



Part 3

How is SARS-CoV-2 transmitted?

Don't forget: you can download all my slides, including the study references, at <https://hert.org.uk/resourcetype/covid-19/>



Means of transmission of a respiratory virus

- Direct contact: Virus transfer from one infected person to another
- Indirect contact: Virus transfer from contaminated surfaces (fomites)
- Droplets: Droplets ($>5 \mu\text{m}$), remain in the air <17 minutes and are dispersed over distances <1 metre
- Aerosols: Droplets $<5 \mu\text{m}$, remain in air for an almost infinite amount of time and are dispersed over long distances

(Kutter JS, Spronken MI, Fraaij PL, Fouchier RA, Herfst S. Transmission routes of respiratory viruses among humans. *Curr Opin Virol.* 2018 Feb;28:142-151)



WHO COVID-19 Guidance 2020 - Dec 2021

- The WHO website showed that **‘SARS-CoV-2 transmission appears to mainly be spread via droplets and close contact with infected symptomatic cases’** based on early Chinese and Korean studies.
- **In March 2020, the WHO tweeted, “FACT: #COVID19 is NOT airborne.”**
- The US CDC reported that **COVID-19 was thought to be primarily caught through surface (fomite) transmission.** A fomite is any inanimate object that, when contaminated with or exposed to infectious agents, can transfer disease to a new host.
- In the first year or so of the pandemic the US CDC were **recommending cleaning and disinfecting every surface** (with a lengthy page of instructions), based on the belief that one could catch COVID from contaminated surfaces.
- Note that while fomites may be present, it is not always clear whether these represent viable virus or genomic fragments.
- There were similar fears that food and water could transmit the virus but studies showed that this fear was largely baseless.

(<https://www.who.int/news-room/commentaries/detail/transmission-of-sars-cov-2-implications-for-infection-prevention-precautions>; https://www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-building-facility.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fcommunity%2Freopen-guidance.html); <https://www.aier.org/article/another-covid-myth-dies-the-death-of-baker-ca-gibson>; Baker CA, Gibson KE. Persistence of SARS-CoV-2 on surfaces and relevance to the food industry. *Curr Opin Food Sci.* 2022 Oct;47:100875; Arnaboldi S, et al. Is SARS-CoV-2 a Concern for Food Safety? A Very Low Prevalence from a Food Survey during the COVID-19 Pandemic in Northern Italy. *Foods.* 2022 Jul 14;11(14):2006; Arnaboldi S, et al. Is SARS-CoV-2 a Concern

WHO COVID-19 guidance changed from Dec 2021

- Nearly two years after the pandemic began, **in December 2021, the WHO finally acknowledged that SARS-CoV-2 is mainly transmitted by aerosols** (i.e. it freely floats in and travels through the air, often long distances).
- The UK government's advice then changed to **'Open a window'**.
- But apparently not in care homes to enable residents to talk to friends and family. Instead, windows were locked.



<https://childrenshealthdefense.org/defender/who-waited-two-years-admit-covid-19-airborne/?eType=EmailBlastContent&eId=50e7bbc5-10cf-475d-a1ea-b119628b8a6c>

Early evidence that COVID-19 spread through aerosols

- The **Diamond Princess cruise ship** experienced one of the earliest COVID outbreaks and passengers were quarantined, providing the **perfect experimental conditions to study how COVID-19 was transmitted.**
- On 1 February 2020, **a former passenger tested positive for COVID-19**, having disembarked from the Diamond Princess on 25 January but symptoms had begun on 19 January. **The passengers were then quarantined in their rooms on the ship for 14 days, breathing recycled, unfiltered air.**
- **People who remained quarantined in their rooms still caught COVID-19, which suggested the virus was spreading through the ventilation system and was therefore aerosolised.**

(Russell TW, et al. Estimating the infection and case fatality ratio for coronavirus disease (COVID-19) using age-adjusted data from the outbreak on the Diamond Princess cruise ship, February 2020, Euro Surveill. 2020 Mar;25(12):2000256)



<https://dailysceptic.org/2021/03/27/the-diamond-princess-told-us-about-pre-existing-immunity-asymptomatic-infection-and-the-infection-fatality-rate-why-were-those-lessons-ignored/?highlight=Diamond%20princess>

Argentinian fishermen test positive despite spending 35 days in Antarctic waters



- ‘All 61 sailors aboard the trawler, Echizen Maru, **tested negative for the virus upon departure from Buenos Aires** in late May 2020.’
- July 2020: after 35 days at sea, ‘**..nearly every crew member...were found to have contracted coronavirus** upon returning to land.’
- ‘Now officials are struggling to piece together **how the disease reached the isolated ship**....since for 35 days, they had no contact with dry land’.

https://www.independent.co.uk/news/world/americas/coronavirus-argentina-fishermen-trawler-ushuaia-covid19-echizen-maru-a9621716.html?utm_source=substack&utm_medium=email

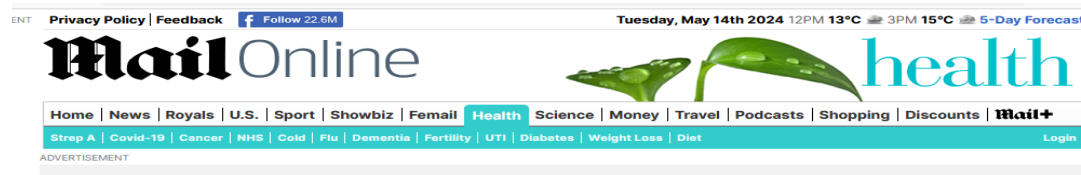
WHO misinformation

- **This failure by the WHO to misinform the world for 2 years prompted an investigation in Nature.**
- The authors reported that ‘Early in the pandemic, **the World Health Organization stated that SARS-CoV-2 was not transmitted through the air. That mistake and the prolonged process of correcting it sowed confusion** and raises questions about what will happen in the next pandemic.’ (Lewis D. Why the WHO took two years to say COVID is airborne. Nature. 2022 Apr;604(7904):26-31)
- Importantly, **if aerosol transmission had been recognised** when the evidence was clear, there would have been **no justification for masking, social distancing, lockdowns or school closures.**
- Essentially, **it is impossible to stop an aerosolised virus.** It will spread everywhere, hang around in the air long after someone has left and will penetrate most of the barriers designed to block it.

Even the New York Times picked up on this

- An article in the New York Times entitled **‘Why Did It Take So Long to Accept the Facts About Covid?’** pointed out how mistaken assumptions led to errors in pandemic management.
- “At the end of April 2021 the WHO finally updated its website to indicate that COVID is transmitted via both droplets and airborne particles. Until then, it simply had claimed, ‘the main way the virus spreads is by respiratory droplets’. This mistaken assumption led to errors of both commission (like closing playgrounds) and omission (such as ignoring ventilation).”
- “If the importance of aerosol transmission had been accepted early, **we would have been told from the beginning that it was much safer outdoors, where these small particles disperse more easily, while ensuring that indoor spaces were well ventilated.**”
- **“One of the safest places to be during the pandemic was outdoors,** raising serious questions about the Government’s stay-at-home order, with only one hour of outdoor exercise a day.”

New WHO paper on COVID transmission: reported in the Mail 1 May 2024



Landmark WHO paper suggests sharing your glass with a sick person WON'T always give you a cold or Covid

- New WHO report said cold and flu viruses spread through air, not on surfaces
- The guidance means mitigation measures like handwashing are not as effective
- READ MORE: CDC says coronavirus DOES spread through the air

- I would like to be able to quote the study but I couldn't find it, either on the WHO website or PubMed.

(<https://www.dailymail.co.uk/health/article-13372765/world-health-organization-washing-hands-prevent-colds.html>)

- Dr Don Milton, a study coauthor, 'has long thought respiratory viruses spread through the air...found the delay (in demonstrating it) frustrating.'
- 'The decision settled a Covid-era debate about whether some viruses like Covid spread mostly through inhaling infected air, or from contaminated surfaces.'
- **The Mail says: '...experts in virology welcomed the conclusion that surfaces are not as vital as previously thought, which they say should have been confirmed early on in the pandemic.'**

So if one of the safest places to be during the pandemic was outdoors.....

What is the logic for lockdown, enclosing healthy people indoors with the sick?

Covid: Women on exercise trip 'surrounded by police'

- The odds that a primary case transmitted COVID-19 in a closed environment was 18.7 times greater compared to an open-air environment.

(Nishiura H, <https://www.medrxiv.org/content/10.1101/2020.02.28.20029272v2.full.pdf>)

Note: still a preprint

- Furthermore, a US study investigating the effect of 'shelter in place' (SIP) orders found **no** "detectable effects of these policies on disease spread or deaths".

(Berry CR, et al. Evaluating the effects of shelter-in-place policies during the COVID-19 pandemic. Proc Natl Acad Sci U S A. 2021 Apr 13;118(15):e2019706118

Rachel Nicoll PhD, 2024



<https://www.bbc.co.uk/news/uk-england-derbyshire-55560814>

And what about previous respiratory infections?

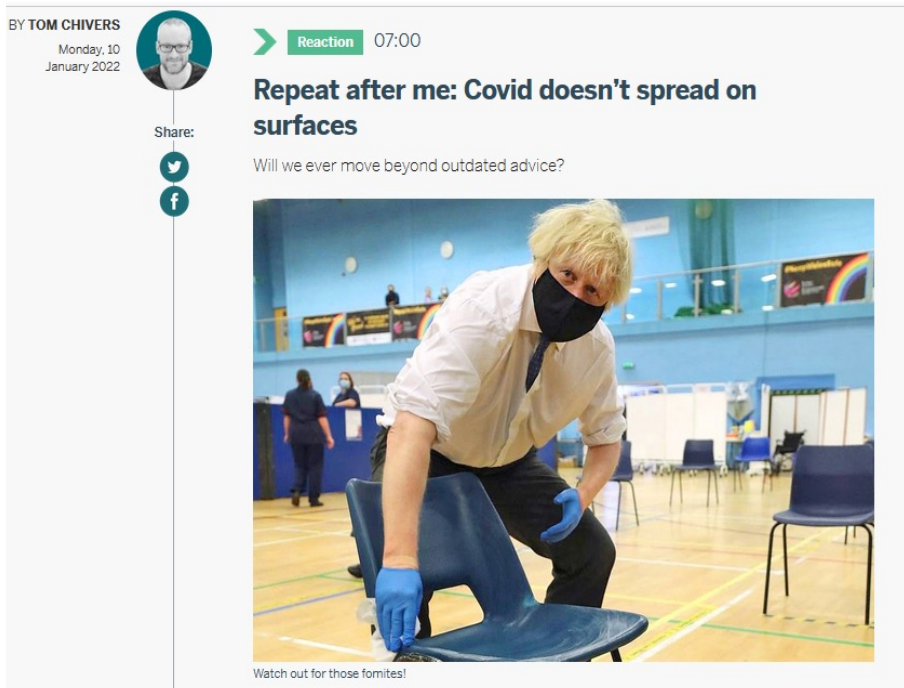
- A report from the **Royal Society excused the failure** to recognise that SARS-CoV-2 was spread by aerosols by saying that **“the pandemic has exposed major gaps in our understanding of the transmission of viruses through the air.** These gaps slowed recognition of airborne transmission of the disease, contributed to muddled public health policies and impeded clear messaging on how best to slow transmission of COVID-19.”
- But this is nonsense. **Studies of SARS-CoV-1 and several other respiratory infections are clear that the principal means of transmission is aerosols,** which can travel over considerable distances. A 1973 study reported an outbreak of the common cold at a British Antarctic Survey base after 17 weeks of complete isolation.
- And a 2015 review article stated: “Since the emergence of [SARS-CoV-1], the 2003 reemergence of avian A/H5N1, the emergence of the 2009 pandemic influenza A/H1N1, the 2012 emergence of Middle East respiratory syndrome (MERS), the 2013 emergence of avian A/H7N9 and the 2014 Ebola virus outbreaks, **the potential for the aerosol transmission of infectious agents is now routinely considered in the investigation of any outbreak.**”

(Randall K, et al. How did we get here: what are droplets and aerosols and how far do they go? A historical perspective on the transmission of respiratory infectious diseases. Interface Focus. 2021 Oct 12;11(6):20210049; Yu IT, et al. Evidence of airborne transmission of the severe acute respiratory syndrome virus. N Engl J Med. 2004 Apr 22;350(17):1731-9; ; Allen TR et al. An outbreak of common colds at an Antarctic base after seventeen weeks of complete isolation. J Hygiene. 1973; 71(4): 657-667; Tang JW, et al. Aerosol-Transmitted Infections—a New Consideration for Public Health and Infection Control Teams. Curr Treat Options Infect Dis 7, 176–201 (2015))

Consequences of failure to admit the error

- **The update from the WHO that COVID spread mainly by aerosol transmission should have radically altered policy.** But none of the global or national authorities were willing to admit their mistakes.
- **Because it was the earlier mistaken guidance** (surfaces and droplets) which **formed the rationale for social distancing, lockdowns, masks, etc.**
- It also give rise to the massively expensive (£37 billion) **Test and Trace** system, which largely failed in its objectives. Even the BBC reported this: 'Labour called on ministers to "explain what's gone wrong". (<https://www.bbc.co.uk/news/uk-politics-57186059>)
- **Test and Trace was pointless if the virus was aerosolised as it was spreading on the air and was not confined to close contact. We just wasted £37 billion on a system whose introduction was based on a false premise.**
- **And its failure simply reinforced the presumption of asymptomatic transmission.**

But the belief that COVID was transmitted on surfaces persisted...



- In January 2022, Tom Chivers was pointing out that: **“On every table in every cafe, on every counter-top in every store, there is a bottle of disinfectant. Every shop door has a “please disinfect your hands” sign with a little hand gel dispenser. “These premises are cleaned regularly,” say proud little signs in train stations. “It’s more than two years since the virus started spreading, and we still think it does so by touching things.”**
- **Some of these signs and sanitisers are still present today.**
- And in September 2023, the **NHS website** was still announcing that **‘You can catch COVID-19 if you breathe in...droplets or touch surfaces covered with droplets’**. You may, but **have they never heard of aerosols?**

Too much emphasis on cleaning surfaces?

- Infectious virus is measurable for hours or even days on many surfaces, but **actual infections from surfaces appear to be extremely rare in most real-world studies.** (<https://www.cdc.gov/coronavirus/2019-nCoV/more/science-and-research/surface-transmission.html>; <https://www.nature.com/articles/d41586-021-00251-4>)
- **Jeffrey Tucker, founder of the Brownstone Institute,** commented that “So much for the many billions spent on cleaning products, the employees and the time, and hysteria and frenzy, the rise of touchlessness, and gloves, the dousing of the whole world. The science apparently changed. Still it will be years before people get the news and act on it. **Once the myths of surface transmission of a respiratory virus are unleashed, it will be hard to go back to normal.**”
- Two Nature editorials questioned the need for deep cleaning since COVID was spread by aerosols. (<https://www.nature.com/articles/d41586-021-00277-8>; <https://www.nature.com/articles/d41586-021-00251-4>)

And unintended consequences of all this?

- ‘Several scientists have pointed out that **attempts to sterilise our surroundings can kill off bacteria critical for human health** and inadvertently **promote the survival and evolution of more dangerous pathogens, including antibiotic-resistant superbugs.**’
- ‘Furthermore, the **antimicrobial cleaning agents** and surface coatings being liberally applied throughout offices and other public spaces, could introduce poorly understood, **potentially poisonous chemicals** into our everyday life.’
- ‘**Infants and young children need exposure to a wide variety of microbes to train their developing immune systems**’ – see Immune Debt section.

(<https://www.bloomberg.com/news/features/2020-12-16/covid-pandemic-microbiomes-could-be-key-to-stopping-spread-of-future-viruses>)



How SARS-CoV-2 is transmitted: Summary

- Despite other respiratory viruses, including SARS-CoV-1, being aerosolised, the WHO announced early on that it was not aerosolised but was transmitted via droplets and surfaces.
- Despite early evidence suggesting SARS-CoV-2 was aerosolised, the WHO and other governments refused to accept the truth until December 2021.
- This WHO misinformation led governments to impose lockdowns, school closures, social distancing, hand sanitising etc to avoid contaminated droplets and surfaces.
- In the UK, people were confined to their homes and arrested if they ventured outside for anything other than 1 hour of solitary exercise.
- When the WHO finally admitted their error, the guidance barely changed, even though it was clear that outdoors was the safest place to be. You cannot stop an aerosolised virus.