



THE EFFECT OF PUBLIC HEALTH & SOCIAL MEASURES (PHSM) IMPLEMENTED DURING THE COVID-19 PANDEMIC: AN OVERVIEW OF SYSTEMATIC REVIEWS

Who is this summary for?

People making decisions concerning strategies for implementing PHSM during public health emergencies like the COVID-19 pandemic.



This summary includes:

- ⇒ Key findings from an overview of systematic reviews
- ⇒ Implementation considerations



This summary does not include:

- ⇒ Recommendations
- ⇒ Detailed descriptions of interventions and their implementation

What is an overview of systematic reviews?

Overviews of reviews use explicit and systematic methods to search for and identify multiple systematic reviews on related research questions in the same topic area to extract and analyze their results across important outcomes.



This summary is based on the following overview of systematic reviews:

Fadlallah, R., El-Jardali, F., Karroum, L. B., Kalach, N., Hoteit, R., Aoun, A., ... & Akl, E. A. (2024). The effects of public health and social measures (PHSM) implemented during the COVID-19 pandemic: An overview of systematic reviews. *Cochrane Evidence Synthesis and Methods*, 2(5), e12055. <https://doi.org/10.1002/cesm.12055>



THE EFFECT OF PUBLIC HEALTH & SOCIAL MEASURES (PHSM) IMPLEMENTED DURING THE COVID-19 PANDEMIC: AN OVERVIEW OF SYSTEMATIC REVIEWS

PHSM refer to non-pharmaceutical interventions implemented by individuals, communities & governments to reduce the risk & scale of transmission of infectious diseases by reducing transmission-relevant exposures &/or making them safer.

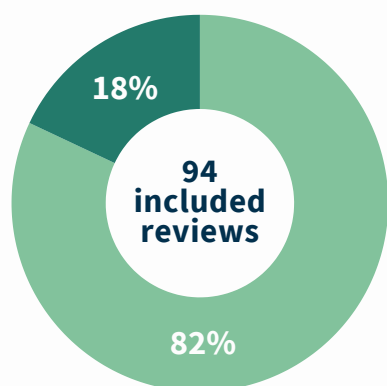
Research aim:

To systematically review the evidence on the effectiveness & unintended health & socio-economic consequences of PHSM on COVID-19.

Policy aim:

To promote equitable and evidence-informed policy decisions on PHSM implementation for future health emergencies.

How many reviews were included in the overview?



Included reviews were published between

December 2019 - September 2022

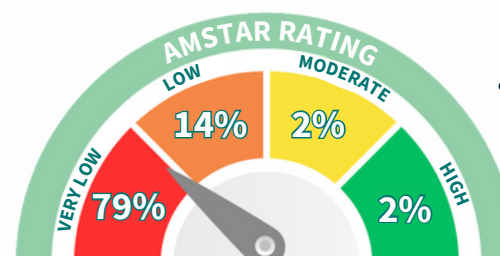
■ Systematic reviews
■ Rapid reviews

What was the quality of included reviews?

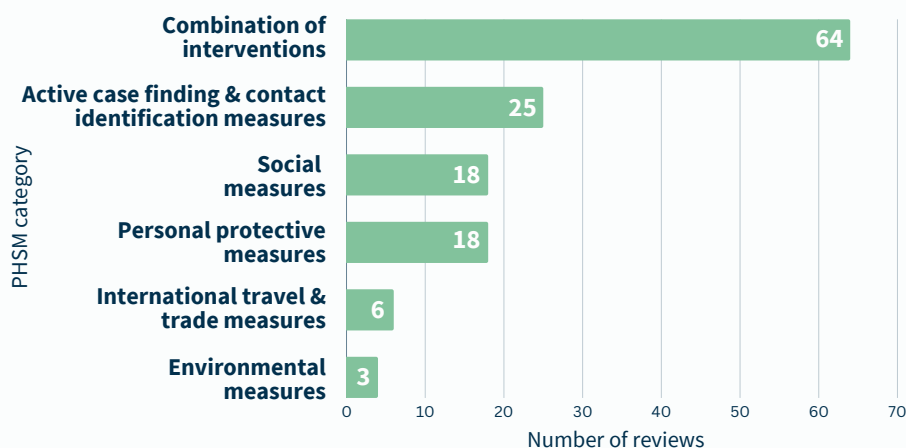
AMSTAR is an instrument used in assessing the methodological quality of systematic reviews

Top issues undermining the quality of the included reviews:

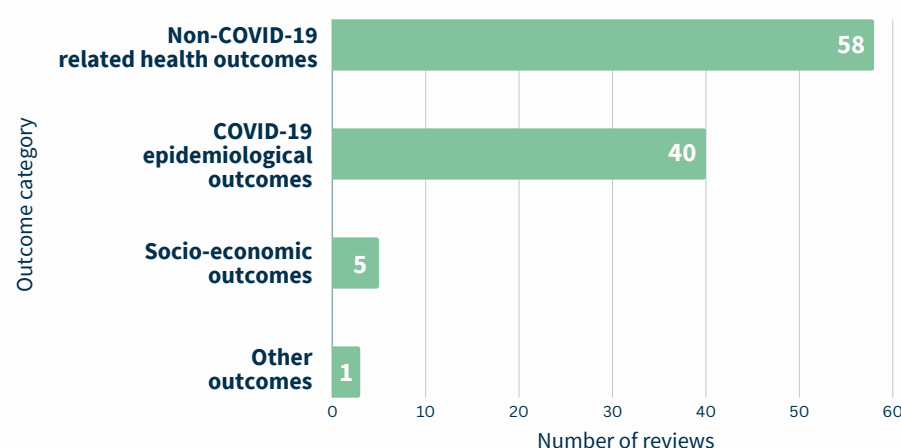
- Absence of a priori protocol
- Inadequate search strategy that lacked comprehensiveness
- Failure to include a list of excluded studies with the justifications for exclusion



What types of PHSM categories were identified?



What types of outcomes were identified?



ACTIVE CASE FINDING & CONTACT IDENTIFICATION MEASURES: EFFECTIVENESS & UNINTENDED CONSEQUENCES DURING THE COVID-19 PANDEMIC

25 of 94
reviews reported on
this measure
(Dec 2019 - Sept 2022)

Active case finding & contact identification measures refer to essential strategies that (i) identify, (ii) track & (iii) manage potential & confirmed cases of diseases (e.g. case finding, contact tracing, testing, isolation & quarantine).

+ Reported benefits:

Contact tracing:

- Reduced number of infections (3 reviews)
- Reduced spread of the disease (3 reviews)
- Reduced number of deaths from COVID-19 (3 reviews)

Isolation:

- Reduced number of infections (5 reviews)
- Reduced spread of the disease (5 reviews)
- Reduced number of deaths from COVID-19 (5 reviews)

Quarantine:

- Reduced number of infections (4 reviews)
- Reduced spread of the disease (4 reviews)
- Reduced number of deaths from COVID-19 (4 reviews)

Testing:

- Reduced number of infections (2 reviews)
- Reduced spread of the disease (2 reviews)
- Reduced number of deaths from COVID-19 (2 reviews)
- Reduced COVID-19 related hospitalizations (4 reviews)

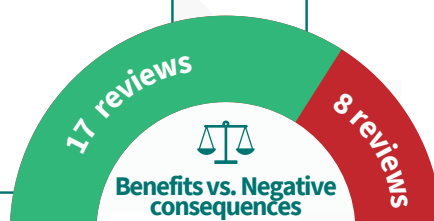
- Reported negative consequences:

Quarantine:

- Decreased mental health & well-being (5 reviews)
- Disrupted sleeping patterns (4 reviews)
- Increased alcohol use (2 reviews)
- Extended work absences (1 review)

Isolation:

- Decreased mental health & well-being (4 reviews)
- Increased alcohol use (1 review)



Effectiveness of PHSM by setting:

Isolation

- ? Long-term care settings

Quarantine

- ✓ Long-term care settings
- ? Point of entry

Testing

- ✓ Healthcare facilities
- ? Schools
- ? Mass gatherings

✓ Effectiveness observed ? Effectiveness uncertain



Implementation considerations:



Early initiation



Test sensitivity, rate of testing, proportion of population tested & turnaround time



Adherence to measures



Wider coverage (geographical & population)



Level of enforcement



Combination with other PHSM

18 of 94
reviews reported on
this measure
(Dec 2019 - Sept 2022)

Reported benefits:

- Reduced probability of outbreaks (1 review)

– Reported negative consequences:

- Increased economic & employment insecurity (2 reviews)

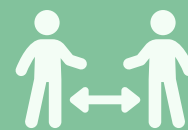


 Communities

- ✔ Long-term care settings

 Schools

✔ Effectiveness observed ? Effectiveness uncertain



Implementation considerations:



Early initiation



Population demographics & density



Level of community transmission



- Availability of mitigation measures (e.g. subsidies)



- Existence of robust health data infrastructure



Adherence to measures



Stringent & extended
implementation of measure



Type of schooling
(primary vs secondary)



Combination with other PHSM



PERSONAL PROTECTION MEASURES: EFFECTIVENESS & UNINTENDED CONSEQUENCES DURING THE COVID-19 PANDEMIC

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reviews reported on
this measure
(Dec 2019 - Sept 2022)

Personal protection measures involve personal protective equipment & personal hygiene behaviors (e.g. mask-wearing, hand hygiene & respiratory etiquette).

+ Reported benefits:

Eye protection:

- Reduced number of infections (1 review)

Hand washing:

- Reduced number of infections (4 reviews)
- Reduced spread of the disease (3 reviews)

Mask-wearing:

- Reduced number of infections (8 reviews)
- Reduced spread of the disease (8 reviews)
- Reduced number of deaths from COVID-19 (10 reviews)
- Did not affect voice production (1 review)

Personal protective equipment:

- Reduced number of infections (1 review)

Use of hand sanitizers:

- Reduced spread of the disease (1 review)

- Reported negative consequences:

Hand washing:

- Increased risk of dermatology problems (e.g. hand eczema) (1 review)

Mask-wearing:

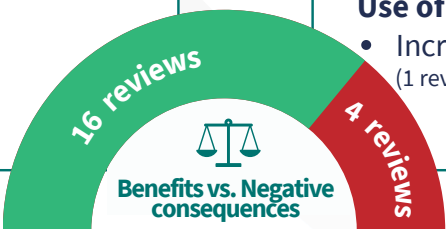
- Intensified physiological responses (e.g. headaches, increased heart rate, perceived exertion) (1 review)

Personal protective equipment:

- Increased risk of dermatology problems (e.g. hand eczema) (1 review)
- Intensified physiological responses (e.g. headaches, increased heart rate, perceived exertion) (1 review)

Use of hand sanitizers:

- Increased risk of intoxication due to absorption of disinfectant (1 review)



Effectiveness of PHSM by setting:

Face masks

- ✓ Communities
- ? Schools

Hand washing

- ? Schools

Personal protective equipment

- ? Long-term care settings

✓ Effectiveness observed ? Effectiveness uncertain



Implementation considerations:

Early initiation

Appropriate & safe use of mask & hand hygiene

Availability of mitigation measures (e.g. fit-testing)

Community education & engagement on proper use of personal protective equipment

Proper storage, cleaning or disposal of mask & personal protective equipment

Combination with other PHSM

ENVIRONMENTAL MEASURES: EFFECTIVENESS & UNINTENDED CONSEQUENCES DURING THE COVID-19 PANDEMIC

3 of 94
reviews reported on
this measure
(Dec 2019 - Sept 2022)

Environmental measures involve targeting the physical environment through (i) modifications, (ii) re-purposing &/or (iii) appropriately maintaining structures (e.g. ventilation, surface cleaning, physical barriers).

+ Reported benefits:

Environmental hygiene measures & multicomponent cleaning:

- Reduced number of infections (3 reviews)

Use of disinfectants:

- Reduced spread of the disease (3 reviews)

- Reported negative consequences:

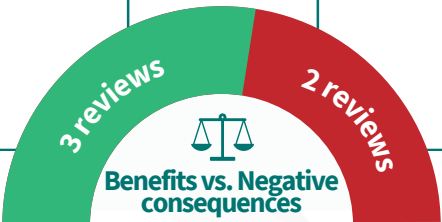
Modified ventilation schedules:

- Increased thermal discomfort (1 review)*

Use of disinfectants:

- Increased skin irritations & respiratory problems (1 review)*

*Reviews were not included in the original overview of systematic reviews



Effectiveness of PHSM by setting:

Environmental hygiene measures

- ? Long-term care facilities

Multicomponent cleaning

- ✓ Households
- ✓ Long-term care facilities
- ✓ Offices
- ? Schools

✓ Effectiveness observed ? Effectiveness uncertain



Implementation considerations:



Combination of environmental measures



Adherence to measures



Availability of necessary resources (e.g. disinfectants, air purifiers, or ventilation systems)



Combination with other PHSM

INTERNATIONAL TRAVEL & TRADE MEASURES: EFFECTIVENESS & UNINTENDED CONSEQUENCES DURING THE COVID-19 PANDEMIC

6 of 94
reviews reported on
this measure
(Dec 2019 - Sept 2022)

International travel & trade measures adopt a risk-based approach to reduce the travel- & trade-associated exportation, importation & onward transmission of a pathogen across borders (e.g. entry & exit screening, travel bans, upon-arrival quarantine).

+ Reported benefits:

Cross-border travel restrictions:

- Reduced spread of the disease (3 reviews)

Point of entry & exit screening:

- Reduced number of cases in communities (6 reviews)
- Reduced number of cases brought in or taken out of a country (3 reviews)

Quarantine at borders:

- Reduced number of cases brought in or taken out of a country (3 reviews)

Travel bans:

- Reduced spread of the disease (3 reviews)

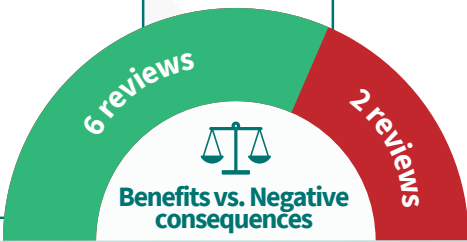
- Reported negative consequences:

Cross-border travel restrictions:

- Decreased mental health & well-being (1 review)*

Extended implementation of travel restriction measures:

- Economic & employment insecurity (e.g. reduced wages & overall income) (1 review)



*Review was not included in the original overview of systematic reviews

Effectiveness of PHSM by setting:

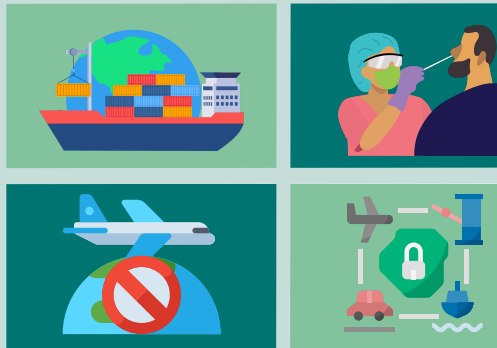
Cross-border travel restrictions

- 🟡 Airports

Travel bans at early stage of outbreak

- ✅ Airports

✅ Effectiveness observed 🟡 Effectiveness uncertain



Implementation considerations:



Early initiation



Design & stringency



Level of community transmission



Interconnectedness of countries



Wider coverage



Travel volumes & duration



Level of enforcement & adherence to measures



Combination with other PHSM

COMBINATION OF INTERVENTIONS: EFFECTIVENESS & UNINTENDED CONSEQUENCES DURING THE COVID-19 PANDEMIC

64 of 94
reviews reported on
this measure
(Dec 2019 - Sept 2022)

Combined interventions refer to the simultaneous implementation of multiple PHSM on a large-scale (e.g. so-called lockdowns). These interventions mainly include a combination of active case-finding & contact identification measures, social measures & personal protection measures.

+ Reported benefits:

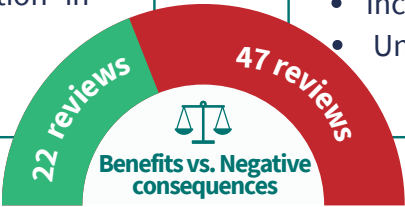
Combined interventions:

- Reduced number of infections (18 reviews)
- Reduced spread of the disease (18 reviews)
- Reduced number of deaths from COVID-19 (18 reviews)
- Reduced proportion of cases in community (18 reviews)
- Reduced influenza morbidity & mortality (2 reviews)
- Reduced pressure on healthcare system (e.g. hospitalization & ICU admissions) (2 reviews)
- Reduced pre-term birth — likely driven by reduction in iatrogenic births (1 review)
- Improved glucose control in type 1 diabetes (2 reviews)

- Reported negative consequences:

Combined interventions:

- Decreased mental health & well-being (16 reviews)
- Decreased physical activity & mobility, especially among children & adolescents (13 reviews)
- Decreased access to both emergency & routine healthcare services (7 reviews)
- Increased violence, especially among women & children (5 reviews)
- Economic & employment insecurity (4 reviews)
- Deteriorated health outcomes for cancer (3 reviews)
- Increased sleep problems among children & adolescents (5 reviews)
- Increased substance use (4 reviews)
- Unclear effects on food intake and eating behaviors (10 reviews)

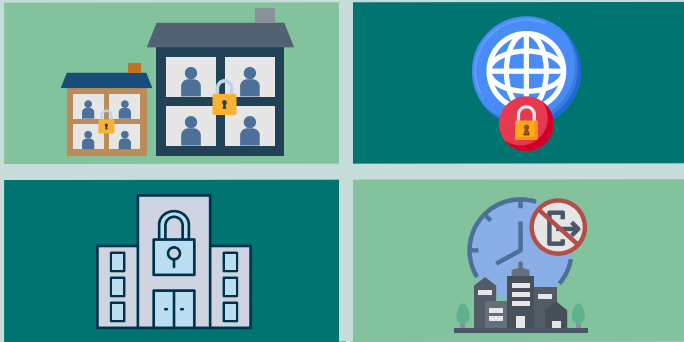


Effectiveness of PHSM by setting:

Combined PHSM interventions:

- ✓ Community settings
- ✓ Long-term care settings
- ✓ Mass gatherings
- ✓ Workplace settings
- ? Schools

✓ Effectiveness observed ? Effectiveness uncertain



Implementation considerations:

Early initiation

Level of enforcement & adherence to measure

Level of community transmission

Incremental lifting of restrictions

Mobility rates prior to lockdown

Stringent & extended implementation of measure

Availability of mitigation measures

Existence of robust health data infrastructure