

V1. Fact Sheet – Respiratory Transmission – Covid-19 (March 2020)

NB: This fact sheet was developed by the Johns Hopkins Center for Humanitarian Health for the OFDA-funded READY Initiative. Given the evolving nature of the pandemic, it will be updated as new information and guidance become available.

Risk factors	<ul style="list-style-type: none"> • (International) travel • Overcrowding (places of close contact i.e. schools, churches, workplaces and public transportation) • Poor ventilation / hygiene practices • Potential zoonotic spillover events • Person-to-person transmission • Nosocomial transmission • Elderly 	
General Prevention	Healthcare Providers	All
	<ul style="list-style-type: none"> • Droplet precautions <ul style="list-style-type: none"> ✓ Personal protective equipment (gloves, gown, mask, eye protection) ✓ Hand hygiene ✓ Patient isolation ✓ Caution when performing aerosol-generating procedures (i.e. intubation) ✓ Decontamination of patient environment and equipment ✓ Cough etiquette ✓ Prevention of needle-sticks/sharps 	<ul style="list-style-type: none"> • Risk Communication and Community Engagement <ul style="list-style-type: none"> ✓ Community mitigation and Contingency Plans • Standard precautions and infection control <ul style="list-style-type: none"> ✓ Hand hygiene ✓ Avoid close contact with sick people ✓ Cover mouth and nose while coughing and sneezing – use of masks for people who are ill ✓ Avoid touching eyes, nose, mouth ✓ Limit contact with others/stay home if you are sick ✓ Surface and object cleaning and disinfection ✓ Avoid crowding ✓ Workplace closures and travel restrictions ✓ School closures
Immunization	Vaccine not available	

Transmission	<p>The disease can spread from person to person through small droplets from the nose or mouth which are spread when a person with COVID-19 coughs or exhales. These droplets land on objects and surfaces around the person. Other people then catch COVID-19 by touching these objects or surfaces, then touching their eyes, nose or mouth. People can also catch COVID-19 if they breathe in droplets from a person with COVID-19 who coughs out or exhales droplets. This is why it is important to stay more than 1 meter (3 feet) away from a person who is sick¹.</p> <p>WHO is assessing ongoing research on the ways COVID-19 is spread and will continue to share updated findings.</p>
Signs and Symptoms	<p>Reported illnesses have ranged from mild symptoms to severe illness and death for confirmed coronavirus disease 2019 (COVID-19) cases. These symptoms may appear 2-14 days after exposure</p> <ul style="list-style-type: none"> • Fever • Cough • Shortness of breath <p>Emergency warning signs include:</p> <ul style="list-style-type: none"> • Trouble breathing • Persistent pain or pressure in the chest • New confusion or inability to arouse • Bluish lips or face
Diagnostics	<p>Suspect cases should be screened for the virus with nucleic acid amplification tests (NAAT), such as RT-PCR.</p>
Treatment	<p>To date, there is no vaccine and no specific antiviral medicine to prevent or treat COVID-2019. However, those affected should receive care to relieve symptoms. People with serious illness should be hospitalized. Most patients recover thanks to supportive care.</p> <p>Possible vaccines and some specific drug treatments are under investigation. They are being tested through clinical trials. WHO is coordinating efforts to develop vaccines and medicines to prevent and treat COVID-19.</p> <p>The most effective ways to protect yourself and others against COVID-19 are to frequently clean your hands, cover your cough with the bend of elbow or tissue, and maintain a distance of at least 1 meter (3 feet) from people who are coughing or sneezing².</p>
Definition of Pandemic	<p>In 2010, the W.H.O. defined a pandemic as “the worldwide spread of a new disease” that affects large numbers of people.</p> <p>The C.D.C. says it is “an epidemic that has spread over several countries or continents, usually affecting a large number of people.”</p>

	Pandemic Influenza	MERS-CoV3	SARS-CoV4
Past airborne and respiratory outbreaks^{5,6,7} and pandemic since 1918	<ul style="list-style-type: none"> • 1918: 50 million deaths worldwide in one year • 1957-1958 (H2N2): 1.1 million deaths worldwide in one year • 1968 (H3N2): 1 million deaths worldwide in one year • 2004-2009 (H5N1): ~300 deaths, major impacts to poultry production and trade • 2009 (H1N1): estimated 151,700-575,400 deaths in the first year 	<p>2,468 cases since 2012</p> <p>851 deaths since 2012</p> <p>27 countries. Predominantly Saudi Arabia⁸</p>	<p>8,098 cases in 2003</p> <p>774 deaths in 2003</p> <p>26 countries⁹</p>

Epidemiology

R₀ (average secondary cases from each case, fully susceptible pop.)

Range between $1.7 \leq R_{0,eff} \leq 3.3^{10}$

Generation time (time between consecutive cases)

Average serial intervals 4.0 days¹¹

Incubation period (time from infection to symptoms)

Median incubation ≈ 5.1 days¹²
 2-14 days represents the current official estimated range for the novel coronavirus COVID-19. However, a case with an incubation period of 27 days has been reported by Hubei Province

Infectious period (infectivity duration)

SARS-CoV-2 virus can initially be detected 1–2 days prior to symptom onset in upper respiratory tract samples; the virus can persist for 7–12 days in moderate cases and up to 2 weeks in severe cases (WHO mission to China Report). In faeces, viral RNA has been detected in up to 30% of patients from day 5 after onset and up to 4 to 5 weeks in moderate cases. The significance of faecal viral shedding for transmission still has to be clarified. Prolonged viral shedding from nasopharyngeal aspirates – up to at least 24 days after symptom onset – was reported among COVID-19 patients in Singapore. Researchers from Germany also reported prolonged viral shedding with high sputum viral load after recovery in a convalescent patient. They acknowledge, however, that viability of SARS-CoV-2 detected by qRT-PCR in this patient has not been proven by viral culture. Prolonged virus shedding has been observed among convalescent children after mild infections, in respiratory tract samples (22 days) and faeces (between two weeks and more than one month)¹³.

Case Fatality Ratio

Global prediction Interval¹⁴

0,60 to 7,19

Impact

Short term

Individual level

Population level

- Increased absenteeism from work related to closure of schools and childcare facilities, illness, care for those ill and fear of infection
- (Temporary) loss of caregiver and/or head of household for families resulting in lack of provision of income, supervision and food supply
- Educational disruptions from discouraged use of large gathering places

- Societal, economic and service disruption delays due to movement restrictions
- Denial of severity of the disease because signs and symptoms are similar to seasonal flu
- Fear of healthcare workers due to their PPE appearance and quick global spread potential of the disease

Impact

Short term

Individual level

Population level

- Discrimination towards those who are sick, family members, caretakers and healthcare workers due to fear and paranoia of contracting condition
- Psychosocial distress from easy transmission of viruses especially for those being cared for at home
- Psychosocial distress from loss of family members Decline in treatment of other diseases resulting in uncontrolled management of chronic or acute conditions

- Absenteeism of healthcare for fear of nosocomial transmission
- Temporary loss of income from the head of household/caregiver could result in children being forced into labor and/or pulled from school to take on caregiver responsibilities
- Psychosocial distress from being in virus hot zones
- Disruption in food supply if production and trade become affected by outbreak
- Disruption in travel and tourism
- Possible unrest due to fear, mistrust, misinformation/rumors and lack of access to supplies and services
- Disruption/deprioritization of routine health services
- Potential environmental degradation from inappropriate control measures (e.g. wildlife culling, habitat destruction)

Long term

Individual level

Population level

- Child protection concerns due to orphaned children whose parents, head of household or caretakers were victims of the disease
- Psychosocial distress due to loss of family members

- Lack of healthcare workers due to disease contraction, fear of nosocomial transmission and deaths
- Overburdened healthcare system leading to burnout of staff and loss of healthcare infrastructure

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| | <ul style="list-style-type: none"> • Loss of caregivers for families resulting in lack of provision of income, supervision and food supply • Mental health conditions resulting from stigma and lack of resources for support groups | <ul style="list-style-type: none"> • Economic instability if trade and production have been limited for a long time • Mental health conditions from being in an outbreak area, losing a loved one or having been infected • Large orphan population • Decrease in livelihoods due to long term disease presence |
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¹ <https://www.who.int/news-room/q-a-detail/q-a-coronaviruses>

² <https://www.who.int/news-room/q-a-detail/q-a-coronaviruses>

³ WHO. Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Factsheet. [https://www.who.int/en/news-room/fact-sheets/detail/middle-east-respiratory-syndrome-coronavirus-\(mers-cov\)](https://www.who.int/en/news-room/fact-sheets/detail/middle-east-respiratory-syndrome-coronavirus-(mers-cov))

⁴ WHO. SARS (Severe Acute Respiratory Syndrome) Factsheet. <https://www.who.int/ith/diseases/sars/en/>

⁵ <https://www.cdc.gov/flu/pandemic-resources/basics/past-pandemics.html>

⁶ <https://www.who.int/emergencies/mers-cov/en/>

⁷ <https://www.cdc.gov/sars/about/fs-sars.html>

⁸ <https://www.cdc.gov/coronavirus/mers/index.html>

⁹ https://www.who.int/csr/sarsarchive/2003_04_12/en/

¹⁰ <https://arxiv.org/pdf/2002.07572.pdf>

¹¹ https://wwwnc.cdc.gov/eid/article/26/6/20-0357_article

¹² <https://www.sciencedaily.com/releases/2020/03/200310164744.htm>

¹³ <https://www.ecdc.europa.eu/sites/default/files/documents/COVID-19-Discharge-criteria.pdf>

¹⁴ <https://www.cebm.net/global-covid-19-case-fatality-rates/>