adjusted			Apr 2003 - May 2003	Population	Persons Under Investigation	Cui (2003)
6.23			Unspecified	25	401	Dec 2002 - Jun 2003	Hospital	Persons Under Investigation	Chen (2006c)
6.4		Age	Unspecified	156	2444	5 Mar 2003 - 20 May 2003	Hospital	Persons Under Investigation	Liang (2004)
6.4		Age, Occupation, Other, Region, Sex, Time	Naive	343	5327	16 Nov 2002 - 2003	Population	General Population	Na (2009)
6.4			Unspecified	5327	343	16 Nov 2002 - 28 May 2003	Population	Persons Under Investigation	Feng (2009c)
6.55		Region	Adjusted	349	5327	Apr 2003 - May 2003	Population	Persons Under Investigation	Cui (2003)

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CFR (%)	Uncertainty	Disaggregated By	Method	Deaths	Sample Size	Study Dates	Study Setting	Study Group	Source
7			Naive	5	75	24 Mar 2003 - 28 Mar 2003			Peiris (2003)
6.7			Naive	8	120	22 Apr 2003 -	Hospital	Mixed Groups	Han (2004a)
7.28			Naive	120	1649	2003 - 7 Jul 2003	Population	Persons Under Investigation	Liu (2006a)
7.3			Naive	184	2522	16 Nov 2002 - 2003	Population	General Population	Na (2009)
7.56		Region	Adjusted	185	2445	1 Mar 2003 - 16 Aug 2003	Hospital	Persons Under Investigation	Liu (2005)
7.6		Occupation, Region, Time	Unspecified	192	2521	8 Mar 2003 - 28 May 2003	Population	Persons Under Investigation	Liang (2007)
7.62		Time				21 Apr 2003 - 13 Jun 2003	Other	Persons Under Investigation	Chen (2009a)
7.66		Age, Disease Generation, Occupation, Other, Region, Sex, Time	Naive	193	2521	Mar 2003 - 16 Aug 2003	Mixed	Persons Under Investigation	Chen (2005b)
7.66			Adjusted			Apr 2003 - May 2003	Population	Persons Under Investigation	Cui (2003)
8		Time	Unspecified	191	2521	21 Apr 2003 - 2 Jul 2003	Unspecified	Persons Under Investigation	Yip (2005a)
8			Adjusted			Apr 2003 - May 2003	Population	Persons Under Investigation	Cui (2003)
8.4			Adjusted	190		5 Mar 2003 - 20 May 2003	Hospital	Persons Under Investigation	Liang (2004)
8.7		Age, Method	Adjusted	41	473	14 Mar 2003 - 22 May 2003	Population	Persons Under Investigation	Liang (2003)
9			Naive	7	78	22 Dec 2002 - Mar 2003	Hospital	General Population	Xiao (2003)
9.9			Naive	28	282	16 Nov 2002 - 2003	Population	General Population	Na (2009)
11.7			Unspecified	13	111	16 Apr 2003 - 12 May 2003	Hospital	Persons Under Investigation	Wang (2006b)
12			Naive	21	175	16 Nov 2002 - 2003	Population	General Population	Na (2009)
12.7			Naive			16 Nov 2002 - 30 Apr 2003	Community	General Population	Xu (2004)
15		Age, Occupation, Other, Sex	Naive	17	111	2003 - 6 2003	Hospital	Mixed Groups	Wei (2009)
10 - 20		Other	Unspecified			3 Mar 2003 -	Hospital	Mixed Groups	Cooper (2009)
20		Disease Generation	Unspecified			5 Feb 2003 - 4 May 2003	Hospital	Persons Under Investigation	Shen (2004)
1 - 52						21 Apr 2003 - 13 Jun 2003	Other	Persons Under Investigation	Chen (2004)
26.7			Naive	8	30	22 Apr 2003 -	Hospital	Mixed Groups	Han (2004a)
Hong Kong SAR; China									
0			Unspecified			Mar 2003 - Jun 2003	Population	General Population	Leung (2004c)
0.064 - 0.1442		Method, Time	Adjusted			2 Apr 2003 - May 2003	Hospital	Persons Under Investigation	Jewell (2007)
0.24 - 3.69		Other, Region	Adjusted				Unspecified	Unspecified	Hirose (2007)
2.3	95% CI: 0-6.8 %			1	44	16 Apr 2003 -	Hospital	Persons Under Investigation	Chan (2003b)
3.6			Naive	5	138	11 Mar 2003 -	Hospital	Persons Under Investigation	Lee (2003)
7.6			Naive			22 Feb 2003 - 31 May 2003	Hospital	Persons Under Investigation	Chan (2004a)

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CFR (%)	Uncertainty	Disaggregated By	Method	Deaths	Sample Size	Study Dates	Study Setting	Study Group	Source
9.1			Naive	119	1312	2003	Hospital	General Population	Chan (2007)
10.1			Adjusted	22	218	26 Feb 2003 - 31 Mar 2003	Hospital	Persons Under Investigation	Tsang (2003a)
10.9			Naive	15	138	11 Mar 2003 - 28 Jul 2003	Hospital	Persons Under Investigation	Sung (2004)
11.8			Naive	172	1462	Mar 2003 - Jul 2003	Population	General Population	Antonio (2005)
12	95% CI: 8-16 %	Age	Naive	32	267	26 Feb 2003 - 31 Mar 2003	Hospital	Mixed Groups	Choi (2003a)
12			Naive	24	201	26 Feb 2003 - 10 Apr 2003	Hospital	General Population	Chau (2004)
12.5		Other	Naive	10	80	20 Mar 2003 - 26 May 2003	Hospital	Unspecified	Cheng (2005a)
12.9	95% CI: 0-25.8 %				31	16 Apr 2003 -	Hospital	Persons Under Investigation	Chan (2003b)
13.2	95% CI: 9.8-16.8 %	Age				20 Feb 2003 - 28 Apr 2003	Hospital	General Population	Donnelly (2003)
14	95% CI: 5.2-26.3 %				343	16 Apr 2003 -	Hospital	General Population	Chan (2003b)
14.2		Age	Adjusted		1606	2 Apr 2003 - May 2003	Hospital	Persons Under Investigation	Ghani (2005)
15		Symptoms	Naive	3	20	9 Mar 2003 - 28 Apr 2003	Hospital	Unspecified	Chueng (2004)
15.6	95% CI: 9.8-22.8 %				634	16 Apr 2003 -	Hospital	General Population	Chan (2003b)
15.7				18	115	9 Mar 2003 - 31 May 2003	Hospital	General Population	Chan (2003c)
17		Time	Unspecified	299	1755	12 Mar 2003 - 31 Jul 2003	Hospital	Persons Under Investigation	Yip (2005a)
17		Age, Occupation, Sex	Naive	302	1755	Feb 2003 - Jul 2003	Hospital	Persons Under Investigation	Virlogeux (2015)
17			Naive	299	1755		Population	Persons Under Investigation	Leung (2009b)
17.1		Time				19 Mar 2003 - 4 Jun 2003	Other	Persons Under Investigation	Chen (2009a)
17.16	Standard Error: 1.35 %		Adjusted			- 25 May 2003	Unspecified	Unspecified	Hirose (2009)
17.16	Normal SD: 1.35 %		Adjusted			- 25 May 2003	Unspecified	Unspecified	Hirose (2007)
17.2			Naive	302	1755	19 Mar 2003 - 2 Apr 2003			Nishiura (2009)
17.2	95% CI: 15.4-19 %	Age, Occupation, Other, Sex	Naive	302	1755		Population	General Population	Lau (2010)
17.2		Age, Occupation, Other, Sex, Symptoms, Time	Unspecified	302	1755	15 Feb 2003 - 31 May 2003	Mixed	Persons Under Investigation	Leung (2004a)
17.2			Adjusted			15 Feb 2003 - 24 Jul 2003	Unspecified	Unspecified	Lekone (2008)
17.2			Naive	302	1755		Hospital	Persons Under Investigation	Cowling (2006)
15.4 - 19.2		Other					Population	General Population	Lau (2009)
17.3	Normal SD: 0.92 %		Adjusted			- 11 Jul 2003	Unspecified	Unspecified	Hirose (2007)
15 - 20		Time				Apr 2003 - 31 Jul 2003	Hospital	Persons Under Investigation	Yip (2005b)

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CFR (%)	Uncertainty	Disaggregated By	Method	Deaths	Sample Size	Study Dates	Study Setting	Study Group	Source
18						19 Mar 2003 - 13 Jun 2003	Other	Persons Under Investigation	Chen (2004)
18.1	95% CI: 10.5-28.1 %		Adjusted			19 Mar 2003 - 27 Mar 2003			Nishiura (2009)
22.1			Naive	34	154		Hospital	Persons Under Investigation	Hung (2009)
3.7 - 64.7		Age, Occupation, Sex				Mar 2003 - 22 Sep 2003	Hospital	Persons Under Investigation	Karlberg (2004)
43.3	95% CI: 35.2-52.4 %	Age				20 Feb 2003 - 28 Apr 2003	Hospital	General Population	Donnelly (2003)
60			Naive			22 Feb 2003 - 31 May 2003	Hospital	Other	Chan (2004a)
Singapore									
11.8			Unspecified	30	234		Hospital	Mixed Groups	Leong (2006a)
11.8			Naive	30			Hospital	Mixed Groups	Leong (2006b)
13.9		Age	Naive	33	238	25 Feb 2003 - 11 May 2003	Population	Persons Under Investigation	Goh (2006)
14			Naive	1	7	5 Apr 2023 -	Hospital	Mixed Groups	Tan (2004)
15.53		Time				14 Mar 2003 - 4 Jun 2003	Other	Persons Under Investigation	Chen (2009a)
15 - 19		Time				Apr 2003 -	Hospital	Persons Under Investigation	Yip (2005b)
18						14 Mar 2003 - 13 Jun 2003	Other	Persons Under Investigation	Chen (2004)
Taiwan; China									
6.25			Naive	1	16	1 May 2003 - 15 Jun 2003	Hospital	Healthcare Workers	Chiu (2004)
6.5			Unspecified	4	62	8 Mar 2003 - 15 Jun 2003	Hospital	Other	Wang (2004a)
10.7			Naive	37	346	14 Mar 2003 - 30 Jul 2003	Hospital	Persons Under Investigation	Chen (2005c)
12.24			Unspecified	12	98	1 Nov 2002 - 31 Dec 2003	Hospital	Healthcare Workers	Liu (2016)
12.5			Naive	1	8	1 May 2003 - 20 Jun 2003			Yoshikura (2011)
13.8			Naive	4	29	28 Mar 2003 - 30 Jun 2003	Hospital	Persons Under Investigation	Jang (2004)
14.1			Adjusted			25 Feb 2003 - 25 Jun 2003	Population	General Population	Hsieh (2007)
15			Naive	8		26 Mar 2003 - 25 May 2003	Hospital	Persons Under Investigation	Wong (2003)
17			Naive	8	46	18 Apr 2003 - 31 May 2003	Hospital	Persons Under Investigation	Lim (2003)
21.1			Naive	73	346	14 Mar 2003 - 30 Jul 2003	Hospital	Persons Under Investigation	Chen (2005c)
21.1			Naive	73	346		Population	General Population	Chang (2006a)
24.5			Unspecified	61	249	1 Nov 2002 - 31 Dec 2003	Hospital	Persons Under Investigation	Liu (2016)
27		Age, Level of Exposure, Other, Sex	Naive	181	668	14 Mar 2003 - 30 Jul 2003	Hospital	Persons Under Investigation	Chen (2005c)
27.6	95% CI: 24.2-31 %	Age, Occupation, Other, Sex	Naive	180	664		Population	General Population	Lau (2010)
30.8			Adjusted	24	78	Aug 2003 - Feb 2004	Hospital	Persons Under Investigation	Liu (2009b)

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CFR (%)	Uncertainty	Disaggregated By	Method	Deaths	Sample Size	Study Dates	Study Setting	Study Group	Source
31.3		Disease Generation	Naive	21	67	20 Mar 2003 - 5 Jul 2003	Hospital	Persons Under Investigation	Chen (2005d)
38			Unspecified	20	52	26 Apr 2003 - 25 May 2003	Hospital	Persons Under Investigation	Ko (2004a)
47			Naive	8		26 Mar 2003 - 25 May 2003	Hospital	Persons Under Investigation	Wong (2003)
78.6			Unspecified	11	14	8 Mar 2003 - 15 Jun 2003	Hospital	Other	Wang (2004a)
United States									
0			Naive	0	398	17 Mar 2003 - 30 Jul 2003	Population	Persons Under Investigation	Schrag (2004)
Vietnam									
9.7			Naive	6	62	26 Feb 2003 - May 2003	Hospital	Persons Under Investigation	Vu (2004)
22 - 50		Occupation	Unspecified			26 Feb 2003 - 24 Mar 2003	Hospital	Healthcare Workers	Reynolds (2006)

Table B.11: Case Fatality Rates (CFRs) grouped by country. Study characteristics are reported for each CFR estimate.

B.4.5 Seroprevalence

Table B.12 lists all extracted seroprevalence estimates by country/countries of reporting.

Seroprevalence (%)	Uncertainty	Disaggregated By	Assay	Number Seropositive	Sample Size	Study Dates	Study Setting	Study Group	Source
Canada									
96.1			Unspecified	124	129	23 Feb 2003 - 1 Jul 2003	Population	Persons Under Investigation	Svoboda (2004)
China									
34.8 - 100		Time	IFA			Feb 2003 - Mar 2003	Hospital	Other	Shi (2005)
1.2			IgG			16 Nov 2002 - 30 Apr 2003	Community	General Population	Xu (2004)
13			IgG			16 Nov 2002 - 30 Apr 2003	Trade	Animal Workers	Xu (2004)
26			IgG	8	31	28 Apr 2003 - 28 Aug 2003	Population	General Population	Wu (2004)
0.3 - 88.9		Other	IgG			May 2003 - May 2003	Hospital	Healthcare Workers	Chen (2005a)
39.8 - 100		Time	IgG			Feb 2003 - Mar 2003	Hospital	Other	Shi (2005)
55 - 98		Other	IgG			5 Mar 2003 - 20 May 2003	Population	Persons Under Investigation	Liang (2004)
90			IgG		390	14 Mar 2003 - 22 May 2003	Population	Persons Under Investigation	Liang (2003)
93			IgG	70	75	24 Mar 2003 - 28 Mar 2003			Peiris (2003)
China, Hong Kong SAR, China									
0.14			IgG		1453	Jun 2003 - Jun 2003	Mixed	General Population	Shi (2005)
Hong Kong SAR, China									
0	95% CI: 0-0.6 %		IFA	0	29	22 May 2003 - 31 May 2003		Healthcare Workers	Yu (2004a)
0			IFA	0	361	Sep 2003 - Oct 2003	Population	Children	Lee (2006a)
0.57			IFA	2	353	Sep 2003 - Oct 2003	Population	Children	Lee (2006a)
1.29		Symptoms	IFA	1	77	14 Mar 2003 - 10 Jun 2003	Hospital	Children	Leung (2004c)
75.8			IFA	25	33	26 Feb 2003 - 31 Mar 2003	Hospital	Other	Tsang (2003a)
85.1			IFA	74	87	26 Feb 2003 - 31 Mar 2003	Hospital	Other	Tsang (2003a)
88		Symptoms	IFA	44	50	14 Mar 2003 - 10 Jun 2003	Hospital	Children	Leung (2004c)
0			IgG	0	192		Hospital	Healthcare Workers	Ip (2004)
0			IgG	0	674	Mar 2003 - May 2003	Hospital	Healthcare Workers	Chan (2003a)
0.19	95% CI: 0.02-0.67 %		IgG	2	1068		Contact	Persons Under Investigation	Leung (2009a)
0.19	95% CI: 0.02-0.67 %		IgG	2	1068		Contact	Unspecified	Leung (2004b)
2.3			IgG	3	131		Hospital	Healthcare Workers	Ip (2004)
3 - 6.1		Age, Occupation, Symptoms	IgG			Mar 2003 - May 2003	Mixed	Mixed Groups	Woo (2004)
5.1			IgG	29	574	22 May 2003 - 31 May 2003		Healthcare Workers	Yu (2004a)
42			IgG	8	19	22 Feb 2003 - 31 May 2003	Hospital	Other	Chan (2004a)

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Seroprevalence (%)	Uncertainty	Disaggregated By	Assay	Number Seropositive	Sample Size	Study Dates	Study Setting	Study Group	Source
92			IgG	46	50	22 Feb 2003 - 31 May 2003	Hospital	Persons Under Investigation	Chan (2004a)
98.41			IgG	124	126	11 Mar 2003 - 25 Mar 2003	Hospital	Persons Under Investigation	Sung (2004)
100			IgG			4 Mar 2003 - 10 Mar 2003	Hospital	Persons Under Investigation	Wong (2004)
0.8		Age, Occupation, Symptoms	Unspecified			Mar 2003 - May 2003	Mixed	Mixed Groups	Woo (2004)
75.6		Time	Unspecified	34	45	Mar 2003 -	Hospital	Healthcare Workers	Cheng (2005b)
78			Unspecified			26 Feb 2003 - 31 Mar 2003	Hospital	Mixed Groups	Choi (2003a)
95		Symptoms	Unspecified	19	20	9 Mar 2003 - 28 Apr 2003	Hospital	Unspecified	Chueng (2004)
96.6			Unspecified	171	177	10 Mar 2003 - 5 Jun 2003	Hospital	Persons Under Investigation	Chan (2005)
Singapore									
2.2		Level of Exposure, Other	Unspecified	8	372	22 Apr 2003 - 5 Jun 2003	Hospital	Healthcare Workers	Ho (2004)
56		Symptoms	Unspecified	45	80	Apr 2003 - Jun 2003	Hospital	Healthcare Workers	Wilder-Smith (2005)
Taiwan, China									
0.19	95% CI: 0.02-0.7 %	Age	IFA	2	1030	Aug 2003 - Dec 2003	Community	General Population	Tsai (2008)
0.8	95% CI: 0.2-3 %		IFA	2	238	15 Jul 2003 - 10 Aug 2003	Other	Healthcare Workers	Ko (2004b)
4.7			IFA	9	193	30 Mar 2003 - 30 Jun 2003	Hospital	Healthcare Workers	Chang (2004a)
0			IgG	0	115	26 Apr 2003 - 26 May 2003	Hospital	Healthcare Workers	Liu (2006b)
0.41		Occupation, Sex	IgG	9	2197	1 Jul 2003 -	Hospital	Healthcare Workers	Wang (2007)
1.02		Occupation, Sex	IgG	9	882	1 Jul 2003 -	Contact	Healthcare Workers	Wang (2007)
12.04	95% CI: 10.11-14.18 %	Age	IgG	124	1030	Aug 2003 - Dec 2003	Community	General Population	Tsai (2008)
80			IgG	12	15	26 Apr 2003 - 26 May 2003	Hospital	Healthcare Workers	Liu (2006b)
86.7			IgG	13	15	1 May 2003 - 15 Jun 2003	Hospital	Healthcare Workers	Chiu (2004)
92.7			IgG	38	41	8 Mar 2003 - 15 Jun 2003	Hospital	Persons Under Investigation	Wang (2004a)
3			Unspecified	20	658	9 Jun 2003 - 15 Jun 2003	Hospital	Healthcare Workers	Chen (2006a)
84.8			Unspecified	28	33	20 Mar 2003 - 5 Jul 2003	Hospital	Persons Under Investigation	Chen (2005d)
United States									
0		Symptoms	IFA	0	127	23 Feb 2003	Travel	Persons Under Investigation	Vogt (2006)
Vietnam									
2 - 15.5		Level of Exposure	Unspecified			Oct 2003 - May 2004	Contact	General Population	Nishiyama (2008)
29		Occupation	Unspecified	36	124	26 Feb 2003 - 24 Mar 2003	Hospital	Healthcare Workers	Reynolds (2006)
98.4			Unspecified	61	62	26 Feb 2003 - May 2003	Hospital	Persons Under Investigation	Vu (2004)

Table B.12: Seroprevalence data grouped by assay type used. Study characteristics are reported for each seroprevalence estimate. Estimates in bold are from high-quality studies (quality assessment score > 0.5).

B.4.6 Risk factors

Table B.13 lists all extracted risk factors, including whether they were found to be significant or not significant. These are given in order of risks associated with:

1. Infection
2. Severe disease
3. Probable case
4. Superspreading
5. Other
6. Death
7. Serology
8. Attack rate
9. Incidence
10. Mortality
11. Recovery
12. Incubation period
13. Admission to death delay
14. Admission to discharge delay
15. Incidence rate

Risk Factor	Significance	Method	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
Infection								
Age, Close Contact, Other	Significant	Not Adjusted	2139	Hong Kong SAR; China	4 Apr 2003 - 10 Jun 2003	Population	Household Contacts Of Survivors	Lau (2004c)
Age, Occupation, Other, Close Contact	Significant	Not Adjusted	176	Canada	25 May 2003 - 31 Oct 2003	Household	Persons Under Investigation	Wilson-Clark (2006)
Age, Occupation, Other, Sex	Significant	Unspecified	1856	China	May 2003 - May 2003	Hospital	Healthcare Workers	Chen (2005a)
Age, Other, Sex	Significant	Not Adjusted	127	Vietnam	26 Feb 2003 - 7 Apr 2003	Hospital	General Population	Nishiura (2005)
Close Contact	Significant		112	China; Hong Kong SAR; China		Contact	Persons Under Investigation	Olsen (2003)
Close Contact	Significant	Unspecified	47	Hong Kong SAR; China	4 Mar 2003 - 10 Mar 2003	Hospital	Healthcare Workers	Wong (2004)
Close Contact, Occupation	Significant	Unspecified	31	Canada	23 Mar 2003 -	Hospital	Healthcare Workers	Scales (2003)
Close Contact, Occupation, Other	Significant	Not Adjusted	193	Vietnam	26 Feb 2003 - 24 Mar 2003	Hospital	Healthcare Workers	Reynolds (2006)
Close Contact, Occupation, Other	Significant	Not Adjusted	263	Singapore	13 Mar 2003 - 31 May 2003	Hospital	Persons Under Investigation	Chong (2005)
Close Contact, Occupation, Other, Sex	Significant	Unspecified	658	Taiwan; China	9 Jun 2003 - 15 Jun 2003	Hospital	Healthcare Workers	Chen (2006a)
Close Contact, Other	Significant	Adjusted	86	Singapore	1 Mar 2003 - 31 Mar 2003	Hospital	Healthcare Workers	TELEMAN (2004)
Close Contact, Other	Significant	Adjusted	8662	Canada	23 Feb 2003 - 2 Jul 2003	Population	General Population	Rea (2007)
Close Contact, Other	Significant	Adjusted	443	China	Apr 2004 - Jun 2004	Hospital	Healthcare Workers	PEI (2006)
Close Contact, Other	Significant	Adjusted	2139	Hong Kong SAR; China	4 Apr 2003 - 10 Jun 2003	Population	Household Contacts Of Survivors	Lau (2004c)
Close Contact, Other	Significant	Adjusted	477	China	5 Mar 2003 - 17 May 2003	Hospital	General Population	Liu (2009a)
Close Contact, Other	Significant	Not Adjusted	86	Singapore	1 Mar 2003 - 31 Mar 2003	Hospital	Healthcare Workers	TELEMAN (2004)
Close Contact, Other	Significant	Not Adjusted	216	Hong Kong SAR; China	28 Mar 2003 - 25 May 2003	Hospital	Healthcare Workers	Lau (2004d)
Close Contact, Other	Significant	Not Adjusted	477	China	5 Mar 2003 - 17 May 2003	Hospital	General Population	Liu (2009a)
Cormobidity, Occupation, Other	Significant	Not Adjusted	98	Singapore	1 Mar 2003 - 31 May 2003	Hospital	Persons Under Investigation	Chen (2006e)
Hospitalisation, Household Contact, Non-household Contact, Other, Social gathering	Significant	Unspecified	225	Canada	23 Feb 2003 - 1 Jul 2003	Hospital	Unspecified	Svoboda (2004)
Hospitalisation, Occupation, Other	Significant	Adjusted	85	Vietnam	Oct 2003 - May 2004	Contact	General Population	Nishiyama (2008)
Household Contact	Significant	Unspecified	16	Hong Kong SAR; China	13 Mar 2003 - 17 May 2003	Hospital	Persons Under Investigation	Cheng (2005c)
Household Contact, Other	Significant	Adjusted	212	Vietnam	26 Feb 2003 - 28 Apr 2003	Contact	Mixed Groups	Tuan (2007)
Household Contact, Other	Significant	Not Adjusted	212	Vietnam	26 Feb 2003 - 28 Apr 2003	Contact	Mixed Groups	Tuan (2007)
Occupation, Other	Significant	Adjusted	748	China	May 2003 - May 2003	Hospital	Healthcare Workers	Chen (2009b)
Occupation, Other	Significant	Unspecified	32	Canada	8 Mar 2003 - 3 Apr 2003	Hospital	Healthcare Workers	Loeb (2004)
Other	Significant	Adjusted	74	Hong Kong SAR; China	4 Mar 2003 - Mar 2003	Hospital	Persons Under Investigation	Yu (2005)
Other	Significant	Adjusted	187	Hong Kong SAR; China	21 Mar 2003 - 1 Apr 2003	Community	Persons Under Investigation	Yu (2004b)
Other	Significant	Adjusted	254	Hong Kong SAR; China	15 Mar 2003 - 24 Mar 2003	Hospital	Healthcare Workers	Seto (2003)

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Risk Factor	Occupation	Method	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
Other	Significant	Adjusted	624	Canada	5 Mar 2003 - 12 Jun 2003	Hospital	Healthcare Workers	Raboud (2010)
Other	Significant	Adjusted	330	Hong Kong SAR; China	4 Apr 2003 - 10 Jun 2003	Population	General Population	Lau (2004b)
Other	Significant	Adjusted	216	Hong Kong SAR; China	28 Mar 2003 - 25 May 2003	Hospital	Healthcare Workers	Lau (2004d)
Other	Significant	Adjusted	98	Singapore	1 Mar 2003 - 31 May 2003	Hospital	Persons Under Investigation	Chen (2006e)
Other	Significant	Not Adjusted	624	Canada	5 Mar 2003 - 12 Jun 2003	Hospital	Healthcare Workers	Raboud (2010)
Other	Significant	Not Adjusted	330	Hong Kong SAR; China	4 Apr 2003 - 10 Jun 2003	Population	General Population	Lau (2004b)
Other	Significant	Not Adjusted	37174	Hong Kong SAR; China	17 Apr 2003 - 17 Aug 2003	Hospital	Healthcare Workers	Lau (2005)
Other	Significant	Not Adjusted	86	Singapore	1 Mar 2003 - 22 Mar 2003	Hospital	Healthcare Workers	Leung (2004c)
Other	Significant	Not Adjusted	76	Canada	1 Apr 2003 - 22 Apr 2003	Hospital	Persons Under Investigation	Fowler (2004)
Other	Significant	Unspecified	662	China	16 Nov 2002 - 30 Apr 2003	Community	General Population	Xu (2004)
Other	Significant	Unspecified	1018	Singapore	13 Mar 2003 - 31 May 2003	Hospital	Persons Under Investigation	Tham (2004)
Other	Significant	Unspecified		China	1 Mar 2003 - 16 Aug 2003	Population	General Population	Liu (2005)
Other, Close Contact	Significant	Adjusted	176	Canada	25 May 2003 - 31 Oct 2003	Household	Persons Under Investigation	Wilson-Clark (2006)
Age, Close Contact, Cormobidity, Household Contact, Non-household Contact, Other, Sex	Not Significant	Not Adjusted	212	Vietnam	26 Feb 2003 - 28 Apr 2003	Contact	Mixed Groups	Tuan (2007)
Age, Close Contact, Cormobidity, Occupation, Other	Not Significant	Not Adjusted	86	Singapore	1 Mar 2003 - 31 Mar 2003	Hospital	Healthcare Workers	TELEMAN (2004)
Age, Cormobidity, Other	Not Significant	Adjusted	74	Hong Kong SAR; China	4 Mar 2003 - Mar 2003	Hospital	Persons Under Investigation	Yu (2005)
Age, Cormobidity, Other	Not Significant	Adjusted	85	Vietnam	Oct 2003 - May 2004	Hospital	General Population	Nishiyama (2008)
Age, Cormobidity, Other, Sex	Not Significant	Not Adjusted	624	Canada	5 Mar 2003 - 12 Jun 2003	Hospital	Healthcare Workers	Raboud (2010)
Age, Occupation	Not Significant	Not Adjusted	176	Canada	25 May 2003 - 31 Oct 2003	Household	Persons Under Investigation	Wilson-Clark (2006)
Age, Occupation, Other	Not Significant	Not Adjusted	127	Vietnam	26 Feb 2003 - 7 Apr 2003	Hospital	General Population	Nishiura (2005)
Age, Other, Sex	Not Significant	Adjusted	2139	Hong Kong SAR; China	4 Apr 2003 - 10 Jun 2003	Population	Household Contacts Of Survivors	Lau (2004c)
Age, Other, Sex	Not Significant	Not Adjusted	98	Singapore	1 Mar 2003 - 31 May 2003	Hospital	Persons Under Investigation	Chen (2006e)
Age, Sex	Not Significant	Adjusted	8662	Canada	23 Feb 2003 - 2 Jul 2003	Population	General Population	Rea (2007)
Close Contact, Occupation	Not Significant	Not Adjusted	193	Vietnam	26 Feb 2003 - 24 Mar 2003	Hospital	Healthcare Workers	Reynolds (2006)
Close Contact, Other	Not Significant	Not Adjusted	330	Hong Kong SAR; China	4 Apr 2003 - 10 Jun 2003	Population	General Population	Lau (2004b)
Close Contact, Other	Not Significant	Not Adjusted	216	Hong Kong SAR; China	28 Mar 2003 - 25 May 2003	Hospital	Healthcare Workers	Lau (2004d)
Close Contact, Other	Not Significant	Not Adjusted	477	China	5 Mar 2003 - 17 May 2003	Hospital	General Population	Liu (2009a)
Hospitalisation, Household Contact, Non-household Contact, Other, Social gathering	Not Significant	Unspecified	225	Canada	23 Feb 2003 - 1 Jul 2003	Hospital	Unspecified	Svoboda (2004)

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Risk Factor	Occupation	Method	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
Occupation, Other	Not Significant	Adjusted	176	Canada	25 May 2003 - 31 Oct 2003	Household	Persons Under Investigation	Wilson-Clark (2006)
Other	Not Significant	Adjusted	187	Hong Kong SAR; China	21 Mar 2003 - 1 Apr 2003	Community	Persons Under Investigation	Yu (2004b)
Other	Not Significant	Adjusted	216	Hong Kong SAR; China	28 Mar 2003 - 25 May 2003	Hospital	Healthcare Workers	Lau (2004d)
Other	Not Significant	Adjusted	477	China	5 Mar 2003 - 17 May 2003	Hospital	General Population	Liu (2009a)
Other	Not Significant	Not Adjusted	47	Hong Kong SAR; China	4 Mar 2003 - 10 Mar 2003	Hospital	Healthcare Workers	Wong (2004)
Other	Not Significant	Not Adjusted	110	China	15 Mar 2003 -	Travel	General Population	Lei (2018)
Other	Not Significant	Unspecified	32	Canada	8 Mar 2003 - 3 Apr 2003	Hospital	Healthcare Workers	Loeb (2004)
Other, Sex	Not Significant	Adjusted	86	Singapore	1 Mar 2003 - 31 Mar 2003	Hospital	Healthcare Workers	TELEMAN (2004)
Other, Sex	Not Significant	Not Adjusted	2139	Hong Kong SAR; China	4 Apr 2003 - 10 Jun 2003	Population	Household Contacts Of Survivors	Lau (2004c)
Close Contact, Household Contact, Non-household Contact, Occupation	Unspecified	Unspecified	1112	China	2003	Community	Persons Under Investigation	Zeng (2009)
Occupation	Unspecified	Not Adjusted	182	Hong Kong SAR; China	13 Mar 2003 - 31 May 2003	Hospital	Healthcare Workers	Gomersall (2006)
Occupation	Unspecified	Unspecified	321	Taiwan; China	18 Mar 2003 - 19 Jun 2003	Trade	Healthcare Workers	Ko (2004b)
Severe disease								
Age	Significant	Not Adjusted	44	Hong Kong SAR; China	14 Mar 2003 - 10 Jun 2003	Hospital	Children	Leung (2004c)
Age	Significant	Unspecified	43	Hong Kong SAR; China	14 Mar 2003 - 10 Jun 2003	Hospital	Children	Leung (2004c)
Age, Cormobidity	Significant	Adjusted	78	China	22 Dec 2002 - Mar 2003	Hospital	General Population	Xiao (2003)
Age, Cormobidity, Other	Significant	Adjusted	67	Taiwan; China	20 Mar 2003 - 5 Jul 2003	Hospital	Persons Under Investigation	Chen (2005d)
Age, Cormobidity, Other, Sex	Significant	Not Adjusted	234	Singapore		Hospital	Mixed Groups	Leong (2006a)
Age, Cormobidity, Other, Sex	Significant	Not Adjusted	67	Taiwan; China	20 Mar 2003 - 5 Jul 2003	Hospital	Persons Under Investigation	Chen (2005d)
Age, Cormobidity, Other, Sex	Significant	Not Adjusted	201	Hong Kong SAR; China	26 Feb 2003 - 10 Apr 2003	Hospital	General Population	Chau (2004)
Age, Cormobidity, Other, Sex	Significant	Not Adjusted	144	Canada	7 Mar 2003 - 10 Apr 2003	Hospital	General Population	Booth (2003)
Age, Other	Significant	Adjusted	234	Singapore		Hospital	Mixed Groups	Leong (2006a)
Cormobidity	Significant	Adjusted	144	Canada	7 Mar 2003 - 10 Apr 2003	Hospital	General Population	Booth (2003)
Other	Significant	Adjusted	44	Hong Kong SAR; China	14 Mar 2003 - 10 Jun 2003	Hospital	Children	Leung (2004c)
Other	Significant	Adjusted	225	China	Feb 2003 - May 2003	Population	General Population	Chang (2006b)
Other	Significant	Not Adjusted	29	Taiwan; China	28 Mar 2003 - 30 Jun 2003	Hospital	Persons Under Investigation	Jang (2004)
Age	Not Significant	Adjusted	144	Canada	7 Mar 2003 - 10 Apr 2003	Hospital	General Population	Booth (2003)
Age	Not Significant	Unspecified	44	Hong Kong SAR; China	14 Mar 2003 - 10 Jun 2003	Hospital	Children	Leung (2004c)
Age, Cormobidity, Household Contact, Non-household Contact, Other, Sex	Not Significant	Not Adjusted	29	Taiwan; China	28 Mar 2003 - 30 Jun 2003	Hospital	Persons Under Investigation	Jang (2004)

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Risk Factor	Occupation	Method	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
Other	Not Significant	Adjusted	225	China	Feb 2003 - May 2003	Population	General Population	Chang (2006b)
Other	Not Significant	Not Adjusted	234	Singapore		Hospital	Mixed Groups	Leong (2006a)
Other	Not Significant	Not Adjusted	67	Taiwan; China	20 Mar 2003 - 5 Jul 2003	Hospital	Persons Under Investigation	Chen (2005d)
Other	Not Significant	Not Adjusted	201	Hong Kong SAR; China	26 Feb 2003 - 10 Apr 2003	Hospital	General Population	Chau (2004)
Other	Not Significant	Not Adjusted	144	Canada	7 Mar 2003 - 10 Apr 2003	Hospital	General Population	Booth (2003)
Probable case								
Contact with Animal, Cormobidity, Other	Significant	Adjusted	375	China	28 Apr 2003 - 4 Jul 2003	Population	General Population	Wu (2004)
Cormobidity, Other	Significant	Not Adjusted	375	China	28 Apr 2003 - 4 Jul 2003	Population	General Population	Wu (2004)
Contact with Animal, Other	Not Significant	Not Adjusted	375	China	28 Apr 2003 - 4 Jul 2003	Population	General Population	Wu (2004)
Other	Not Significant	Adjusted	375	China	28 Apr 2003 - 4 Jul 2003	Population	General Population	Wu (2004)
Superspreading								
Close Contact	Significant	Not Adjusted	77	China	5 Feb 2003 - 4 May 2003	Hospital	Persons Under Investigation	Shen (2004)
Close Contact, Other	Significant	Adjusted	124	China; Hong Kong SAR; China	Sep 2004 - Nov 2005	Hospital	General Population	Yu (2007)
Close Contact, Other	Significant	Adjusted	127	China	Sep 2004 - Nov 2005	Hospital	General Population	Sung (2009)
Close Contact, Other	Significant	Not Adjusted	124	China; Hong Kong SAR; China	Sep 2004 - Nov 2005	Hospital	General Population	Yu (2007)
Close Contact, Other	Significant	Not Adjusted	127	China	Sep 2004 - Nov 2005	Hospital	General Population	Sung (2009)
Cormobidity, Other	Significant	Not Adjusted	12	Singapore	1 Mar 2003 - 31 May 2003	Hospital	Persons Under Investigation	Chen (2006d)
Age, Occupation, Other, Sex	Not Significant	Not Adjusted	12	Singapore	1 Mar 2003 - 31 May 2003	Hospital	Persons Under Investigation	Chen (2006d)
Cormobidity, Other	Not Significant	Not Adjusted	124	China; Hong Kong SAR; China	Sep 2004 - Nov 2005	Hospital	General Population	Yu (2007)
Other	Not Significant	Adjusted	124	China; Hong Kong SAR; China	Sep 2004 - Nov 2005	Hospital	General Population	Yu (2007)
Other	Not Significant	Adjusted	127	China	Sep 2004 - Nov 2005	Hospital	General Population	Sung (2009)
Other	Not Significant	Not Adjusted	127	China	Sep 2004 - Nov 2005	Hospital	General Population	Sung (2009)
Sex	Not Significant	Not Adjusted	77	China	5 Feb 2003 - 4 May 2003	Hospital	Persons Under Investigation	Shen (2004)
Other								
Age	Significant	Unspecified	44	Hong Kong SAR; China	14 Mar 2003 - 10 Jun 2003	Hospital	Children	Leung (2004c)
Age	Significant	Unspecified	44	Hong Kong SAR; China	14 Mar 2003 - 10 Jun 2003	Hospital	Children	Leung (2004c)
Age, Cormobidity, Other, Sex	Significant	Not Adjusted	76	Taiwan; China	8 Mar 2003 - 15 Jun 2003	Hospital	Persons Under Investigation	Wang (2004a)
Age, Cormobidity, Other, Sex	Significant	Not Adjusted	303	Hong Kong SAR; China	1 Jun 2004 - 31 Dec 2004	Hospital	Persons Under Investigation	Lee (2006b)
Age, Occupation	Significant	Adjusted	417	Singapore	24 Feb 2003 - 29 Apr 2003	Household	Other	Goh (2004)

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Risk Factor	Occupation	Method	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
Age, Occupation	Significant	Not Adjusted	417	Singapore	24 Feb 2003 - 29 Apr 2003	Household	Other	Goh (2004)
Age, Other	Significant	Adjusted	76	Taiwan; China	8 Mar 2003 - 15 Jun 2003	Hospital	Persons Under Investigation	Wang (2004a)
Close Contact, Other	Significant	Not Adjusted	273	Canada	Feb 2003 - Jun 2003	Hospital	Persons Under Investigation	Muller (2006)
Other	Significant	Adjusted		Hong Kong SAR; China	11 Mar 2003 - 22 May 2003	Hospital	Healthcare Workers	Lin (2006)
Other	Significant	Adjusted		Hong Kong SAR; China	11 Mar 2003 - 22 May 2003	Housing	General Population	Lin (2006)
Other	Significant	Adjusted		Hong Kong SAR; China	11 Mar 2003 - 22 May 2003	Community	General Population	Lin (2006)
Other	Significant	Adjusted	350	China	1 Jan 2003 - 31 May 2003	Mixed	Persons Under Investigation	Cai (2007)
Other	Significant	Not Adjusted	45	Singapore	Apr 2003 - Jun 2003	Hospital	Healthcare Workers	Wilder-Smith (2005)
Other	Significant	Not Adjusted	138	Hong Kong SAR; China	11 Mar 2003 - 25 Mar 2003	Hospital	Persons Under Investigation	Sung (2004)
Other	Significant	Not Adjusted	209	China	2003	Mixed	Persons Under Investigation	Cai (2006)
Other	Significant	Not Adjusted	350	China	1 Jan 2003 - 31 May 2003	Mixed	Persons Under Investigation	Cai (2007)
Other	Significant	Unspecified	8378	Singapore	13 Mar 2003 - 31 May 2003	Hospital	Persons Under Investigation	Tham (2004)
Other	Significant	Unspecified	45	Hong Kong SAR; China	24 Mar 2003 - 4 May 2003	Hospital	Persons Under Investigation	Chu (2005)
Age	Not Significant	Unspecified	44	Hong Kong SAR; China	14 Mar 2003 - 10 Jun 2003	Hospital	Children	Leung (2004c)
Age, Cormobidity, Other, Sex	Not Significant	Unspecified	45	Hong Kong SAR; China	24 Mar 2003 - 4 May 2003	Hospital	Persons Under Investigation	Chu (2005)
Age, Non-household Contact, Other, Sex	Not Significant	Not Adjusted	45	Singapore	Apr 2003 - Jun 2003	Hospital	Healthcare Workers	Wilder-Smith (2005)
Age, Occupation, Other, Sex	Not Significant	Not Adjusted	273	Canada	Feb 2003 - Jun 2003	Hospital	Persons Under Investigation	Muller (2006)
Age, Occupation, Other, Sex	Not Significant	Not Adjusted	209	China	2003	Mixed	Persons Under Investigation	Cai (2006)
Age, Other, Sex	Not Significant	Not Adjusted	138	Hong Kong SAR; China	11 Mar 2003 - 25 Mar 2003	Hospital	Persons Under Investigation	Sung (2004)
Age, Other, Sex	Not Significant	Not Adjusted	417	Singapore	24 Feb 2003 - 29 Apr 2003	Household	Other	Goh (2004)
Cormobidity, Other, Sex	Not Significant	Adjusted	76	Taiwan; China	8 Mar 2003 - 15 Jun 2003	Hospital	Persons Under Investigation	Wang (2004a)
Other	Not Significant	Adjusted	350	China	1 Jan 2003 - 31 May 2003	Mixed	Persons Under Investigation	Cai (2007)
Other	Not Significant	Not Adjusted	76	Taiwan; China	8 Mar 2003 - 15 Jun 2003	Hospital	Persons Under Investigation	Wang (2004a)
Other	Not Significant	Not Adjusted	350	China	1 Jan 2003 - 31 May 2003	Mixed	Persons Under Investigation	Cai (2007)
Hospitalisation	Unspecified	Unspecified	1512	Hong Kong SAR; China	3 Mar 2003 - 6 May 2003	Mixed	Mixed Groups	Riley (2003)
Death								
Age	Significant	Adjusted	46	Taiwan; China	18 Apr 2003 - 31 May 2003	Hospital	Persons Under Investigation	Lim (2003)
Age	Significant	Adjusted	138	Hong Kong SAR; China	11 Mar 2003 - 25 Mar 2003	Hospital	Persons Under Investigation	Lee (2003)
Age	Significant	Adjusted	267	Hong Kong SAR; China	26 Feb 2003 - 31 Mar 2003	Hospital	Mixed Groups	Choi (2003a)

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Risk Factor	Occupation	Method	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
Age	Significant	Not Adjusted	77	Hong Kong SAR; China	22 Feb 2003 - 31 May 2003	Hospital	Persons Under Investigation	Chan (2004a)
Age	Significant	Unspecified	2444	China	5 Mar 2003 - 20 May 2003	Hospital	Persons Under Investigation	Liang (2004)
Age	Significant	Unspecified	345	Taiwan; China	- 12 Oct 2003	Hospital	Persons Under Investigation	Chang (2007)
Age, Close Contact, Cormobidity, Other, Sex	Significant	Not Adjusted	1312	Hong Kong SAR; China	2003	Hospital	General Population	Chan (2007)
Age, Close Contact, Hospitalisation, Other	Significant	Not Adjusted	2521	China	Mar 2003 - 16 Aug 2003	Mixed	Persons Under Investigation	Chen (2005b)
Age, Close Contact, Other, Sex	Significant	Adjusted	1312	Hong Kong SAR; China	2003	Hospital	General Population	Chan (2007)
Age, Cormobidity, Hospitalisation, Occupation, Other	Significant	Not Adjusted	1649	China	2003 - 7 Jul 2003	Population	Persons Under Investigation	Liu (2006a)
Age, Cormobidity, Occupation, Other	Significant	Adjusted	3336	China; Hong Kong SAR; China; Taiwan; China		Population	General Population	Lau (2010)
Age, Cormobidity, Occupation, Other, Sex	Significant	Adjusted	1755	Hong Kong SAR; China		Population	Persons Under Investigation	Leung (2009b)
Age, Cormobidity, Occupation, Other, Sex	Significant	Not Adjusted	90	China	2003	Hospital	Mixed Groups	Wei (2009)
Age, Cormobidity, Occupation, Other, Sex	Significant	Not Adjusted	346	Taiwan; China		Population	General Population	Chang (2006a)
Age, Cormobidity, Other	Significant	Not Adjusted	76	Taiwan; China	8 Mar 2003 - 15 Jun 2003	Hospital	Persons Under Investigation	Wang (2004a)
Age, Cormobidity, Other	Significant	Not Adjusted	38	Canada	- 15 Apr 2003	Hospital	Persons Under Investigation	Fowler (2003)
Age, Cormobidity, Other, Sex	Significant	Adjusted		Canada; Hong Kong SAR; China		Hospital	Persons Under Investigation	Cowling (2006)
Age, Cormobidity, Other, Sex	Significant	Not Adjusted	218	Hong Kong SAR; China	26 Feb 2003 - 31 Mar 2003	Hospital	Persons Under Investigation	Tsang (2003a)
Age, Cormobidity, Other, Sex	Significant	Not Adjusted	234	Singapore		Hospital	Mixed Groups	Leong (2006a)
Age, Cormobidity, Other, Sex	Significant	Not Adjusted	668	Taiwan; China	14 Mar 2003 - 30 Jul 2003	Hospital	Persons Under Investigation	Chen (2005c)
Age, Hospitalisation, Occupation, Other	Significant	Adjusted	1649	China	2003 - 7 Jul 2003	Population	Persons Under Investigation	Liu (2006a)
Age, Occupation	Significant	Adjusted		China	3 Mar 2003 -	Hospital	Mixed Groups	Cooper (2009)
Age, Occupation, Other	Significant	Unspecified	78	Taiwan; China	Aug 2003 - Feb 2004	Hospital	Persons Under Investigation	Liu (2009b)
Age, Occupation, Other, Sex	Significant	Not Adjusted	5327	China	16 Nov 2002 - 2003	Population	General Population	Na (2009)
Age, Occupation, Sex	Significant	Not Adjusted		China	3 Mar 2003 -	Hospital	Mixed Groups	Cooper (2009)
Age, Other	Significant	Adjusted	82	China	2003	Hospital	Mixed Groups	Wei (2009)
Age, Other	Significant	Adjusted	5327	China	16 Nov 2002 - 2003	Population	General Population	Na (2009)
Age, Other	Significant	Adjusted	234	Singapore		Hospital	Mixed Groups	Leong (2006a)
Age, Other	Significant	Adjusted	401	China	Dec 2002 - Jun 2003	Hospital	Persons Under Investigation	Chen (2006c)
Age, Other	Significant	Adjusted	115	Hong Kong SAR; China	9 Mar 2003 - 31 May 2003	Hospital	General Population	Chan (2003c)
Age, Other	Significant	Adjusted	346	Taiwan; China		Population	General Population	Chang (2006a)
Age, Other	Significant	Not Adjusted	77	China	5 Feb 2003 - 4 May 2003	Hospital	Persons Under Investigation	Shen (2004)

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Risk Factor	Occupation	Method	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
Age, Other	Significant	Not Adjusted	46	Taiwan; China	18 Apr 2003 - 31 May 2003	Hospital	Persons Under Investigation	Lim (2003)
Age, Other	Significant	Not Adjusted	115	Hong Kong SAR; China	9 Mar 2003 - 31 May 2003	Hospital	General Population	Chan (2003c)
Age, Other	Significant	Unspecified	52	Taiwan; China	26 Apr 2003 - 25 May 2003	Hospital	Persons Under Investigation	Ko (2004a)
Age, Sex	Significant	Adjusted	1755	Hong Kong SAR; China	Mar 2003 - 22 Sep 2003	Hospital	Persons Under Investigation	Karlberg (2004)
Age, Sex	Significant	Not Adjusted	138	Hong Kong SAR; China	11 Mar 2003 - 25 Mar 2004	Hospital	Persons Under Investigation	Lee (2003)
Cormobidity, Other	Significant	Adjusted	76	Taiwan; China	8 Mar 2003 - 15 Jun 2003	Hospital	Persons Under Investigation	Wang (2004a)
Cormobidity, Other	Significant	Adjusted	218	Hong Kong SAR; China	26 Feb 2003 - 31 Mar 2003	Hospital	Persons Under Investigation	Tsang (2003a)
Cormobidity, Other, Sex	Significant	Adjusted	1755	Hong Kong SAR; China	15 Feb 2003 - 31 May 2003	Population	Persons Under Investigation	Leung (2004a)
Other	Significant	Adjusted	308	Hong Kong SAR; China	Feb 2003 - Jul 2003	Hospital	Persons Under Investigation	Virlogeux (2015)
Other	Significant	Adjusted	234	Hong Kong SAR; China	Feb 2003 - Jul 2003	Hospital	Persons Under Investigation	Virlogeux (2015)
Other	Significant	Adjusted	1632	China	15 Mar 2003 - 14 May 2003	Population	General Population	Zhang (2006)
Other	Significant	Not Adjusted	5327	China	Apr 2003 - May 2003	Population	Persons Under Investigation	Cui (2003)
Other	Significant	Not Adjusted	678	Hong Kong SAR; China	16 Apr 2003 -	Hospital	General Population	Chan (2003b)
Other	Significant	Not Adjusted	1373	Hong Kong SAR; China	Mar 2003 - Jul 2003	Hospital	General Population	Antonio (2005)
Other	Significant	Unspecified						Ho (2005)
Sex	Significant	Not Adjusted	1755	Hong Kong SAR; China	Mar 2003 - 22 Sep 2003	Hospital	Persons Under Investigation	Karlberg (2004)
Sex, Age, Occupation	Significant	Not Adjusted	1755	Hong Kong SAR; China	Feb 2003 - Jul 2003	Hospital	Mixed Groups	Virlogeux (2015)
Age, Occupation, Other	Not Significant	Adjusted	1755	Hong Kong SAR; China		Population	Persons Under Investigation	Leung (2009b)
Age, Other	Not Significant	Not Adjusted	1649	China	2003 - 7 Jul 2003	Population	Persons Under Investigation	Liu (2006a)
Age, Other, Sex	Not Significant	Adjusted	76	Taiwan; China	8 Mar 2003 - 15 Jun 2003	Hospital	Persons Under Investigation	Wang (2004a)
Age, Other, Sex	Not Significant	Adjusted	346	Taiwan; China		Population	General Population	Chang (2006a)
Close Contact, Other, Sex	Not Significant	Adjusted	1312	Hong Kong SAR; China	2003	Hospital	General Population	Chan (2007)
Cormobidity, Occupation, Other, Sex	Not Significant	Adjusted	82	China	2003	Hospital	Mixed Groups	Wei (2009)
Occupation, Other	Not Significant	Not Adjusted	5327	China	16 Nov 2002 - 2003	Population	General Population	Na (2009)
Occupation, Other, Sex	Not Significant	Not Adjusted	38	Canada	- 15 Apr 2003	Hospital	Persons Under Investigation	Fowler (2003)
Occupation, Sex	Not Significant	Adjusted	5327	China	16 Nov 2002 - 2003	Population	General Population	Na (2009)
Other	Not Significant	Adjusted	46	Taiwan; China	18 Apr 2003 - 31 May 2003	Hospital	Persons Under Investigation	Lim (2003)
Other	Not Significant	Adjusted	1755	Hong Kong SAR; China	Mar 2003 - 22 Sep 2003	Hospital	Persons Under Investigation	Karlberg (2004)
Other	Not Significant	Adjusted		Canada; Hong Kong SAR; China		Hospital	Persons Under Investigation	Cowling (2006)

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Risk Factor	Occupation	Method	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
Other	Not Significant	Adjusted	1632	China	15 Mar 2003 - 14 May 2003	Population	General Population	Zhang (2006)
Other	Not Significant	Not Adjusted	1755	Hong Kong SAR; China	Feb 2003 - Jul 2003	Hospital	Mixed Groups	Virlogeux (2015)
Other	Not Significant	Not Adjusted	90	China	2003	Hospital	Mixed Groups	Wei (2009)
Other	Not Significant	Not Adjusted	46	Taiwan; China	18 Apr 2003 - 31 May 2003	Hospital	Persons Under Investigation	Lim (2003)
Other	Not Significant	Not Adjusted	1743	Hong Kong SAR; China		Population	General Population	Lau (2009)
Other	Not Significant	Not Adjusted	234	Singapore		Hospital	Mixed Groups	Leong (2006a)
Other	Not Significant	Not Adjusted	374	Hong Kong SAR; China	16 Apr 2003 -	Hospital	General Population	Chan (2003b)
Other	Not Significant	Not Adjusted	1312	Hong Kong SAR; China	2003	Hospital	General Population	Chan (2007)
Other	Not Significant	Not Adjusted	346	Taiwan; China		Population	General Population	Chang (2006a)
Other	Not Significant	Not Adjusted	1373	Hong Kong SAR; China	Mar 2003 - Jul 2003	Hospital	General Population	Antonio (2005)
Other	Not Significant	Not Adjusted		China	3 Mar 2003 -	Hospital	Mixed Groups	Cooper (2009)
Other, Sex	Not Significant	Adjusted		China	3 Mar 2003 -	Hospital	Mixed Groups	Cooper (2009)
Other, Sex	Not Significant	Not Adjusted	76	Taiwan; China	8 Mar 2003 - 15 Jun 2003	Hospital	Persons Under Investigation	Wang (2004a)
Other, Sex	Not Significant	Not Adjusted	115	Hong Kong SAR; China	9 Mar 2003 - 31 May 2003	Hospital	General Population	Chan (2003c)
Sex	Not Significant	Adjusted	3336	China; Hong Kong SAR; China; Taiwan; China		Population	General Population	Lau (2010)
Sex	Not Significant	Adjusted	138	Hong Kong SAR; China	11 Mar 2003 - 25 Mar 2003	Hospital	Persons Under Investigation	Lee (2003)
Sex	Not Significant	Not Adjusted	2521	China	Mar 2003 - 16 Aug 2003	Mixed	Persons Under Investigation	Chen (2005b)
Sex	Not Significant	Unspecified	52	Taiwan; China	26 Apr 2003 - 25 May 2003	Hospital	Persons Under Investigation	Ko (2004a)
Age, Occupation, Other	Unspecified	Adjusted	1755	Hong Kong SAR; China	15 Feb 2003 - 31 May 2003	Population	Persons Under Investigation	Leung (2004a)
Cormobidity, Other	Unspecified	Unspecified	8	Taiwan; China	26 Mar 2003 - 25 May 2003	Hospital	Persons Under Investigation	Wong (2003)
Occupation	Unspecified	Unspecified	405	Hong Kong SAR; China	15 Feb 2003 - 31 May 2003	Hospital	Persons Under Investigation	Leung (2004a)
Serology								
Age	Significant	Not Adjusted		Hong Kong SAR; China	22 Feb 2003 - 31 May 2003	Hospital	Persons Under Investigation	Chan (2004a)
Age	Significant	Unspecified	375	Hong Kong SAR; China	4 Mar 2003 - 6 Jun 2003	Hospital	General Population	Chan (2004c)
Occupation	Significant	Not Adjusted	2197	Taiwan; China	1 Jul 2003 -	Hospital	Healthcare Workers	Wang (2007)
Occupation	Significant	Not Adjusted	882	Taiwan; China	1 Jul 2003 -	Contact	Healthcare Workers	Wang (2007)
Other	Significant	Adjusted						Ho (2005)
Age, Sex	Not Significant	Adjusted	665	Taiwan; China	Mar 2003 - Jul 2003	Community	Persons Under Investigation	Ho (2005)
Occupation, Sex	Not Significant	Not Adjusted	2197	Taiwan; China	1 Jul 2003 -	Hospital	Healthcare Workers	Wang (2007)

continued on next page

continued from previous page

Risk Factor	Occupation	Method	Sample Size	Country	Study Dates	Study Setting	Study Group	Source
Occupation, Sex	Not Significant	Not Adjusted	882	Taiwan; China	1 Jul 2003 -	Contact	Healthcare Workers	Wang (2007)
Other	Not Significant	Not Adjusted		Hong Kong SAR; China	Sep 2003 - Oct 2003	Population	Children	Lee (2006a)
Attack Rate								
Age, Sex	Significant	Unspecified		China	5 Mar 2003 - 20 May 2003	Population	General Population	Liang (2004)
Age, Sex	Significant	Unspecified		China	8 Mar 2003 - 28 May 2003	Population	General Population	Liang (2007)
Incidence								
Other	Significant	Unspecified		China	8 Mar 2003 - 28 May 2003	Population	General Population	Liang (2007)
Mortality								
Age	Significant	Unspecified		China	8 Mar 2003 - 28 May 2003	Population	General Population	Liang (2007)
Sex	Not Significant	Unspecified		China	8 Mar 2003 - 28 May 2003	Population	General Population	Liang (2007)
Recovery								
Age, Cormobidity, Other	Significant	Adjusted	88	Hong Kong SAR; China	9 Mar 2003 - 28 Apr 2003	Hospital	General Population	Lau (2004e)
Age, Cormobidity, Other	Significant	Not Adjusted	54		12 Mar 2003 - 18 Apr 2003	Hospital	Persons Under Investigation	Gomersall (2004)
Other, Sex	Not Significant	Adjusted	88	Hong Kong SAR; China	9 Mar 2003 - 28 Apr 2003	Hospital	General Population	Lau (2004e)
Other, Sex	Not Significant	Not Adjusted	54		12 Mar 2003 - 18 Apr 2003	Hospital	Persons Under Investigation	Gomersall (2004)
Fever being febrile								
Other	Significant	Unspecified		Singapore	22 Apr 2003 - 5 Jun 2003	Hospital	Healthcare Workers	Ho (2004)
Incubation Period								
Age, Occupation, Other	Significant	Adjusted	317	Canada; Hong Kong SAR; China		Population	Persons Under Investigation	Cowling (2007)
Age, Sex	Not Significant	Adjusted	317	Canada; Hong Kong SAR; China		Population	Persons Under Investigation	Cowling (2007)
Admission-Death Delay								
Age	Significant	Unspecified	345	Taiwan; China	- 12 Oct 2003	Hospital	Persons Under Investigation	Chang (2007)
Admission-Discharge Delay								
Age	Significant	Unspecified	345	Taiwan; China	- 12 Oct 2003	Hospital	Persons Under Investigation	Chang (2007)
Incidence Rate								
Occupation, Other	Significant	Adjusted	295	Hong Kong SAR; China	12 Apr 2003 - Jun 2003	Population	General Population	Bucchianeri (2010)
Occupation, Other	Not Significant	Adjusted	295	Hong Kong SAR; China	12 Apr 2003 - Jun 2003	Population	General Population	Bucchianeri (2010)

Table B.13: Published risk factors by outcome. Study characteristics are reported for each set of reported risk factors.

B.5 Additional Figures

B.5.1 Main text figures without quality assessment

Figures 3, 4, and 5 in the main manuscript only present parameters from papers with QA scores > 0.5. This section recreates these figures but without restrictions on QA scores. All extracted parameters are included.

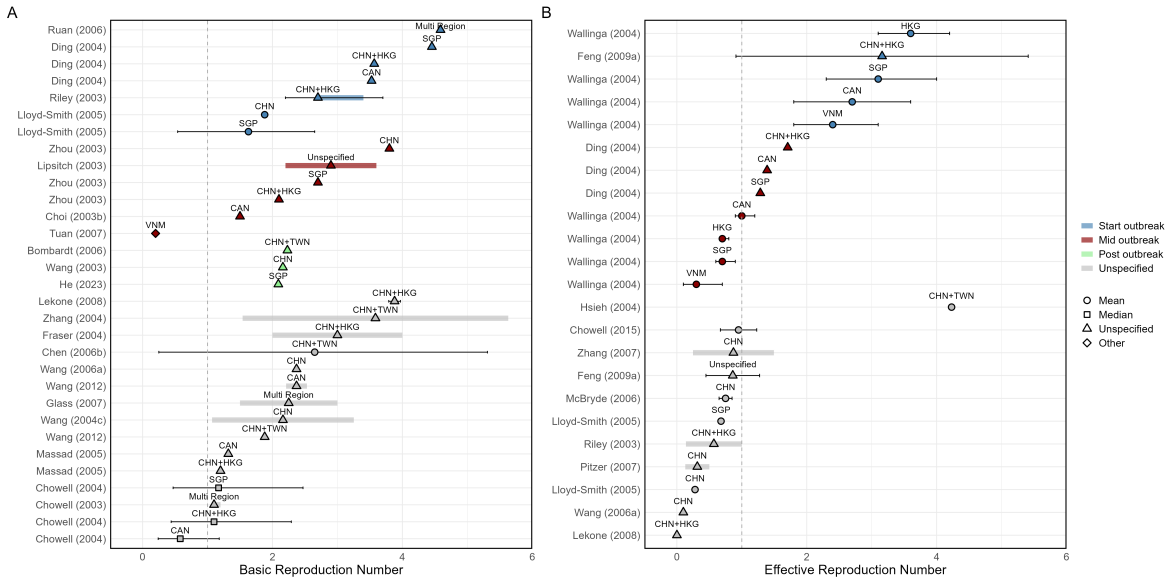


Figure B.4: Overview of estimated SARS (A) basic reproduction numbers (R_0) and (B) effective reproduction numbers (R_e). Note, that this Figure is analogous to Figure 3 in our main manuscript text, but with all parameters included, not just those from papers with QA scores > 0.5. Circles represent mean midpoint estimates, squares median midpoint estimates, diamonds "other" midpoint estimates, and triangles represent unspecified midpoint estimates. Thin solid lines represent uncertainty estimates, and solid shaded bars represent the range of central estimates when disaggregated by other parameters (e.g. age, sex, region, time). Colour represents when during the relative outbreak the study was conducted. Estimates are labelled with the country of study. CHN = China, HKG = Hong Kong, SGP = Singapore, CAN = Canada, TWN = Taiwan, VNM = Vietnam.

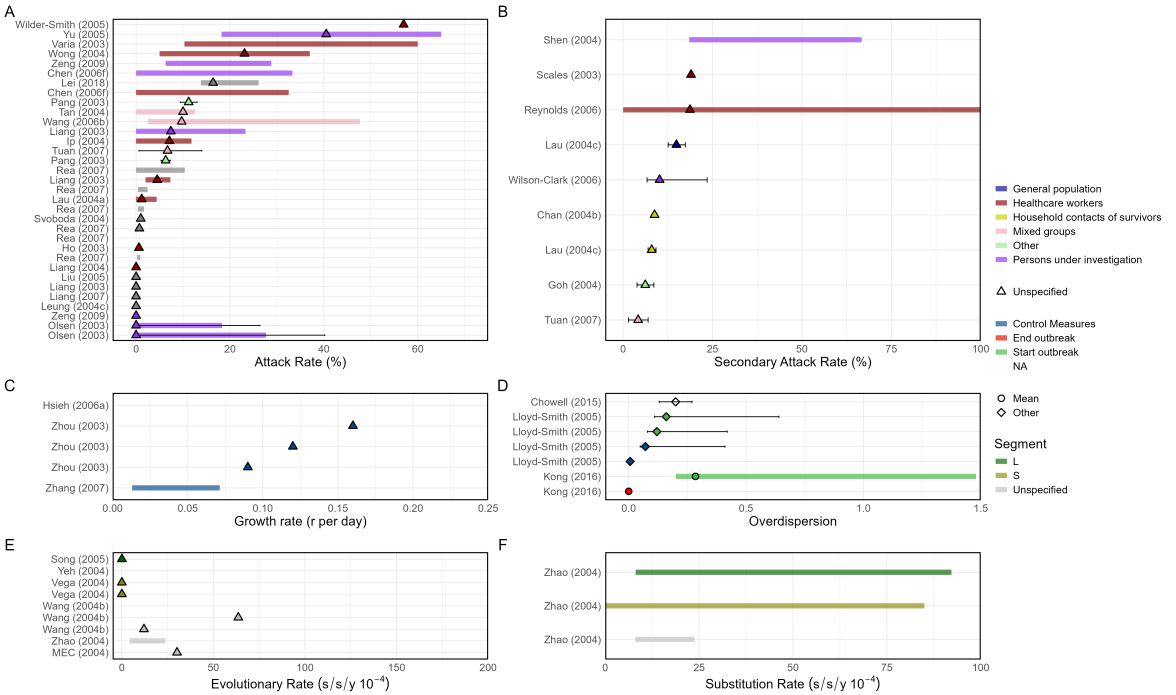
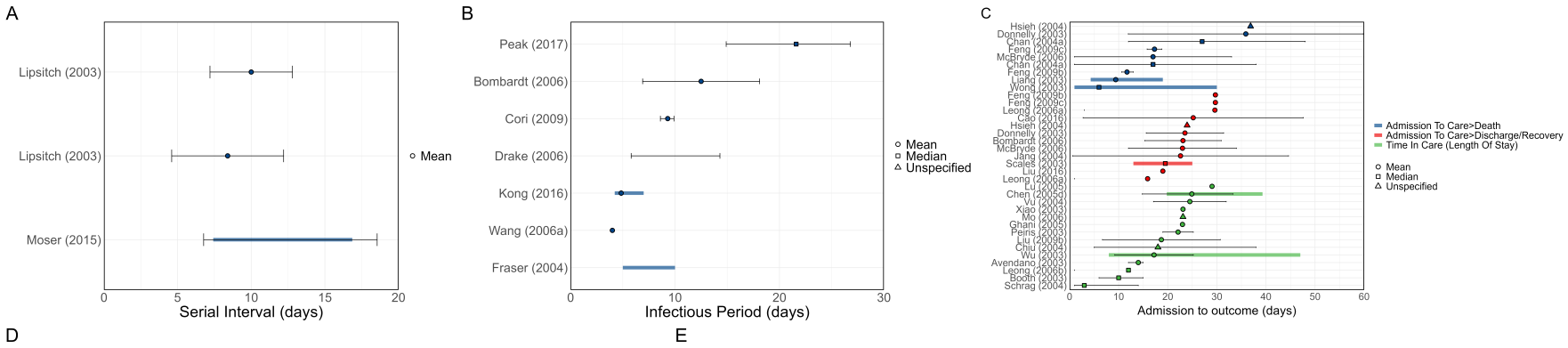


Figure B.5: Overview of estimated SARS (A) attack rates, (B) secondary attack rates, (C) growth rates, (D) overdispersion, (E) evolutionary rates, (F) substitution rates. Note, that this Figure is analogous to Figure 4 in our main manuscript text, but with all parameters included, not just those from papers with QA scores > 0.5. Circles represent mean midpoint estimates, diamonds represent "other" midpoint estimates, and triangles represent unspecified midpoint estimates. Thin solid lines represent uncertainty estimates, and solid shaded bars represent the range of central estimates when disaggregated by other parameters (e.g. age, sex, region, time), or broader unspecified parameter ranges. Colour represents (A & B) the study population considered, (C & D) when during the outbreak the study was conducted, where "control measures" refers to a time when interventions were reported to be in place, (E & F) long/short gene segment. S/s/y refers to nucleotide substitutions per site per year.



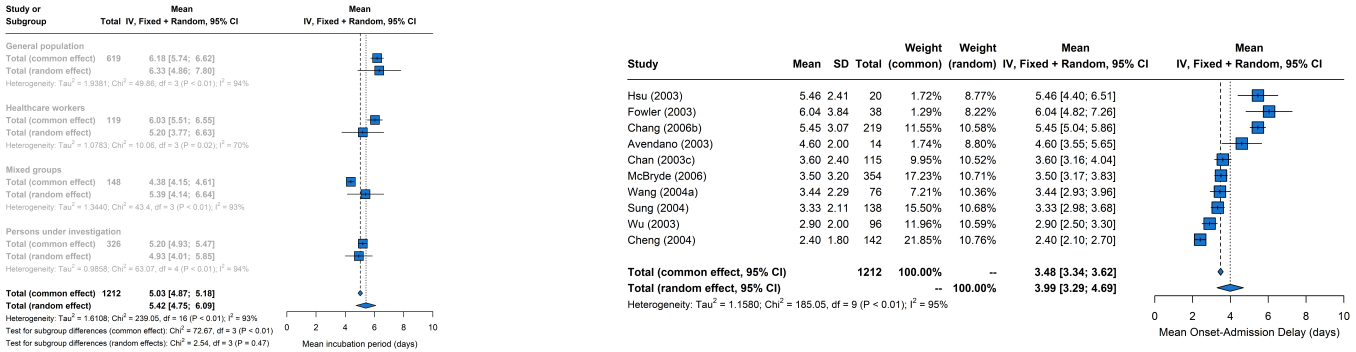


Figure B.6: Overview of SARS epidemiological delays – estimates of (A) serial interval, (B) infectious period, (C) time duration from hospital admission to final health outcome, and meta-analysis of epidemiological delays – central estimates of (D) incubation period, (E) time duration from symptom onset to hospital admission. Note, that this Figure is analogous Figure 5 in our main manuscript text, but with all parameters included, not just those from papers with QA scores > 0.5 (this has not impacted the meta-analysis as low quality studies had insufficient data to be included). In plots A, B, & C Circles represent mean midpoint estimates, squares represent median midpoint estimates, and triangles represent unspecified midpoint estimates. In plot C, colour represents different final health outcomes. In meta-analyses (D) blue squares indicate common effect and random effect estimates across different study populations, and blue diamonds represent: overall common effect estimates - in which all aggregated data are assumed to come from a single data-generating process, and overall random effect estimates, (E) blue squares represent study-specific estimates, and blue diamonds represent overall common effect and random effect estimates. Thin solid lines represent uncertainty estimates, and solid shaded bars represent the range of central estimates when disaggregated by other parameters (e.g. age, sex, region, time)

B.5.2 Alternate variable grouping

This section recreates figures from the main manuscript and elsewhere in the Supplementary Material, but visualing different grouping variables by colour. These plots are provided to aid interpretation of the role played by these grouping variables.

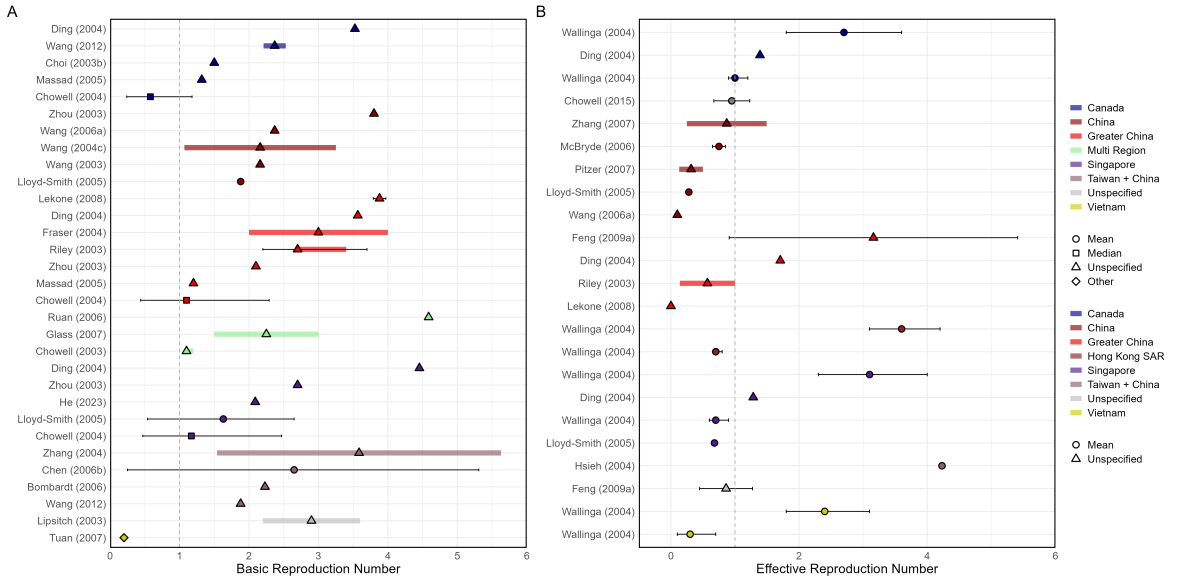


Figure B.7: Overview of estimated SARS (A) basic reproduction numbers (R_0) and (B) effective reproduction numbers (R_e). Note, that this Figure is analogous to Figure B.4 above, but where parameters are now colour-coded by study country, as opposed to when the study occurred. Circles represent mean midpoint estimates, squares median midpoint estimates, diamonds "other" midpoint estimates, and triangles represent unspecified midpoint estimates. Thin solid lines represent uncertainty estimates, and solid shaded bars represent the range of central estimates when disaggregated by other parameters (e.g. age, sex, region, time). Colour represents which country the study was conducted in.

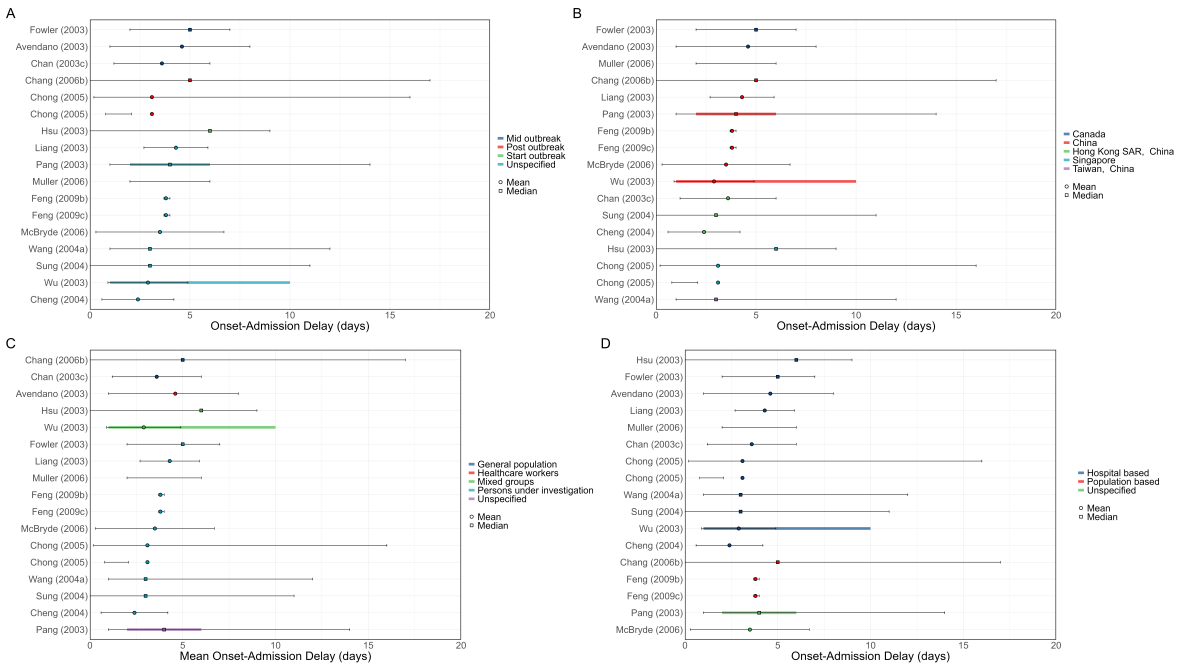


Figure B.8: Overview of estimated mean onset to admission delays sorted by different variables (A) outbreak phase (B) country (C) population group and (D) population setting for high QA score studies. Circles represent mean midpoint estimates, squares median midpoint estimates, diamonds "other" midpoint estimates, and triangles represent unspecified midpoint estimates. Thin solid lines represent uncertainty estimates, and solid shaded bars represent the range of central estimates when disaggregated by other parameters (e.g. age, sex, region, time). Colours represent the respective variables by which estimates are sorted by. Please note that Chong (2005) is plotted as stated in the paper (mean outside 95% CI).

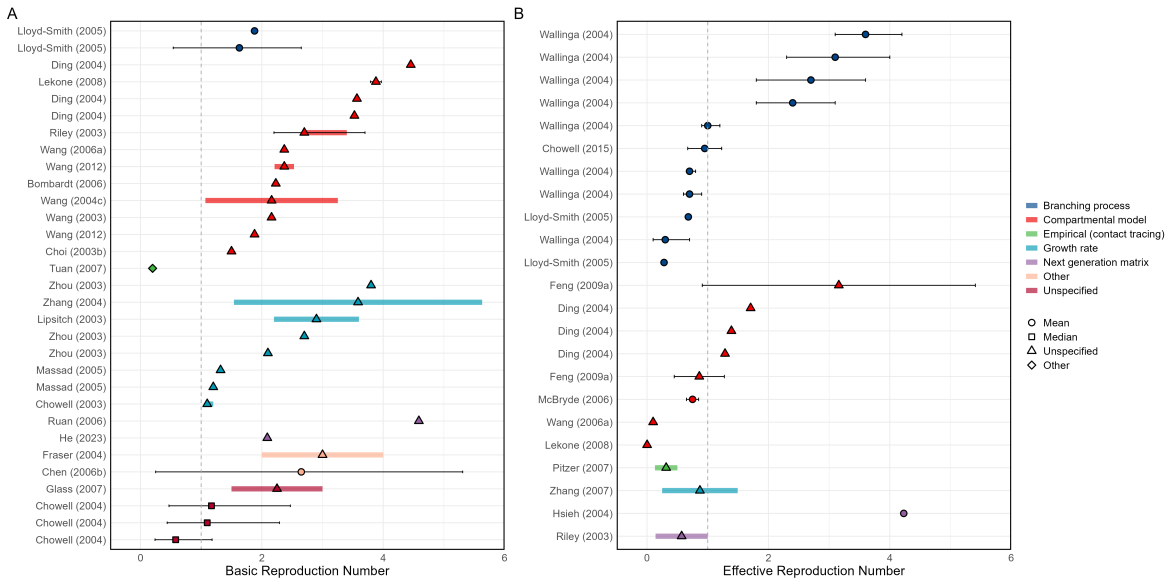


Figure B.9: Overview of estimated SARS (A) basic reproduction numbers (R_0) and (B) effective reproduction numbers (R_e). Note, that this Figure is analogous to Figure B.4 above, but where parameters are now colour-coded by the method by which the parameter was estimated, as opposed to when the study occurred. Circles represent mean midpoint estimates, squares median midpoint estimates, diamonds "other" midpoint estimates, and triangles represent unspecified midpoint estimates. Thin solid lines represent uncertainty estimates, and solid shaded bars represent the range of central estimates when disaggregated by other parameters (e.g. age, sex, region, time). Colour represents the method by which the parameter was estimated.

B.5.3 Individual study meta-analysis

In Figure 5D of the main text we plot the meta-analysis of mean incubation period estimates. In that Figure, blue squares represented only total common effects by study group. In Figure B.10 individual study effects are now also shown, presented as blue squares.

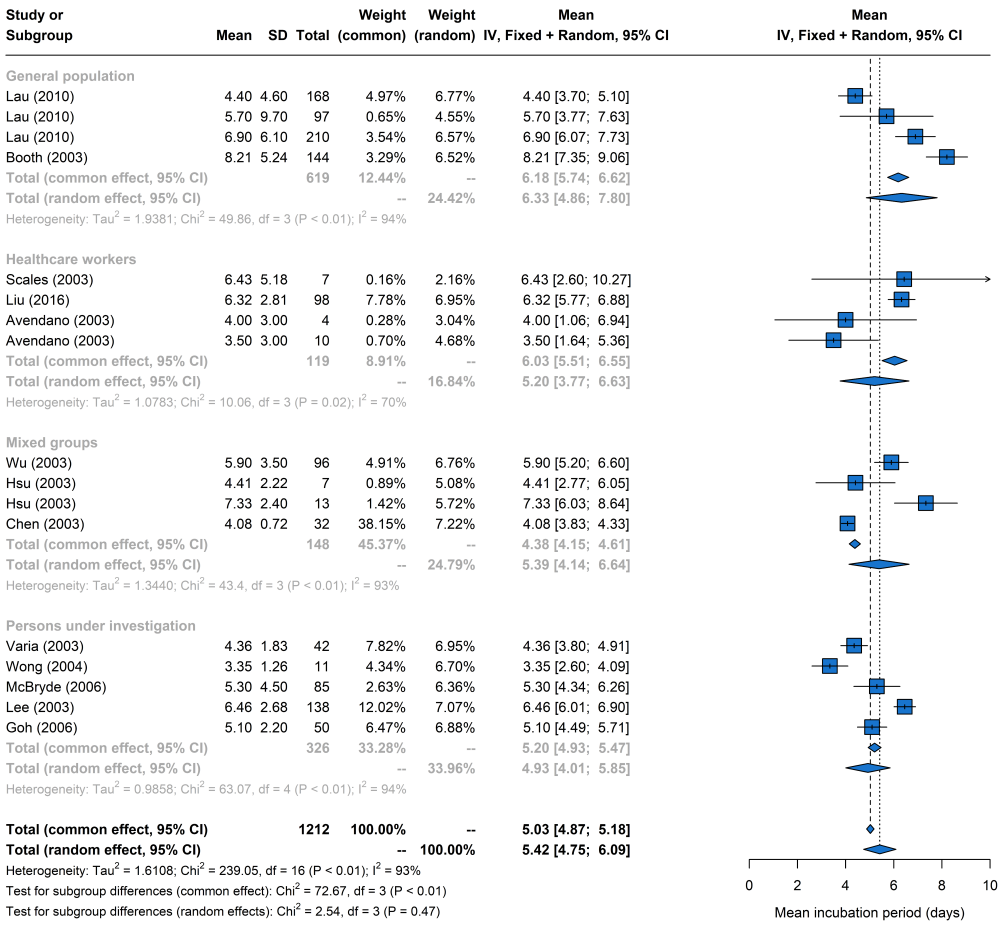


Figure B.10: A meta-analysis of the mean incubation period, subgrouped by the specific type of population studied. Blue squares represent study-specific estimates, and blue diamonds represent: common effect estimates - in which all aggregated data are assumed to come from a single data-generating process, and random effect estimates. Thin solid lines represent uncertainty estimates. Note, this figure only includes studies with a QA score greater than 0.5.

B.5.4 Risk factor plots

In this section we plot the reported risk factors for different epidemiological outcomes. This includes both significant and not significant risk factor reportings.

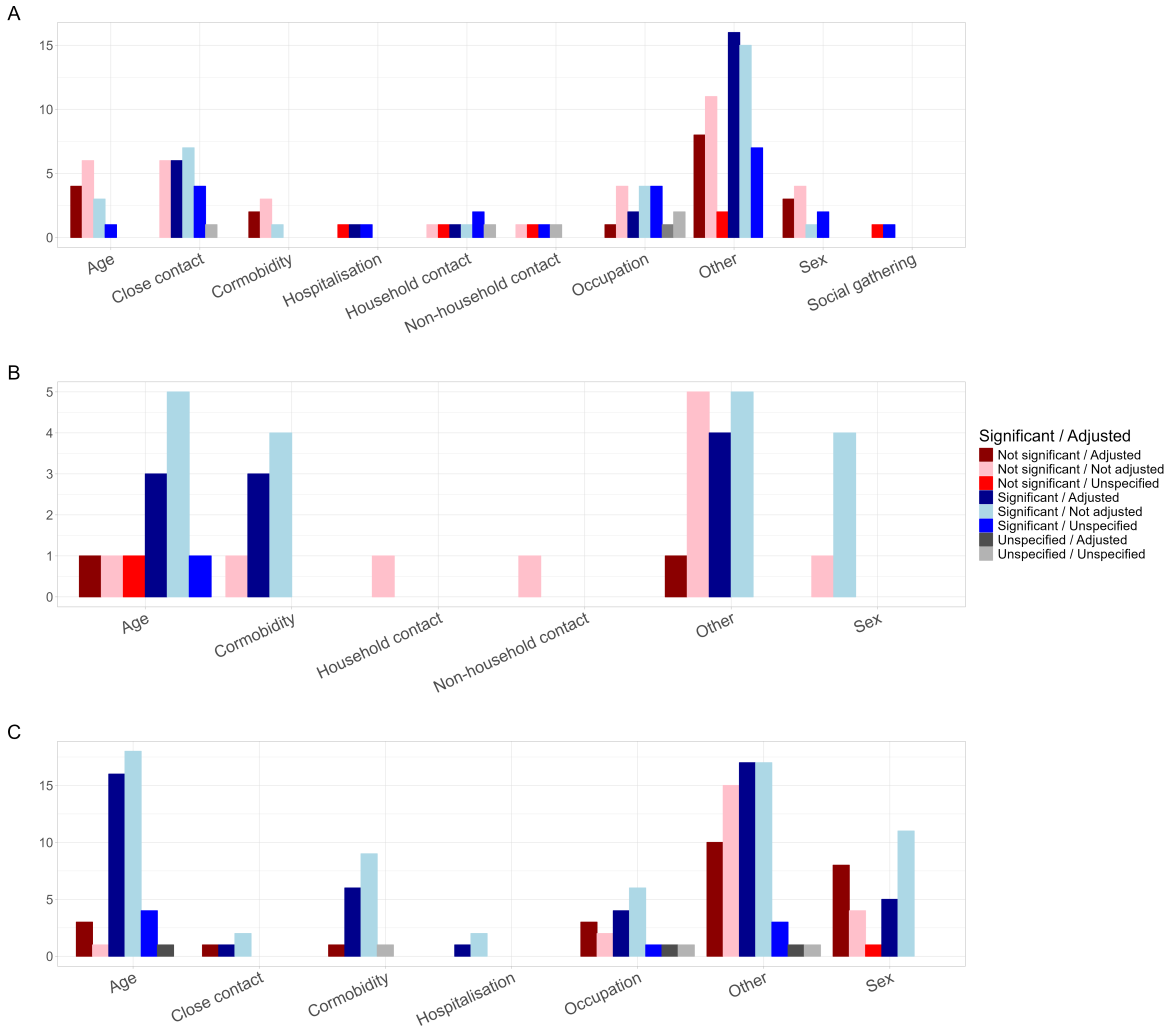


Figure B.11: Tally of reported significant and not significant risk factors associated with (A) infection, (B) severe disease, (C) death. Red shades indicate a non-significant relationship, blue shades represent a significant relationship, and grey shades an unspecified relationship. Different shades of these colours indicate whether the method used constitutes an adjusted or non-adjusted analysis. All risk factor studies are included here, regardless of QA score.

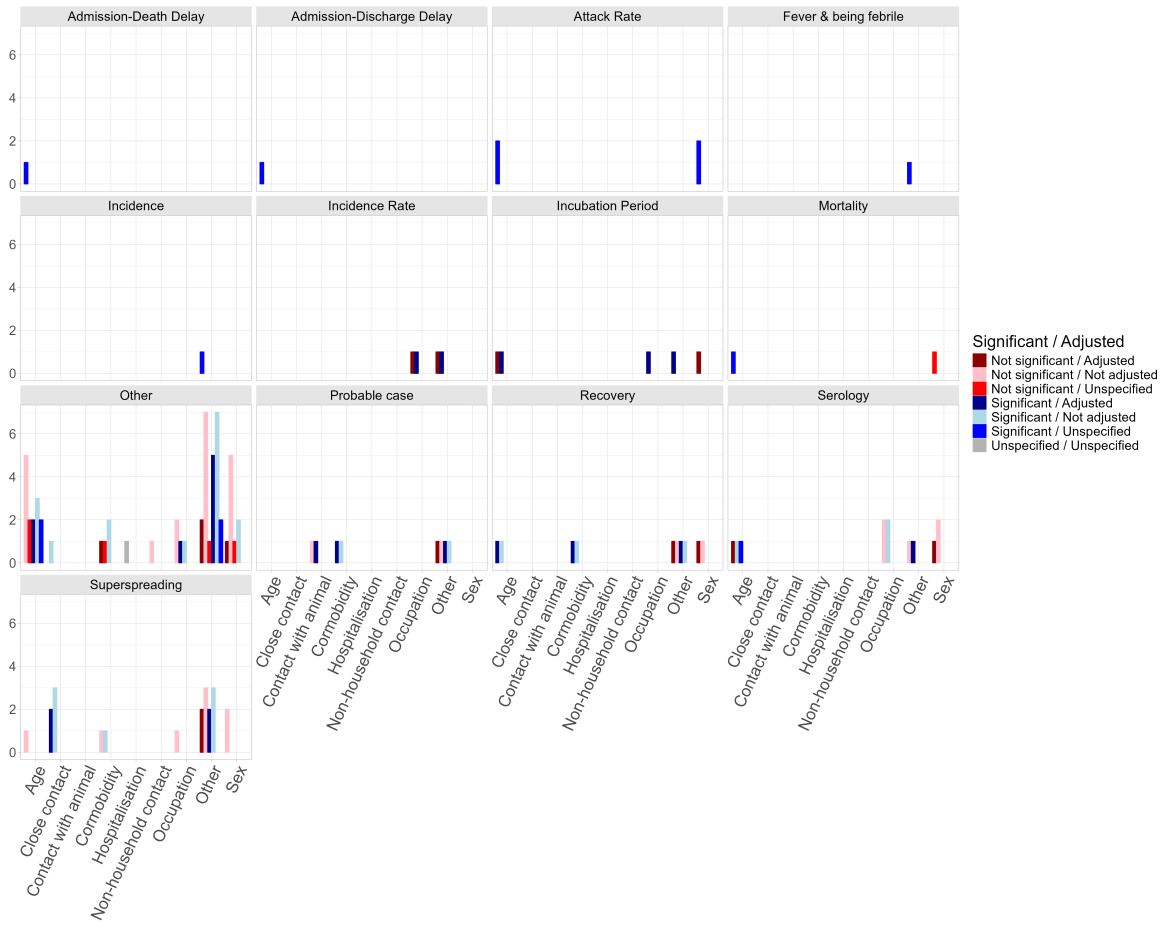


Figure B.12: Tally of reported significant and not significant risk factors associated with all other epidemiological phenomena and health outcomes. Red shades indicate a non-significant relationship, blue shades represent a significant relationship, and grey shades an unspecified relationship. Different shades of these colours indicate whether the method used constitutes an adjusted or non-adjusted analysis. All risk factor studies are included here, regardless of QA score.

B.6 Screening statistics

Both the initial screening and the full text review stages of study selection were conducted by two reviewers. This section reports the degrees of concordance between reviewers in this stage.

Screening

Reviewer A	Reviewer B	n	Proportionate Agreement	Yes Probability	No Probability	Random Agreement Probability	Cohen's Kappa
P1	P2	1768	89%	1%	79%	80%	46%
P3	P4	1427	96%	0%	93%	93%	50%
P3	P1	664	94%	1%	84%	85%	61%
P4	P5	729	95%	0%	88%	88%	55%
P5	P1	335	94%	0%	88%	89%	47%
P3	P2	1329	89%	2%	76%	78%	52%
P4	P1	3037	99%	0%	97%	97%	80%
P3	P5	306	96%	0%	90%	90%	65%
P5	P2	631	88%	1%	80%	81%	38%
P4	P2	1338	93%	1%	78%	80%	64%
P2	P6	337	84%	2%	72%	74%	41%
P7	P8	2408	98%	0%	96%	96%	43%
P7	P9	608	97%	0%	91%	91%	64%

Full Text

Reviewer A	Reviewer B	n	Proportionate Agreement	Yes Probability	No Probability	Random Agreement Probability	Cohen's Kappa
P3	P1	166	85%	26%	24%	50%	70%
P5	P1	124	75%	22%	28%	50%	50%
P3	P5	175	86%	18%	33%	51%	71%
P4	P1	101	85%	12%	43%	55%	67%
P7	P8	136	97%	1%	83%	84%	82%
P4	P5	22	82%	20%	29%	49%	65%
P3	P4	139	86%	5%	61%	66%	58%

Figure B.13: Cohen's Kappa for screening and full text review. P1-P9 are members of PERG (see appendix G), and we have provided who participated at each stage in the methods section of the main text. n is the number of studies considered by each Reviewer A/B pair. We highlight that *all* studies were screened by two people and any conflicts were resolved by discussion and mutual agreement of Reviewer A and B. The same applies to the subsequent Full text reviews.

C The `epireview` package

In parallel with this work, we developed an R package called `epireview` to provide a central location to host and access the extracted data for the nine priority pathogens in our review series. The package allows for submissions of outbreak, model, and parameter data from new peer-reviewed papers via pull requests, and includes functions to produce the tables and figures included in this paper and update them with any additional data. This package will be updated as the overall project by the Pathogen Epidemiology Review Group (PERG) continues to extract modelling parameters for the rest of the nine priority pathogens as defined by WHO.

There are several vignettes available:

- A vignette for Marburg Virus Disease, Lassa fever and SARS-CoV-1 with tables and figures from the respective papers, which will be updated as data are added to the database.
- A vignette that lists the options for each outbreak, model, or parameter field and describes how to access them using a function in the package.
- A vignette to explain the process of updating the database with new article, outbreak, model, or parameter data.

D PRISMA 2020 Checklists

TO BE UPDATED

Section & Topic	Item #	Checklist item	Reported (Yes/No)
Title			
Title	1	Identify the report as a systematic review.	Yes
Background			
Objectives	2	Provide an explicit statement of the main objective(s) or question(s) the review addresses.	Yes
Methods			
Eligibility criteria	3	Specify the inclusion and exclusion criteria for the review.	Yes
Information sources	4	Specify the information sources (e.g. databases, registers) used to identify studies and the date when each was last searched.	Yes
Risk of bias	5	Specify the methods used to assess risk of bias in the included studies.	Yes
Synthesis of results	6	Specify the methods used to present and synthesise results.	Yes
Results			
Included studies	7	Give the total number of included studies and participants and summarise relevant characteristics of studies.	Yes
Synthesis of results	8	Present results for main outcomes, preferably indicating the number of included studies and participants for each. If meta-analysis was done, report the summary estimate and confidence/credible interval. If comparing groups, indicate the direction of the effect (i.e. which group is favoured).	Yes
Discussion			
Limitations of evidence	9	Provide a brief summary of the limitations of the evidence included in the review (e.g. study risk of bias, inconsistency and imprecision).	Yes
Interpretation	10	Provide a general interpretation of the results and important implications.	Yes
Other			
Funding	11	Specify the primary source of funding for the review.	Yes
Registration	12	Provide the register name and registration number.	Yes

Table D.14: PRISMA 2020 Abstracts Checklist. ([10])

Section & Topic	Item #	Checklist item	Location where item is reported
Title			
Title	1	Identify the report as a systematic review.	page 1
Abstract			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Table D.14
Introduction			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	page 2
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	page 2/3
Methods			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	page 3

Table D.15: PRISMA 2020 Checklist. ([10])

Section & Topic	Item #	Checklist item	Location where item is reported
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	page 3
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	page 3 + Figure 1
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	page 3
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	page 3/4
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	page 3/4
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	page 3/4
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	page 4
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	page 3/4
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	page 4
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	page 4
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	page 4
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	page 4
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	-
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	-
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	page 4
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	page 4
Results			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	page 4
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Table ??
Study characteristics	17	Cite each included study and present its characteristics.	pages 4-13
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	page 7
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	pages 4-13

Table D.15: PRISMA 2020 Checklist. ([10])

Section & Topic	Item #	Checklist item	Location where item is reported
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	page 6/7
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	page 4-13
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	page 4-13
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	page 4-13
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	page 7
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	pages 4-13
Discussion			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	page 14/15
	23b	Discuss any limitations of the evidence included in the review.	page 14-15
	23c	Discuss any limitations of the review processes used.	page 14-15
	23d	Discuss implications of the results for practice, policy, and future research.	page 14-15
Other Information			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	page 14
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	page 16
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	n/a
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	page 15/16
Competing interests	26	Declare any competing interests of review authors.	page 16
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	page 16

Table D.15: PRISMA 2020 Checklist. ([10])

E Other Systematic Reviews

Systematic reviews were excluded from our analysis, but the systematic reviews that were identified in the database search and used for validation purposes are presented in Table E.16.

Study	Title	Journal	DOI
Vink 2014	Serial intervals of respiratory infectious diseases: a systematic review and analysis	Am J Epidemiol	10.1093/aje/kwu209
Tran 2012	Aerosol generating procedures and risk of transmission of acute respiratory infections to healthcare workers: a systematic review	PLoS One	10.1371/journal.pone.0035797
Olowokure 2004	SARS	Nat Rev Microbiol	10.1038/nrmicro824
Kwok 2019	Epidemic Models of Contact Tracing: Systematic Review of Transmission Studies of Severe Acute Respiratory Syndrome and Middle East Respiratory Syndrome	Comput Struct Biotechnol J	10.1016/j.csbj.2019.01.003
Jefferson 2008	Physical interventions to interrupt or reduce the spread of respiratory viruses: systematic review	Bmj	10.1136/bmj.39393.510347.BE
Lessler 2009	Incubation periods of acute respiratory viral infections: a systematic review	Lancet Infect Dis	10.1016/s1473-3099(09)70069-6
Donnelly 2004	Epidemiological and genetic analysis of severe acute respiratory syndrome	Lancet Infect Dis	10.1016/s1473-3099(04)01173-9
Bin-Reza 2012	The use of masks and respirators to prevent transmission of influenza: a systematic review of the scientific evidence	Influenza Other Respir Viruses	10.1111/j.1750-2659.2011.00307.x
Chan 2021	Transmission of Severe Acute Respiratory Syndrome Coronavirus 1 and Severe Acute Respiratory Syndrome Coronavirus 2 During Aerosol-Generating Procedures in Critical Care: A Systematic Review and Meta-Analysis of Observational Studies*	CRITICAL CARE MEDICINE	10.1097/CCM.0000000000004965
BinNafisah 2021	The risk of coronavirus to healthcare providers during aerosol-generating procedures: A systematic review and meta-analysis	ANNALS OF THORACIC MEDICINE	10.4103/atm.ATM_497_20
Barman 2022	Respiratory rehabilitation in patients recovering from severe acute respiratory syndrome: A systematic review and meta-analysis.	Heart Lung	10.1016/j.hrtlng.2022.01.005
Yiwen 2010	A comprehensive systematic review of healthcare workers' perceptions of risk from exposure to emerging acute respiratory infectious diseases and the perceived effectiveness of strategies used to facilitate healthy coping in acute hospital and community healthcare settings	JBI Libr Syst Rev	
Stockman 2006	SARS: systematic review of treatment effects	PLoS Med	10.1371/journal.pmed.0030343
Pedrosa 2011	Viral infections in workers in hospital and research laboratory settings: a comparative review of infection modes and respective biosafety aspects	Int J Infect Dis	10.1016/j.ijid.2011.03.005
Patarcic 2015	The role of host genetic factors in respiratory tract infectious diseases: systematic review, meta-analyses and field synopsis	Sci Rep	10.1038/srep16119
Offeddu 2017	Effectiveness of Masks and Respirators Against Respiratory Infections in Healthcare Workers: A Systematic Review and Meta-Analysis	Clin Infect Dis	10.1093/cid/cix681
Mair-Jenkins 2015	The effectiveness of convalescent plasma and hyperimmune immunoglobulin for the treatment of severe acute respiratory infections of viral etiology: a systematic review and exploratory meta-analysis	J Infect Dis	10.1093/infdis/jiu396

Table E.16: Other reviews of SARS identified during manuscript screening.

Study	Title	Journal	DOI
Momattin 2013	Therapeutic options for Middle East respiratory syndrome coronavirus (MERS-CoV)–possible lessons from a systematic review of SARS-CoV therapy	Int J Infect Dis	10.1016/j.ijid.2013.07.002
Liu 2004	Chinese herbal medicine for severe acute respiratory syndrome: a systematic review and meta-analysis	J Altern Complement Med	10.1089/acm.2004.10.1041
Li 2007	Role of ventilation in airborne transmission of infectious agents in the built environment - a multidisciplinary systematic review	Indoor Air	10.1111/j.1600-0668.2006.00445.x
Kramer 2006	How long do nosocomial pathogens persist on inanimate surfaces? A systematic review	BMC Infect Dis	10.1186/1471-2334-6-130
Koh 2011	Comprehensive systematic review of healthcare workers' perceptions of risk and use of coping strategies towards emerging respiratory infectious diseases	Int J Evid Based Healthc	10.1111/j.1744-1609.2011.00242.x
Jefferson 2009	Physical interventions to interrupt or reduce the spread of respiratory viruses: systematic review	Bmj	10.1136/bmj.b3675
Browne 2016	The roles of transportation and transportation hubs in the propagation of influenza and coronaviruses: a systematic review	J Travel Med	10.1093/jtm/tav002
Teasdale 2014	Public perceptions of non-pharmaceutical interventions for reducing transmission of respiratory infection: systematic review and synthesis of qualitative studies	BMC Public Health	10.1186/1471-2458-14-589

Table E.16: Other reviews of SARS identified during manuscript screening.

F Excluded Studies

We list all excluded studies with reasons for exclusion in the Priority Pathogens GitHub repo. The full list can be access at `https://github.com/mrc-ide/priority-pathogens/blob/main/data/SARS-CoV-1_excluded_studies.csv`

Title	Pubmed link
Efficiency of the quarantine system during the epidemic of severe acute respiratory syndrome in Beijing, 2003	https://pubmed.ncbi.nlm.nih.gov/14761622/
Epidemiologic features, clinical diagnosis and therapy of first cluster of patients with severe acute respiratory syndrome in Beijing area	https://pubmed.ncbi.nlm.nih.gov/12899773/
Study on the epidemiology and measures for control on severe acute respiratory syndrome in Guangzhou city	https://pubmed.ncbi.nlm.nih.gov/12820926/
An epidemiological study on the index cases of severe acute respiratory syndrome occurred in different cities among Guangdong province	https://pubmed.ncbi.nlm.nih.gov/12820924/
Effectiveness of personal protective measures in prevention of nosocomial transmission of severe acute respiratory syndrome	https://pubmed.ncbi.nlm.nih.gov/15061941/

Table F.17: Excluded Chinese language papers identified during reverse search of other systematic reviews.

G Pathogen Epidemiology Review Group (PERG) membership

First name	Surname	Affiliation
Aaron	Morris	University of Oxford
Alpha	Forna	University of Georgia
Amy	Dighe	Johns Hopkins
Anna	Vicco	Imperial College London
Anna-Maria	Hartner	Imperial College London
Anne	Cori	Imperial College London
Arran	Hamlet	Imperial College London
Ben	Lambert	University of Oxford
Bethan	Cracknell Daniels	Imperial College London
Charles	Whittaker	Imperial College London
Christian	Morgenstern	Imperial College London
Cosmo	Santoni	Imperial College London
Cyril	Geismar	Imperial College London
Dariya	Nikitin	Imperial College London
David	Jorgensen	Imperial College London
Dominic	Dee	Imperial College London
Ed	Knock	Imperial College London
Gina	Cuomo-Dannenburg	Imperial College London
Hayley	Thompson	PATH
Ilaria	Dorigatti	Imperial College London
Isobel	Routledge	UCSF
Jack	Wardle	Imperial College London
Janetta	Skarp	Imperial College London
Joseph	Hicks	Imperial College London
Juliette	Unwin	University of Bristol
Kanchan	Parchani	Imperial College London
Keith	Fraser	Imperial College London
Kelly	Charniga	Imperial College London
Kelly	McCain	Imperial College London
Kieran	Drake	Imperial College London
Lily	Geidelberg	Imperial College London
Lorenzo	Cattarino	UKHSA
Mantra	Kusumgar	Imperial College London
Mara	Kont	Imperial College London
Marc	Baguelin	Imperial College London
Natsuko	Imai-Eaton	Wellcome Trust
Pablo	Perez Guzman	Imperial College London
Patrick	Doohan	Imperial College London
Paul	Lietar	Imperial College London
Paula	Christen	Imperial College London
Rebecca	Nash	Imperial College London
Rich	Fitzjohn	Imperial College London

Richard	Sheppard	Imperial College London
Rob	Johnson	Imperial College London
Ruth	McCabe	Imperial College London
Sabine	van Elsland	Imperial College London
Sangeeta	Bhatia	UK Health Security Agency
Sequoia	Leuba	Imperial College London
Shazia	Ruybal-Pesantez	Imperial College London
Sreejith	Radhakrishnan	University of Glasgow
Thomas	Rawson	Imperial College London
Tristan	Naidoo	Imperial College London
Zulma	Cucunuba Perez	Pontificia Universidad Javeriana

Table G.18: Pathogen Epidemiology Review Group (PERG) membership as of July 2024.

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