Advancing Research on Public Health and Social Measures during Health Emergencies

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Outline

• PHSM rely on multi-component and multi-level approaches

• PHSM may have benefits and harms
  • Example 1: International travel measures in the context of COVID-19
  • Example 2: School measures in the context of COVID-19

• Empirical PHSM research requires a systematic approach
  • Key questions
  • Methodological challenges

• WHO PHSM Initiative to measure the effectiveness and impact of PHSM

Public Health and Social Measures
during health emergencies due to an infectious disease agent
Public Health and Social Measures (PHSM) Multi-component and multi-level approaches

- **Short-term:** maximum multi-layer protection
- ** Longer-term:** need to consider
  - effectiveness of individual layers
  - interactions between layers
PHSM may have benefits and harms
COVID-19 example 1: International travel measures

Cochrane Rapid Review

International travel-related control measures to contain the COVID-19 pandemic: a rapid review

- 62 included studies (49 modelling, 13 observational)
- Most predict a beneficial effect on transmission and case detection
- Effects likely dependent on multiple factors (e.g. timing)
- GRADE certainty of evidence low to very low

Scoping Review

Unintended health and societal consequences of international travel measures during the COVID-19 pandemic: a scoping review

- 23 included studies (9 quasi-experimental, 6 qualitative, 4 mixed methods, 2 modelling, 2 observational)
- Variety of unintended consequences, most related to economic and psycho-social outcomes
- Thin evidence base, major gaps in outcomes considered
PHSM may have benefits and harms
COVID-19 example 2: School measures

Cochrane Rapid Review

Measures implemented in the school setting to contain the COVID-19 pandemic
Shani Krishnaratne, Hannah Littlecott, Kerstin Sell, Jacob Burns, Julia E Rabe, Jan M Strahl, Tim Litwin, Clemens Kreutz, Michaela Coenen, Karin Goffert, Anna Helen Beger, Ani Hovissian, Suzie Kratzer, Carmen Klinger, Katharina Wabnitz, Brigitte Ströhfeldt, Ben Verboom, Eva Nehfuessi, Renée L Bielass, Caroline Jung-Sievers, Stephan Voss, Lisa M Pfenninger
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- 38 included studies (33 modelling, 3 observational, 1 quasi-experimental, 1 combined)
- Most predict a beneficial effect on transmission and hospitalizations
- Most predict a harmful effect on social outcomes
- GRADE certainty of evidence low or very low

Cochrane Scoping Review

Kratzer et al.
Cochrane Database of Systematic Reviews, submitted scoping review

- 18 included studies (5 modelling, 5 observational, 5 qualitative, 3 quasi-experimental)
- Variety of unintended consequences, most related to education and learning outcomes
- Thin evidence base, patchwork of studies
Systematic approach to PHSM research

Key questions

1. Which PHSM are the most effective at reducing transmission during a health emergency?

2. Which unintended consequences – health, social and economic impact – are associated with PHSM?

3. Which implementation approaches (“degree of intrusiveness”) are most successful during different stages of a health emergency?

4. How do contextual factors (e.g. geographical, socio-cultural) influence the benefit-harm balance of different PHSM?
Systematic approach to empirical PHSM research

Methodological challenges

Conceptual challenges: “complex interventions in complex systems”

- Interactions between measures, levels of governance, with context and implementation
- Multitude of health and non-health outcomes
  ➢ Need for strong conceptual basis → logic model

Design challenges: assessing effectiveness

- Randomisation rarely feasible or appropriate
- Effects of individual measures difficult to disentangle
- Ethical, legal and logistical challenges of data collection
  ➢ Need for high-quality study designs and data collection systems → blueprints for studies
WHO PHSM Initiative
Strengthen the global evidence base on the effectiveness and health, social and economic impacts of PHSM to inform the development of actionable tools for decision-makers

• Funded by the Norwegian Ministry of Health and Care Services

• Supported by the Norwegian Institute of Public Health, LMU Munich, PHSM Working Group under the STAG-IH, BESSI Collaboration and other academic partners

• Multi-year initiative launched in 2021
WHO PHSM Initiative
Planned key achievements until 2023

PHSM research framework
• Logic model
• Global evidence review and research agenda
• Global PHSM Monitoring System including data for action hubs

PHSM decision-making tool
• Harmonized PHSM taxonomy and menu of evidence-based interventions
• List of mitigation measures to reduce burden from unintended negative consequences
• Context-specific implementation considerations

Integration of PHSM into health emergency preparedness plans
WHO PHSM Initiative
Towards a logic model

Logic model for PHSM during health emergencies

- Supports thinking through complexity in PHSM research from a systems perspective
- Offers comprehensive conceptual basis for PHSM research framework
- Will become the basis for a PHSM decision-making tool

- All PHSM operate through two basic mechanisms
- In principle applies to airborne and other modes of transmission

Specific mechanisms
Reducing contacts
Making contacts safer

Overarching mechanism
Reducing transmission-relevant contacts
Thank you!
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