

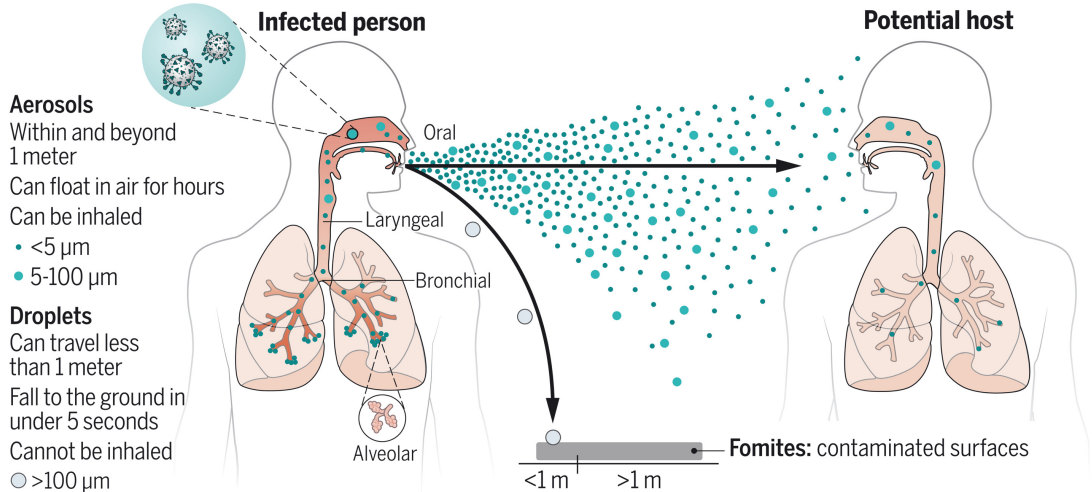
CDPH Director and State Public Health Officer Update

CCLHO and CHEAC meetings

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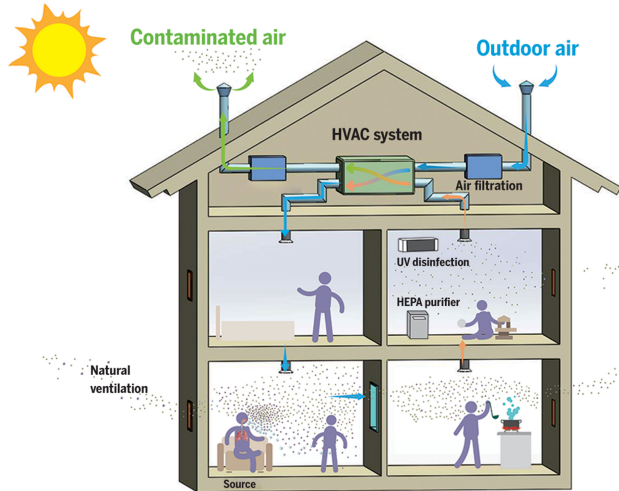
March 2, 2023

Airborne transmission of respiratory viruses¹



¹Wang et al., Science 373, eabd9149 (2021). <https://doi.org/10.1126/science.abd9149>

Factors affecting indoor airborne transmission²

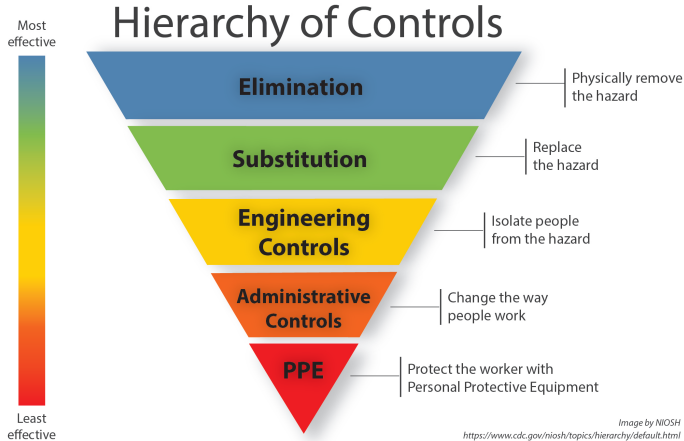


Factors affecting distribution of aerosols indoors

- **Airflow direction pattern**
- **Ventilation type**
 - Natural
 - Mechanical
 - Hybrid
- **Air filtration and disinfection**
 - Portable air cleaner with HEPA filters
 - Air filtration in HVAC system
 - Upper room UV disinfection

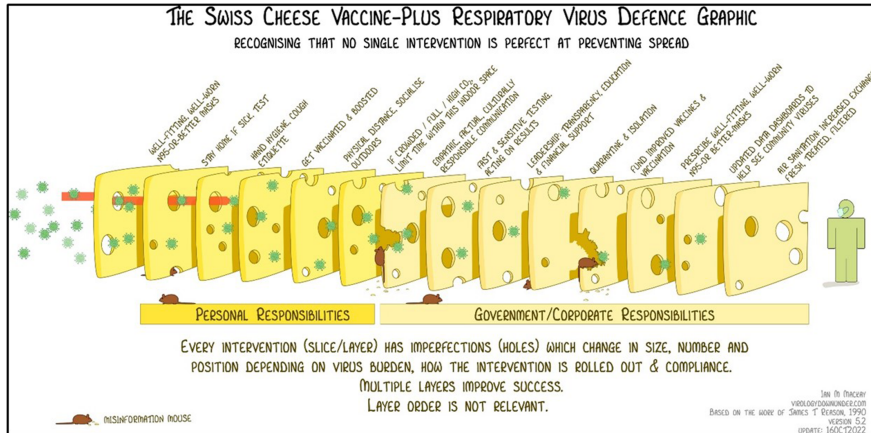
²Wang et al., Science 373, eabd9149 (2021). <https://doi.org/10.1126/science.abd9149>

CDC Hierarchy of Controls: Interrupting infections in the workplace³



³<https://www.cdc.gov/niosh/topics/hierarchy/default.html>

The Swiss Cheese Model⁴

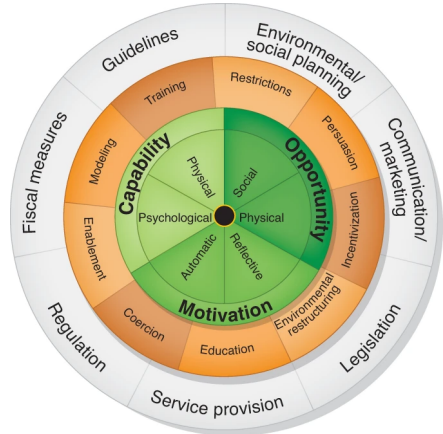
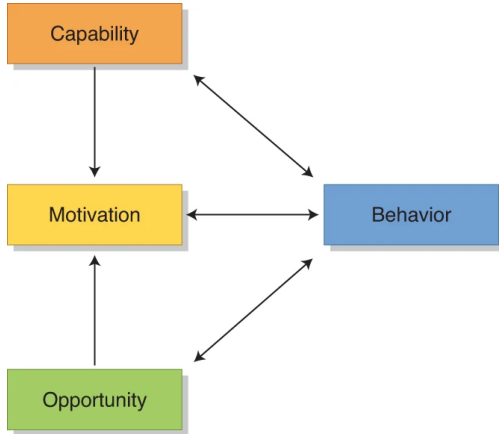


⁴Source: <https://doi.org/10.1017/ice.2022.295>

Research evidence about interrupting airborne transmission of pathogens

- ① Mode of transmission
- ② Causal inference
- ③ Research questions
 - ① Mechanistic studies
 - ② Observational studies
 - ③ Randomized controlled trials
- ④ Systematic reviews (narrative, meta-analysis, etc.)
- ⑤ Implementation science (role of mandates, etc.)
- ⑥ Ethical and moral considerations
 - ▶ effectiveness
 - ▶ necessity
 - ▶ lease infringement
 - ▶ proportionality

Implementation science: COM-B (L) and Behavior Change Wheel (R)⁵



⁵Also see <https://doi.org/10.1186/s13012-018-0821-y>

References

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- <https://twitter.com/trishgreenhalgh/status/1629827584568565760>
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- Trisha Greenhalgh, et al. Adapt or die: how the pandemic made the shift from EBM to EBM+ more urgent. Available from:
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