

What do we know about COVID-19 transmission?

THE LATEST ON TRANSMISSION & THE CURRENT GLOBAL SITUATION

Current global situation

22 July 2020

- **> 14,7 million cases**
- 5 countries with highest cumulative number of cases



United States of America



Brazil



India



Russian Federation



South Africa

- **> 600,000 deaths**
- 5 countries with highest cumulative number of deaths



United States of America



Brazil



The United Kingdom



Mexico

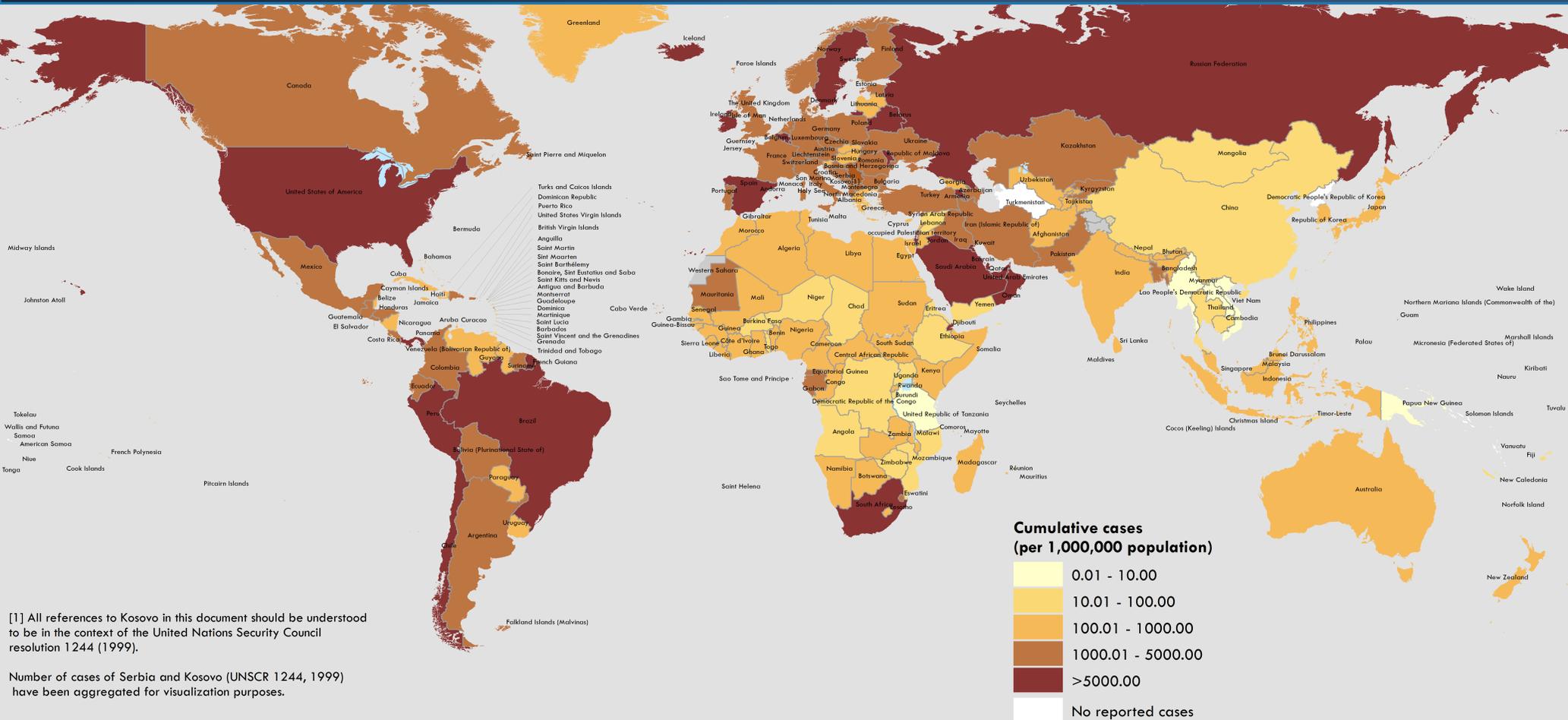


Italy

Countries, areas or territories with COVID-19

Cases per 1,000,000 population

(AS OF 19 JULY 2020 10:00AM CEST)



[1] All references to Kosovo in this document should be understood to be in the context of the United Nations Security Council resolution 1244 (1999).

Number of cases of Serbia and Kosovo (UNSCR 1244, 1999) have been aggregated for visualization purposes.

Data Source: World Health Organization, United Nations Population Division (Population prospect 2020)
Map Production: WHO Health Emergencies Programme

Not applicable

0 2,500 5,000 km
 © World Health Organization 2020. All rights reserved.

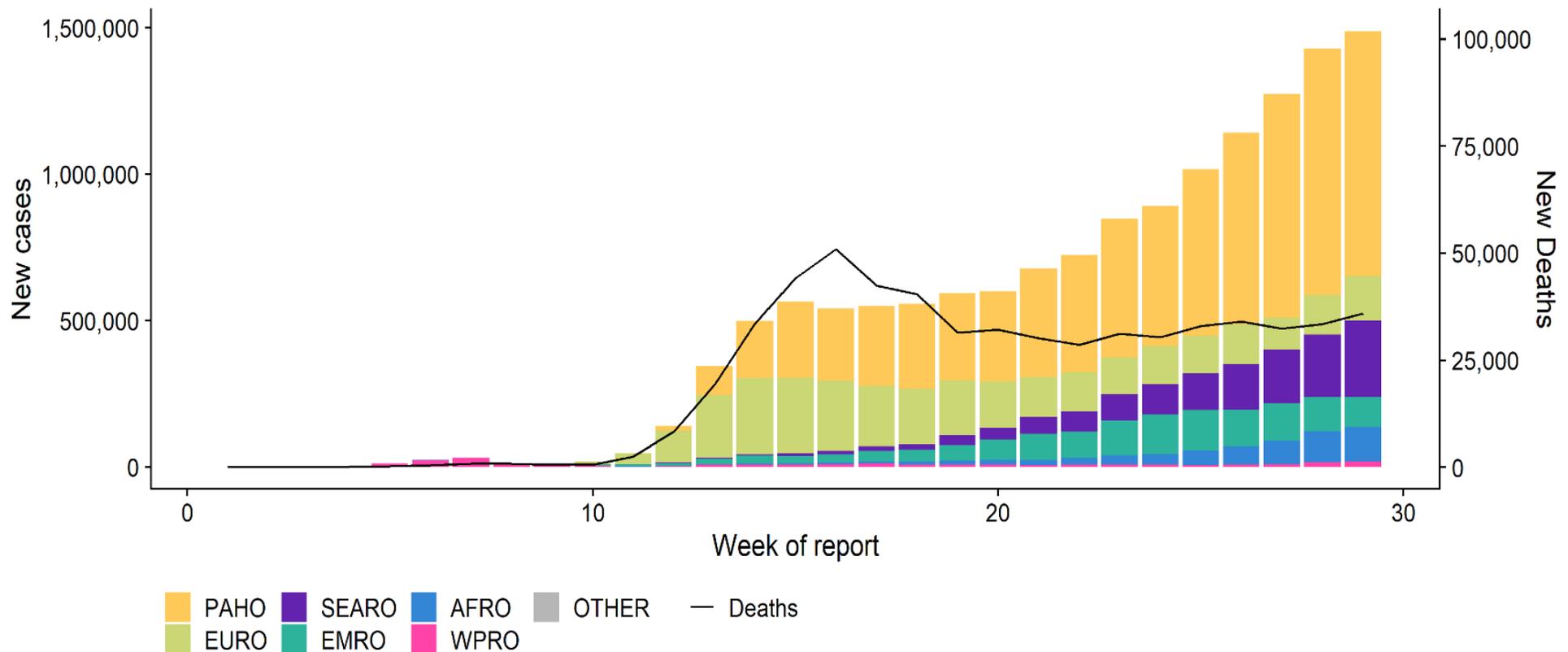
The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Global epidemic curve by region

(cases reported to WHO, 19 July 2020)

NUMBER OF NEW CONFIRMED COVID-19 CASES & DEATHS BY WEEK

19 JULY: **14,043,176** CASES & **597,583** DEATHS



Other: two international conveyances

Clinical insights

- Average time from infection to **onset of symptom is 5-6 days**
- Most people with COVID-19 experience mild symptoms or moderate illness
- Approximately **10-15% of cases progress to severe disease**, and about **5% become critically ill**
- Some report that symptoms may linger for weeks, including **extreme fatigue, shortness of breath, cough**
- COVID-19 is reported much less frequently in children than in adults
- Children tend to have mild disease. Rarely, a few may develop serious illness

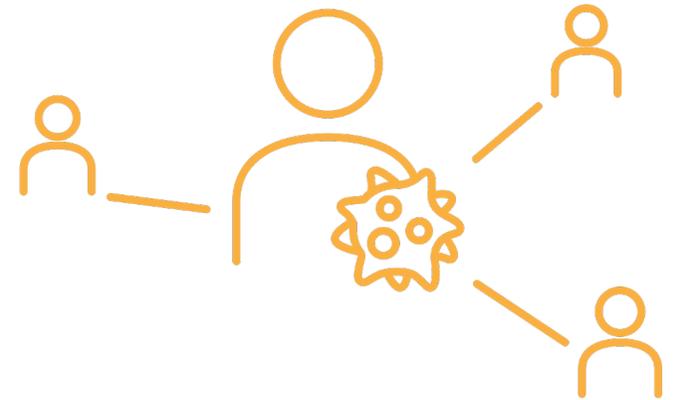


What do we know about COVID-19 transmission?

COVID-19 is spread **primarily through droplets and direct contact.**

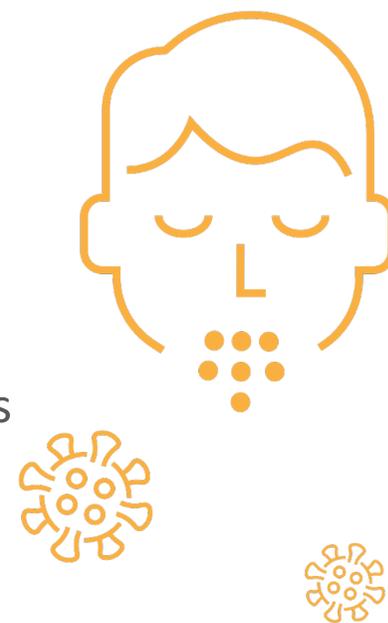
The upcoming slides will address when, where and how COVID-19 spreads.

There are still many unanswered questions and more studies are urgently needed to investigate and assess the importance of the different modes of transmission in different settings.



How does COVID-19 spread?

- The spread of COVID-19 from person to person is mainly by droplet and contact transmission
- **Virus from the nose and throat is carried in droplets** from the mouth or nose when an infected person speaks, coughs, sings or sneezes.
- In the days following exposure, **infected persons can transmit the virus to others before symptoms appear** (1-3 days before symptom onset) and **early** in the course of illness.
- A person who touches a surface or object that has the virus on it, then touches their eyes, nose or mouth before they clean their hands can also become infected.



Where does COVID-19 spread most easily ?

COVID-19 tends to spread readily in:

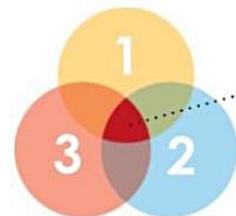
- **Closed settings** – such as long-term living homes, correctional facilities (prisons)
- **Crowded settings without distancing** – gatherings, parties, sports events, restaurants & public transportation
- **Confined and crowded indoor settings without good ventilation** – such as nightclubs, bars, private gatherings
- **Specific workplace settings** - dormitories for migrant workers, meat processing plants, etc.

Avoid the Three C's

Be aware of different levels of risk in different settings.



There are certain places where COVID-19 spreads more easily:



The risk is higher in places where these factors overlap.

Even as restrictions are lifted, consider where you are going and #StaySafe by avoiding the Three C's.

WHAT SHOULD YOU DO?

-
- Avoid crowded places and limit time in enclosed spaces
 - Maintain at least 1m distance from others
 - When possible, open windows and doors for ventilation
 - Keep hands clean and cover coughs and sneezes
 - Always wear a mask when you go outside your home

If you are unwell, stay home unless to seek urgent medical care.

When does COVID-19 spread?

Can someone with no symptoms spread COVID-19?

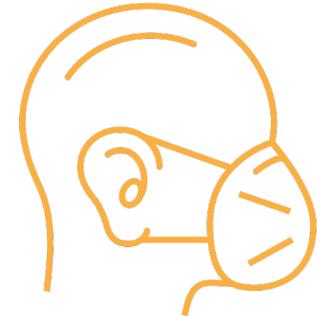
- **YES. An infected person without symptoms can transmit the virus**
 - Someone exposed and infected can transmit the virus by producing respiratory droplets in the pre-symptomatic period, up to three days before the onset of symptoms.
 - For someone who is infected and remains symptom-free, onward transmission can occur. The extent of transmission from people who remain well is unknown and likely depends on the setting.
 - **Wear a face covering to protect others**
- **An infected person with symptoms can also transmit the virus**
 - Transmission is highest at the beginning of illness, when symptoms may still be mild. **This is why it is so important to stay home, even with the mildest symptoms.**



Does aerosol (airborne) transmission of COVID-19 occur?

- **Aerosol transmission occurs when certain medical procedures are performed**

- Health workers performing these procedures must wear personal protective equipment, including specifically designed masks (e.g. N95, FFP2).



- In **crowded poorly ventilated indoor spaces**, where people are **talking, shouting** or **singing**, aerosol transmission may also be occurring.

- Aerosol transmission may play a role in COVID-19 outbreaks reported in closed settings such as nightclubs, restaurants, some places of work and places of worship.
- Fabric masks can reduce transmission where physical distancing cannot be achieved.
- To date, there is insufficient data to determine the contribution of aerosol transmission in community settings.

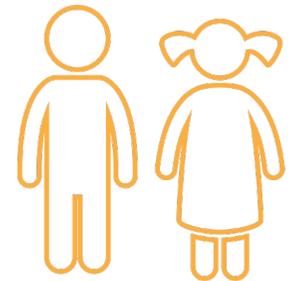
Transmission from contaminated surfaces and objects

- People with the virus in their nose and throat may leave traces of **virus-laden droplets on objects and surfaces** (also called ‘fomites’). For example, when they sneeze, cough on, or touch surfaces such as tables, doorknobs and handrails.)
- **Other people may become infected** by touching these objects or surfaces, then touching their eyes, nose or mouth.
- Therefore, it is essential to thoroughly clean hands regularly with soap and water or an alcohol-based hand rub product, and to **clean surfaces regularly**.



What is the role of children and adolescents in the transmission of COVID-19?

- **Children and adolescents can be infected** and spread COVID-19
- COVID-19 is reported much less frequently in children than in adults
- Children tend to have milder disease than adults. Rarely, a few may develop serious illness.
- Studies to date show minimal spread among children under ten years
- **Infection occurs more often in teenagers** than in younger children
- Children and adults should follow the same guidance on self-isolation if there is a risk they have been exposed or are showing symptoms.



What is known about mother-to-child transmission of COVID-19?

- There has to date been **no viable virus found in breastmilk** of mothers with COVID-19.
 - A mother with suspected or confirmed COVID-19 should be supported to breastfeed safely, hold her new-born skin-to-skin and share a room with her baby.
 - When breastfeeding with COVID-19, wear a mask, wash hands before and after touching baby, and routinely clean and disinfect surfaces.
- The placenta does not appear to contain receptors used by the SARS-CoV-2 virus to gain entry into cells. There has been one report of an infant infected through intrauterine transmission.
- Information on mother-to-child transmission remains limited and requires further study.



VIDEO:

[Breastfeeding during COVID-19](#)

What is known about the transmission of COVID-19 via the faecal-oral route?

- There are **no reports or evidence of faecal-oral spread of COVID-19**
 - Some studies have detected viral RNA in faeces or shown viral RNA contamination of toilets.
 - Viable virus has been found in stool in a very small number of individuals. The significance of this finding is not yet known. More research is needed.
- There is **no evidence to date of survival of the SARS-CoV-2 virus in water or sewage**
 - Environmental surveillance studies are underway in many countries. These have so far detected viral RNA, but not viable virus.
 - Some countries are exploring the use of detection of viral RNA fragments in waste water to provide early warning of resurgence of infection

How can we protect ourselves and others?

- **Stay home and self-isolate** if you feel unwell, even with mild symptoms

- **Clean hands frequently** with soap and water for 40 seconds or with alcohol-based hand rub for 20 seconds

- **Cover your nose and mouth** with a disposable tissue or flexed elbow when you cough or sneeze

- **Avoid touching** your eyes, nose and mouth

- Maintain a **minimum physical distance of at least 1 metre** from others

- **Stay away from crowds** and stay away from poorly ventilated indoor spaces

- **Use a fabric mask** where physical distancing of at least 1 metre is not possible

- **Use a medical / surgical mask** if you may be at higher risk (age, medical conditions)

- **Regularly clean and disinfect** frequently-touched surfaces

VIDEOS:

Transmission

[How to break the chains of transmission](#)

Protecting ourselves

[How to protect yourself against COVID-19](#)

[Seven steps to prevent the spread of the virus](#)

Masks

[Medical and fabric masks: who wears what when?](#)

[How to wear a fabric mask safely](#)

[How to wear a fabric mask](#)

[How to wear a medical mask](#)

Stopping transmission with contact-tracing

Anyone who is exposed to **COVID-19** or develops symptoms even in the absence of known exposure



should be:

- **tested**
- **isolated** if positive, and
- **receive medical care**, if needed

For every person who tests **positive**, all persons with whom they have been in contact



must be:

- **identified** (from 2 days before until 14 days after symptoms or test result)
- **contacted by public health** authorities, and
- **placed in quarantine** or asked to self-quarantine for 14 days

FACT: some countries successfully trace and quarantine **contacts of contacts** to suppress transmission

WHO guidance on COVID-19 transmission

Additional resources

- SCIENCE BRIEF ON TRANSMISSION

<https://www.who.int/publications/i/item/modes-of-transmission-of-virus-causing-covid-19-implications-for-ipc-precaution-recommendations>

- INTERIM GUIDANCE ON MASKS

[https://www.who.int/publications/i/item/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-\(2019-ncov\)-outbreak](https://www.who.int/publications/i/item/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-(2019-ncov)-outbreak)

- Q&A ON TRANSMISSION

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/q-a-how-is-covid-19-transmitted>

- Q&A: SCHOOLS AND COVID-19

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/q-a-schools-and-covid-19>

- BREASTFEEDING AND COVID-19

<https://www.who.int/publications/i/item/10665332639>

Recent studies

Transmission of COVID-19

- SARS-COV-2 REVERSE GENETICS REVEALS A VARIABLE INFECTION GRADIENT IN THE RESPIRATORY TRACT; *Cell* 2020
 - This paper supports the understanding that SARS-CoV-2 replicates in the upper airways and helps explain why virus is present in large quantities even before, and around the time, that symptoms begin to appear.

- PHYSICAL DISTANCING INTERVENTIONS AND INCIDENCE OF COVID-19: NATURAL EXPERIMENT IN 149 COUNTRIES; *BMJ*; July 15, 2020
 - This study showed that physical distancing was associated with a 13% lower incidence of COVID-19. Early movement restrictions were associated with lower COVID-19 incidence compared with later implementation.

- ABSENCE OF APPARENT TRANSMISSION OF SARS-COV-2 FROM TWO STYLISTS AFTER EXPOSURE AT A HAIR SALON WITH A UNIVERSAL FACE COVERING POLICY; *CDC MMWR*; July 17, 2020
 - 139 clients were in contact with two hair stylists with confirmed COVID-19 and symptoms. There were no secondary cases reported. The 67 clients tested all had negative test results.
 - Both the stylists and the clients wore face masks, which likely prevented spread of COVID-19.

Cell 2020 [https://www.cell.com/cell/pdf/S0092-8674\(20\)30675-9.pdf](https://www.cell.com/cell/pdf/S0092-8674(20)30675-9.pdf)

BMJ; July 15, 2020 <https://www.bmj.com/content/bmj/370/bmj.m2743.full.pdf>

CDC MMWR; July 17, 2020 <https://www.cdc.gov/mmwr/volumes/69/wr/pdfs/mm6928e2-H.pdf>

What information is needed to better understand COVID-19 transmission?

WHO and partners are working to better understand:

- **transmission routes**, including via droplets of different sizes, physical contact, surfaces and objects, and the role of aerosol transmission in the community;
- **dose of virus required** for infection to occur;
- **characteristics of people**, settings and situations in which superspreading events are observed (e.g. in some closed settings);
- **proportion of infected persons who remain asymptomatic** throughout the course of their infection; the proportion of these who transmit the virus to others;
- **specific factors that drive asymptomatic and pre-symptomatic transmission** and the proportion of infections arising from asymptomatic individuals.



EPI•WIN

infodemic
MANAGEMENT

www.who.int/epi-win