

Rapid review of the evidence on transmission dynamics of COVID-19

Protocol for a living evidence review (Version 2: 5th October 2020)

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Keywords

COVID-19; SARS-CoV-2; transmission.

Background

Transmission of the SARS-CoV-2 virus and the disease it causes is poorly understood, and public health measures for restricting transmission are based on limited information. Since this issue is critical for understanding how best for populations to live with the virus, we are undertaking a rapid review of the evidence as it emerges, to collate, summarise and where possible combine numerical estimates to give the best available evidence for making public health and individual care decisions.

This is a rapid, living review, updated as important new information becomes available. We publish this protocol and amendments, and publish online data extractions and summaries of included studies with brief comments at cebm.com, openly available to the public. We assess the level of available evidence and its quality, and indicate where further research is needed.

Objectives

Objectives are to provide a rapid summary and evaluation of relevant data on transmission of SARS-CoV-2, report important policy implications, and highlight areas of research urgently needed. These transmission areas include airborne, contact and droplet, orofecal, vertical, fomite and other modes such as urine and blood.

Methods

Search Strategy

The following electronic databases are searched, with searches being updated approximately each month: LitCovid, medRxiv, Google Scholar and the WHO Covid-19 database. Search terms are Covid-19, SARS-CoV-2, transmission, and appropriate synonyms. The reference lists of included studies are searched for additional relevant studies.

Study inclusion and exclusion

Eligible studies are on any potential mode of transmission, including droplet, airborne, fomite, fecal-oral, bloodborne, vertical or other. Studies can be observational including case series, ecological, or prospective; or interventional including randomised trials. Studies on factors influencing transmission are included, such as location settings, meteorological or immunological factors.

Studies incorporating models to describe observed data are included. Studies reporting solely predictive modelling are excluded.

Data extraction

Study data are extracted into data extraction templates, which are published on the CEBM website¹.

Data extraction is performed by one author and checked by a second author. Where there is disagreement, a third author arbitrates.

Quality assessment

Included studies quality is assessed based on a modified Quadas-2 tool using five criteria: (1) a clearly defined setting; (2) demographic characteristics or sampling procedures adequately described; (3) follow-up duration sufficient for the outcomes; (4) the transmission outcomes assessed adequately; (5) main biases that are threats to validity taken into consideration. Quality assessment is performed by one author and checked by a second author. In the case of disagreement a third author arbitrates.

Data synthesis and reporting

Outcomes are specified within each review. We follow PRISMA reporting guidelines as indicated for scoping reviews². We summarise data narratively and report the outcomes as stated in the paper, including quantitative estimates where feasible and relevant. We report the detection of live culture of SARS-CoV-2 when reported. Where possible, compatible datasets may be pooled for meta-analysis. We write to authors for clarification of data, and also report research and policy implications.

Continual data release

Summary descriptions of important relevant research papers identified are published in an ongoing manner at CEBM¹. As important new data accumulates, we produce a report as an individual rapid review and make this publicly available via a preprint server whilst submitting for publication in a peer-review journal. We index the review findings on the Oxford Research Archive³.

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References

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