Reason for bringing to SAGE

What is the evidence for the effectiveness of hand hygiene in preventing the transmission of respiratory viruses?

Key conclusions

1. There is evidence from randomised controlled trials in community settings (e.g. household, school, University, workplace) that hand hygiene interventions can reduce the risk of respiratory infections.
2. The size of the effect is heterogenous. The most up to date meta-analysis of randomised trials of hand hygiene interventions reports a 16% reduction in acute respiratory infections (RR 0.84, 95% CI 0.82 to 0.86).[1]
3. It has been estimated that each extra hand hygiene event per day reduces daily transmission probability by about 3% (80% credible interval (-1%, 7%)).
4. Most studies assess the impact of hand hygiene on the frequency of unspecified acute respiratory infection or influenza like illness but there is one paper on seasonal coronaviruses, which concludes that moderate-frequency handwashing was associated with significantly reduced risk of contracting coronavirus.
5. The duration of viral persistence on hands is a key parameter that determines the effectiveness of hand hygiene. The shorter time the virus survives on hands, the less effective increasing hand hygiene frequency.
6. Event-prompted hand washing (e.g. within1 minute of touching a potentially contaminated surface) is likely to be more effective than fixed-time hand washing in reducing the probability of infection.
7. The importance of event prompted hand washing suggests the need to increase availability (and uptake) of hand washing/sanitising facilities in public places, shops, public transport and workplaces to allow rapid hand sanitation after touching potentially contaminated surfaces.
8. The effectiveness of hand hygiene is increased when combined with other measures, such as face masks. Combination measures are therefore most likely to be effective.
9. Achieving the full potential of hand hygiene will require multimodal interventions based on the science of transmission and behaviour change.

Recommendations for further studies

1. Experiments to assess virus pick up rates by fingers from various surfaces.
2. Experiments to attempt virus isolation on contaminated hands at different times points.
3. Field experiments of interventions in public spaces to increase hand hygiene behaviours including use of hand washing and sanitising facilities