

COVID-19 Scientific and Public Health Policy Update – (March 31, 2020)

In addition to our weekly brief on the spread of COVID-19 and the actions that Africa CDC is taking to help member states, Africa CDC has begun to share a weekly brief detailing the latest changes in scientific knowledge and public health policy changes, as well as updates to the latest guidance from WHO and others. Contents of this document are not intended to serve as recommendations from the Africa CDC; rather, it is a summary of the factbase to help inform member states. It is important to note that the outbreak is evolving rapidly and that the nature of this information will continue to change. So, we will continue to provide regular updates to ensure member states are informed of the most critical developments in these areas.

A. Executive summary

- An Imperial College report on the impact of non-pharmaceutical interventions on COVID-19 in 11 European countries suggests that current interventions will have averted ~59,000 deaths up to 31 March. Across all 11 countries, the report estimates between 7 and 43 million individuals have been infected with SARS-CoV-2 up to 28th March, representing between 1.88% and 11.43% of the population.
- A study shows a potentially high false negative rate of RT-PCR testing for SARS-CoV-2 in patients clinically diagnosed with COVID-19 implying that a combination of RT-PCR and clinical indicators should be used not only for diagnosis and treatment but also for isolation and recovery/discharge.
- The US FDA has issued an emergency use authorization for hydroxychloroquine and chloroquine, for coronavirus treatment, despite limited evidence. The organization has also approved the emergency use of plasma for patients in need in New York City.
- The US FDA has recently given emergency use authorization (EUA) to a “Lab in a Box” effort (technology that can give a positive test result in 5 minutes and a negative in 15) by Abbot. Senegal has begun validation trials on a COVID-19 diagnostic test that can be done at home and produce results in as little as 10 minutes - all for \$1.
- As cases in the continent continue to rise over the past week, African countries have imposed tighter travel and public health policies such as border closures e.g., Botswana, DRC and lockdowns e.g., South Africa, Algeria, Congo Republic.
- Member States have also expanded their testing strategies e.g., South Africa and Kenya are planning to conduct mass testing and private labs in the countries have started to offer tests.
- A statistical analysis of the relationship between COVID-19 transmission and local temperature suggests that a 1°C increase in local temperature could reduce transmission by 13% on the average. However, further laboratory studies on the temperature-COVID-19 relationship should be conducted to validate this claim. (Not peer-reviewed)
- As the pandemic spreads more countries globally continue to implement stringent measures to curb the pandemic, with the most affected countries outside China opting to extend their lockdowns and social distancing measures.

B. New guidelines and resources

- Since March 23rd, WHO has published new and updated guidance on [Laboratory testing strategy recommendations for COVID-19](#), [Infection Prevention and Control for the safe management of a dead body in the context of COVID-19](#), [IPC guidance for Long-Term Care Facilities](#), [Considerations for quarantine of individuals in the context of containment for coronavirus disease \(COVID-19\)](#), [Coronavirus disease \(COVID-19\) technical guidance: COVID-19 Critical Items](#), [Guiding principles for immunization activities during the COVID-19 pandemic](#), [Operational considerations for case management of COVID-19 in health facility and community](#) and [Rational use of PPE for coronavirus disease 2019 \(COVID-19\)](#)
- US CDC has published new and updated guidance on [Collection and Submission of Postmortem Specimens from Deceased Persons with Known or Suspected COVID-19](#), [Interim Infection Prevention and Control Guidance for Dental Settings During the COVID-19 Response](#), [Alternate Care Sites and Isolation Sites](#), [Infection Control](#), [Travel](#), [Cleaning And Disinfecting Your Home](#), [Household Checklist](#), [Caring for Children](#), [Stress and Coping](#)
- ECDC has issued new guidance and resources on [Disinfection of environments in healthcare and non-healthcare settings potentially contaminated with SARS-CoV-2](#), [Cloth masks and mask sterilisation as options in case of shortage of surgical masks and respirators](#) and [Considerations relating to social distancing measures in response to COVID-19](#)
- The full list of latest guidance and resources from WHO and other public health institutions are listed at the end of this update in **section G**.

C. Scientific updates

Basic science (virology, immunology, pathogenesis)

- The results from whole genome analysis suggest that homologous recombination has occurred between [bat and pangolin CoVs that triggered cross-species transmission and emergence of SARS-CoV-2](#) and SARS-CoV-2 is still evolving for its adaptability. (Not peer-reviewed).
- This is the [first human-to-cat transmission of SARS-CoV-2](#) was reported in Belgium. The domestic cat tested positive for COVID-19 and infected by its owner noted. This is rare case as cases of contamination of domestic animals are unusual.

Epidemiology

- A statistical analysis of the relationship between COVID-19 transmission and local temperature based on ~170,000 confirmed cases from 134 countries from January 22 to March 15, 2020 suggests that [a 1°C increase in local temperature could reduce transmission by 13%](#) on the average. However, further laboratory studies on the temperature-COVID-19 relationship should be conducted to validate this claim. (Not peer-reviewed)

- An Imperial College report on the impact of non-pharmaceutical interventions on COVID-19 in 11 European countries suggests that [current interventions will have averted ~59,000 deaths up to 31 March](#). Many more deaths will be averted through ensuring that interventions remain in place until transmission drops to low levels. Across all 11 countries, the report estimates between 7 and 43 million individuals have been infected with SARS-CoV-2 up to 28th March, representing between 1.88% and 11.43% of the population.
- A study on the outbreak in Italy reported a [7.2% case-fatality rate in Italy which is substantially higher than in 2.3% CFR in China](#). Authors attribute this high CFR to the higher share of >70 year old patients, the definition of a COVID-19 related death based on testing positive for SARS-CoV-2 (independent from preexisting diseases that may have caused death) and stringent testing strategies i.e., prioritizing testing for patients with severe clinical symptoms and require hospitalization.
- An early molecular epidemiological tracing using the molecular characterization and a phylogenetic analysis of the first three complete genomes of SARS-CoV-2 [suggest that the virus entered Northern Italy 3-5 weeks before the first reported cases of infection in the region](#).
- A detailed analysis of SARS-CoV-2's structure that [virus' receptor-binding domain \(RBD\) recognizes hACE2 better than SARS-CoV's RBD](#) does (potentially explaining why COVID-19 is more infectious than SARS). The study also sheds light on the virus' transmission mechanism from bats to humans, the possibility of an intermediate host and potential intervention strategies e.g., neutralizing monoclonal antibodies targeting SARS-CoV-2 RBM, RBD as a sub-unit vaccine.
- A study suggests that [blood lymphocyte percentage \(LYM%\) can be used as a reliable indicator to classify the moderate, severe, and critical ill types](#) independent of any other auxiliary indicators and that lymphopenia is an effective and reliable indicator of the severity and hospitalization in COVID-19 patients.
- A study conducted in a nursing facility indicates [long-term care facilities are high-risk settings for severe outcomes from outbreaks of Covid-19](#), a total of 167 confirmed cases of Covid-19 affecting 101 residents, 50 health care personnel, and 16 visitors were found to be epidemiologically linked to the facility.

Diagnostics

- RT-PCR¹ results showed a fluctuating trend in a retrospective study of 610 hospitalized patients in Wuhan. The study [reported a potentially high false negative rate of RT-PCR testing for SARS-CoV-2 in patients clinically diagnosed with COVID-19](#). A combination of RT-PCR and clinical indicators should be used not only for diagnosis and treatment but also for isolation and recovery/discharge.
- The US FDA has recently given emergency use authorization (EUA) to a "Lab in a Box" effort by Abbot. According to Abbott, the technology could give a [positive test result in about five minutes, and a negative result in about 15](#). The company aims to start shipping kits next week. Similarly, a transnational research team has received funding from the

¹ Real-time reverse-transcriptase polymerase-chain-reaction (RT-PCR)

Canadian federal government to develop a [low-cost, portable system \(“Lab in a Box”\)](#) to test for COVID-19.

- Mammoth Biosciences and virologists from the University of Washington are looking to develop a [CRISPR-based approach](#) to detecting the coronavirus.
- Senegal has begun [validation trials on a COVID-19 diagnostic test that can be done at home and produce results in as little as 10 minutes](#) - all for \$1.

Care and Treatment

- The US FDA has issued an [emergency use authorization for hydroxychloroquine and chloroquine](#), for coronavirus treatment, despite limited evidence. The organization has also approved the [emergency use of plasma for patients in need in New York City](#).
- [Russia claims to have developed a drug for the treatment of COVID-19, based on antimalarial drug mefloquine](#). Mefloquine could prevent virus replication in cells and as a result, stop the inflammatory process caused by the virus.
- A review article highlights the [potential benefits of melatonin in the treatment of COVID-19 patients](#). There is significant data showing that melatonin limits virus-related diseases and would also likely be beneficial in COVID-19 patients. However, additional experiments and clinical studies are required to confirm this speculation.

Vaccines

- [CEPI](#) announced a \$4.4 million vaccine project in partnership with Novavax and the University of Oxford.

Country readiness

- Findings from an analysis of indicators from the IHR State Party Annual Reporting (SPAR) tool; prevent, detect, respond, enabling function, and operational readiness, indicates that [no countries in the African region were at level 5 \(highest level\) for operational readiness](#).

D. Related Public Health Policy

Contents of this section include only publicly announced public health policies. The source of information varies from official government communique, embassy reports and press search.

Africa

- Over the past week, as cases in the continent continue to rise, additional Member States have imposed tighter travel and public health policies to manage the outbreak:
 - **Full border closure (air, land, sea)** except for cargo / freight and emergencies: [Botswana](#), [DRC](#)
 - **International air traffic closure:** [Eritrea](#), Kenya, [Liberia](#)
 - **Flight suspensions to/from high risk countries:** All Member States have currently suspended flights from the most affected countries.

- **Lock down (limiting of movement outside home) and curfew:** [Algeria](#), [Congo Republic](#), [Eritrea](#), [eSwatini](#), [Lesotho](#), [South Africa](#), [Sudan](#), Zimbabwe
- **Shutdown of educational / religious institutions and entertainment venues, banning of mass gatherings:** [Eritrea](#)
- **Others:** In an effort to curb the spread of the virus, [Sudan](#) and [Ethiopia](#) has both released over 4000 prisoners.
- As Member States impose lockdowns and domestic travel restrictions, some have rolled out **basic needs support programs to vulnerable households**
 - [South Africa](#) has deployed 235 food banks to feed those in need, has set up handwashing facilities in public areas, has deployed water tankers in rural areas and has started to identify potential land plots where residents of dense areas could be moved.
 - [Morocco](#) is offering a finance stipend of \$80-\$120 to every head of a household operating in the informal sector whose activity has been impacted by the lockdown; the jobless who are affiliated with the country's pension fund will receive a monthly stipend of \$200 until June
 - [Kenya](#) has announced a 100% tax relief for Kenyans earning gross salary of less than Sh24,000 (\$240) and reduced income tax down from 30% to 25%.
 - [Rwanda](#) is providing food relief from the country's National Strategic Grain Reserve to vulnerable families affected by the lockdown
 - [Lagos' and Ekiti's state government](#) launched an Emergency Food Response to support the vulnerable
- Countries have also continued to **expand their testing capabilities** e.g.,
 - [The East African Community \(EAC\)](#) has deployed mobile laboratories and testing kits in 4x4 vehicles that have been fitted with laboratory and testing equipment
 - [South Africa](#) announced last Monday (30 Mar) plans to conduct mass testing where 10,000 field workers will go door to door to conduct COVID-19 tests. The country's [private laboratories](#) have also offered COVID-19 tests to the public.
 - [Kenya](#) has embarked on mass testing for all those persons who arrived in the country last week and are currently under mandatory quarantine in various designated hotels and government facilities, the health minister announced last Sunday. Some [private laboratories](#) in the country have also started to offer COVID-19 tests.
- Countries have also ramped up resources allocated to their COVID-19 response
 - [Algeria](#) has allocated \$100 million for importing pharmaceutical products, personal protection equipment and chemical analysis equipment
 - [Nigeria](#) has released a 10 billion Naira grant to Lagos and 5 billion Naira special intervention fund for Nigeria Center for Disease Control (NCDC)
 - [Morocco](#) will spend an initial two billion dirhams (\$200 million) to help its health system cope with the coronavirus outbreak; the country's Ministry of Health, following consultations with their technical and scientific, will be [supplying health facilities across the country with chloroquine and hydroxychloroquine](#), to mobilize against the novel coronavirus

- [South Africa's Ministry of Communications and Digital Technologies](#) has proposed to track people using their phones and devices in a bid to contain COVID-19. Revisions are underway following an outcry on privacy concerns.
- [Ethiopian Airlines](#) has suspended flights to over 80 destinations as at 29 March, however, all its cargo operations remain intact
- The Bureau of the African Union Heads of State and Government, chaired by H.E President Cyril Ramaphosa, has established a continental Anti-COVID-19 Fund to which member states of the Bureau agreed to immediately contribute \$12.5 million as seed funding.
- **Refer to Section E and F** for the full summary of travel restrictions and social distancing measures implemented by African countries.

Rest of World

- As they become the epicenter of the COVID-19 outbreak, US and EU have continued to **impose public health policies to contain the outbreak**, with most extending their social distancing measures.
 - The [United States](#) will extend its social distancing guidelines through April 30 to keep its coronavirus death toll below 100,000. The US also plans to produce 100,000 ventilators in 100 days.
 - [Spain](#) has extended its coronavirus lockdown on Thursday, as it battles with having insufficient supplies to curb the outbreak.
 - [Italy](#) will extend schools shutdown past current April 3 limit
 - [France](#) extends lockdown by two weeks through April 15
 - [UK](#) says 560,000 volunteers signed up to help National Health Service. [The country will punish](#) anyone claiming to have coronavirus.
- Similarly, other countries globally have implemented **stringent travel restrictions and social distancing measures**
 - [Australia](#), [India](#), [New Zealand](#) and etc. have instituted national lockdowns
 - [Japan](#) has imposed an entry ban on 21 countries
 - [Singapore](#) has imposed stiff penalties against individuals who are violating new rules on physical distancing.
- As supply of critical PPE and medicines for the outbreak dwindle, countries have taken extra **measures to ensure local supply**
 - [Switzerland](#) has introduced temporary restrictions on the export of PPE
 - [India](#) bans export of hydroxychloroquine, a malaria drug that is among the medications that are being tested as a potential treatment for COVID-19
- As new domestic cases wane and imported cases increase, [China](#) lifts Hubei province's lockdown but cuts international flights and bars entry to foreign residents.
- The Tokyo Olympics has been postponed in light of the pandemic with implication for the athletes that qualified this year.

- WHO has launched the [COVID-19 Solidarity Response Fund](#) to raise money from individuals, the private sector, and foundations to finance WHO's response to the COVID-19 pandemic. As at March 13, \$71 million has been raised from 170,000 individuals and organizations.

E. Summary of travel restrictions implemented by Member States

Contents of this section include only publicly announced public health policies. Sources of this section include official government communique and press search.

Last updated	Country	Mandatory facility quarantine for all travelers	Entry restrictions (incl. visa limitations)	Flight / travel suspensions to specific countries	Air traffic closure	Full border closure
29-Mar	Algeria					yes
29-Mar	Angola					yes
29-Mar	Benin	Yes	yes	yes		
29-Mar	Botswana	yes				yes
29-Mar	Burkina Faso					yes
29-Mar	Burundi					yes
29-Mar	Cabo Verde		yes	yes		
29-Mar	Cameroon					yes
29-Mar	Central African Republic				yes	
29-Mar	Chad					yes
29-Mar	Comoros	yes	yes	yes		
29-Mar	Congo Republic					yes
29-Mar	Côte d'Ivoire					yes
29-Mar	Djibouti					yes
29-Mar	DR Congo					
29-Mar	Egypt				yes	
29-Mar	Equatorial Guinea					yes
29-Mar	Eritrea				yes	
29-Mar	eSwatini					yes
29-Mar	Ethiopia	yes	yes	yes		
29-Mar	Gabon					yes
29-Mar	Gambia					yes
29-Mar	Ghana					yes
29-Mar	Guinea	yes				
29-Mar	Guinea-Bissau					yes
29-Mar	Kenya				yes	
29-Mar	Lesotho					
29-Mar	Liberia				yes	Yes

Last updated	Country	Mandatory facility quarantine for all travelers	Entry restrictions (incl. visa limitations)	Flight / travel suspensions to specific countries	Air traffic closure	Full border closure
29-Mar	Libya					yes
29-Mar	Madagascar				yes	
29-Mar	Malawi				yes	
29-Mar	Mali		yes	yes		
29-Mar	Mauritania					yes
29-Mar	Mauritius					yes
29-Mar	Morocco					yes
29-Mar	Mozambique		yes			
29-Mar	Namibia					yes
29-Mar	Niger					yes
29-Mar	Nigeria					yes
29-Mar	Rwanda					yes
29-Mar	Sahrawi Republic					
29-Mar	Sao Tome and Principe		yes			
29-Mar	Senegal					yes
29-Mar	Seychelles	yes	yes			
29-Mar	Sierra Leone					yes
29-Mar	Somalia				yes	
29-Mar	South Africa					yes
29-Mar	South Sudan	yes	yes	yes		
29-Mar	Sudan					yes
29-Mar	Tanzania	yes				
29-Mar	Togo					yes
29-Mar	Tunisia					yes
29-Mar	Uganda					yes
29-Mar	Zambia	yes				
29-Mar	Zimbabwe					yes

F. Summary of social distancing measures implemented by Member States

Contents of this section include only publicly announced public health policies. Sources of this section include official government communique and press search.

Last updated	Country	Closure of schools etc.	Banning of mass gatherings, closure of public spaces	Limitations on prison and hospital visits	Curfew	Partial lockdown ²	National lockdown ³
29-Mar	Algeria	yes	yes		yes	yes	
29-Mar	Angola	yes	yes				
29-Mar	Benin		yes			yes	
29-Mar	Botswana	yes					
29-Mar	Burkina Faso	yes	yes		yes	yes	
29-Mar	Burundi						
29-Mar	Cabo Verde		yes				
29-Mar	Cameroon	yes	yes				
29-Mar	Central African Republic	yes	yes				
29-Mar	Chad	yes	yes	yes		yes	
29-Mar	Comoros						
30-Mar	Congo Republic						yes
29-Mar	Côte d'Ivoire	yes	yes		yes	yes	
29-Mar	Djibouti						yes
29-Mar	DR Congo	yes	yes			yes	
29-Mar	Egypt	yes	yes				
29-Mar	Equatorial Guinea						
29-Mar	Eritrea	yes	yes			yes	
29-Mar	Eswatini	yes	yes	yes		yes	
29-Mar	Ethiopia	yes	yes				
29-Mar	Gabon	yes	yes	yes	yes		
29-Mar	Gambia	yes	yes				
29-Mar	Ghana	yes	yes			yes	
29-Mar	Guinea						
29-Mar	Guinea-Bissau	yes	yes				
29-Mar	Kenya	yes	yes		yes		
29-Mar	Lesotho						yes
29-Mar	Liberia	yes	yes				
29-Mar	Libya	yes			yes		
29-Mar	Madagascar	yes	yes		yes	yes	
29-Mar	Malawi	yes	yes				
29-Mar	Mali	yes	yes		yes		
29-Mar	Mauritania	yes	yes		yes	yes	
29-Mar	Mauritius						yes
29-Mar	Morocco	yes	yes		yes		
29-Mar	Mozambique	yes	yes				

² Restriction of non-essential movement within a specific area in the country

³ Restriction of non-essential movement within

Last updated	Country	Closure of schools etc.	Banning of mass gatherings, closure of public spaces	Limitations on prison and hospital visits	Curfew	Partial lockdown ²	National lockdown ³
31-Mar	Namibia	yes	yes			yes	
29-Mar	Niger	yes	yes				
29-Mar	Nigeria	yes	yes			yes	
29-Mar	Rwanda						yes
29-Mar	Sahrawi Republic						
29-Mar	Sao Tome and Principe						
29-Mar	Senegal	yes	yes		yes		
29-Mar	Seychelles						
29-Mar	Sierra Leone	yes	yes				
29-Mar	Somalia						
29-Mar	South Africa						yes
29-Mar	South Sudan		yes				
29-Mar	Sudan	yes	yes	yes	yes	yes	
29-Mar	Tanzania	yes	yes				
29-Mar	Togo						
29-Mar	Tunisia	yes	yes		yes		
29-Mar	Uganda	yes	yes				
29-Mar	Zambia	yes	yes				
29-Mar	Zimbabwe						yes

G. Guidance and resources (Full list)

WHO guidelines and resources

Organization	Date published	Guidance or resource name
Country readiness		
WHO	9-Jan-2020	National capacities review tool for a novel coronavirus
WHO	22-Mar-2020	Critical preparedness, readiness and response actions for COVID-19
WHO	4-Mar-2020	Operational Planning Guidelines and COVID-19 Partners Platform to support country preparedness and response
Surveillance and case definitions		
WHO	20-Mar-2020	Global Surveillance for human infection with coronavirus disease (COVID-19)
WHO	27-Feb-2020	Revised case reporting form for COVID-19 for confirmed cases and their outcome

Organization	Date published	Guidance or resource name
WHO	n/a	Emerging respiratory viruses, including 2019-nCoV: methods for detection, prevention, response and control
WHO	n/a	Global COVID-19 Clinical Characterization Case Record Form and new data platform for anonymized COVID-19 clinical data
WHO	n/a	Case Reporting Form for COVID-19
Laboratory guidance		
WHO	2-Mar-2020	Laboratory testing for 2019 novel coronavirus (2019-nCoV) in suspected human cases
WHO	1-Mar-2020	Guidance for laboratories shipping specimens to WHO reference laboratories that provide confirmatory testing for COVID-19 virus
WHO	22-Mar-2020	Laboratory testing strategy recommendations for COVID-19
Patient management		
WHO	13-Mar-2020	Clinical management of severe acute respiratory infection when novel coronavirus (nCoV) infection is suspected
WHO	17-Mar-2020	Home care for patients with suspected novel coronavirus (nCoV) infection presenting with mild symptoms and management of contacts
WHO	n/a	WHO Critical Care Severe Acute Respiratory Infection Training Short Course
WHO	19-Mar-2020	The Rights, Roles and Responsibilities Of Health Workers, Including Key Considerations For Occupational Safety And Health
WHO	19-Mar-2020	Mental health and psychosocial considerations during the COVID-19 outbreak
WHO	20-Mar-2020	Maintaining a safe and adequate blood supply during the pandemic outbreak of coronavirus disease (COVID-19)
WHO	19-Mar-2020	Operational considerations for case management of COVID-19 in health facility and community
Infection prevention and control		
WHO	24-Mar-2020	Infection Prevention and Control for the safe management of a dead body in the context of COVID-19
WHO	21-Mar-2020	Infection Prevention and Control guidance for Long-Term Care Facilities in the context of COVID-19
WHO	19-Mar-2020	Considerations for quarantine of individuals in the context of containment for coronavirus disease (COVID-19)
WHO	19-Mar -2020	Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected
WHO	19-Mar-2020	Advice on the use of masks in the community, during home care and in health care settings in the context of the novel coronavirus (2019-nCoV) outbreak

Organization	Date published	Guidance or resource name
WHO	10-Feb-2020	Q&A on infection prevention and control for health care workers caring for patients with suspected or confirmed 2019-nCoV
WHO	11-Feb-2020	Key considerations for repatriation and quarantine of travellers in relation to the outbreak of novel coronavirus 2019-nCoV
WHO	16-Feb-2020	Management of ill travellers at Points of Entry – international airports, seaports and ground crossings – in the context of COVID-19 outbreak
WHO	18-Feb-2020	Surface sampling of coronavirus disease (COVID-19): A practical “how to” protocol for health care and public health professionals
WHO	14-Feb-2020	Key planning recommendations for Mass Gatherings in the context of the current COVID-19 outbreak
WHO	n/a	Online course for public health preparedness for mass gathering events
WHO	n/a	Infection Prevention and Control (IPC) for Novel Coronavirus (COVID-19)
WHO	19-Mar-2020	Rational use of personal protective equipment for coronavirus disease 2019 (COVID-19)
WHO	1-Mar-2016	Handbook for the Management of Public Health Events in Air Transport
WHO	1-Jan-2016	Handbook for management of public health events on board ships
WHO	24-Jan-2011	Handbook for inspection of ships and issuance of ship sanitation certificates
Early investigations		
WHO	25-Jan-2020	Protocol for assessment of potential risk factors for 2019-novel coronavirus (2019-nCoV) infection among health care workers in a health care setting
WHO	25-Jan-2020	Household transmission investigation protocol for 2019-novel coronavirus (2019-nCoV) infection
WHO	29-Jan-2020	The First Few X (FFX) Cases and contact investigation protocol for 2019-novel coronavirus (2019-nCoV) infection
WHO	25-Jan-2020	Global 2019-nCoV Clinical Characterization Case Record Form
WHO	16-Feb-2020	Coronavirus disease (COVID-19) technical guidance: Early investigations
WHO	13-Mar-2020	Considerations in the investigation of cases and clusters of COVID-19
WHO	17-Mar-2020	Population-based age-stratified seroepidemiological investigation protocol for COVID-19 virus infection
Risk communication & community engagement		

Organization	Date published	Guidance or resource name
WHO	16-Mar-2020	Risk Communication and Community Engagement (RCCE) Action Plan Guidance COVID-19 Preparedness and Response
WHO	5-Mar-2020	The COVID-19 Risk Communication Package For Healthcare Facilities
WHO	10-Mar-2020	Risk Communication guidance - COVID-19, older adults and people with underlying medical conditions
WHO	10-Mar-2020	Guidance to protect children and support safe school operations
Disease commodity package		
WHO	10-Jan-2020	Disease commodity package - Novel Coronavirus (nCoV)
WHO	26-Mar-2020	Coronavirus disease (COVID-19) technical guidance: COVID-19 Critical Items
Reduction of transmission of animals to humans		
WHO	n/a	WHO recommendations to reduce risk of transmission of emerging pathogens from animals to humans in live animal markets
Travel advice		
WHO	29-Feb-2020	Updated WHO recommendations for international traffic in relation to COVID-19 outbreak
Others		
WHO	3-Feb-2020	2019-nCoV Strategic Preparedness and Response Plan
IATA (in partnership with WHO)	n/a	Emergency Response Plan and Action Checklist (for air carriers)
IATA (in partnership with WHO)	n/a	Air Transport & Communicable Diseases Guidelines
WHO	12-Feb-2020	2019 Novel Coronavirus: Global Research and Innovation Forum: Towards a Research Roadmap/report
WHO	11-Feb-2020	2019 Novel Coronavirus: Global Research and Innovation Forum: Towards a Research Roadmap/report - presentation
WHO	18-Feb-2020	COVID-19 Phase IIb/III Vaccine Trial Synopsis
WHO	19-Feb-2020	Emerging respiratory viruses, including nCoV: methods for detection, prevention, response and control
WHO	19-Feb-2020	ePROTECT Respiratory Infections (EN)
WHO	24-Feb-2020	Operational considerations for managing COVID-19 cases/outbreak on board ships
WHO	6-Mar-2020	Q&A on COVID-19 vs. Influenza
WHO	26-Mar-2020	Guiding principles for immunization activities during the COVID-19 pandemic

Other public health institutions guidance and resources

Organization	Date published	Guidance or resource name
Country readiness		
ECDC	17-Mar-2020	Guidance for health system contingency planning during widespread transmission of SARS-CoV-2 with high impact on healthcare services
Surveillance and case definitions		
US CDC	2-Feb-2020	Interim Guidance for Healthcare Professionals
US CDC	2-Feb-2020	Flowchart to Identify and Assess 2019 Novel Coronavirus
US CDC	n/a	Check and Record Everyday Booklet – China
US CDC	21-Mar-2020	Information for Health Departments on Reporting Cases of COVID-19
US CDC	22-Mar-2020	Interim US Guidance for Risk Assessment and Public Health Management of Persons with Potential Coronavirus Disease 2019 (COVID-19) Exposures: Geographic Risk and Contacts of Laboratory-confirmed Cases
ECDC	n/a	Case definition and European surveillance for human infection with novel coronavirus (2019-nCoV)
Laboratory guidance		
US CDC	28-Jan-2020	US CDC panel primer and probes– U.S. CDC, USAV – U.S. CDC, USA
US CDC	n/a	Information for Laboratories 2019-nCoV Requests for Diagnostic Panels and Virus
US CDC	n/a	Real-Time RT-PCR Panel for Detection 2019-Novel Coronavirus
US CDC	n/a	2019-Novel Coronavirus (2019-nCoV) Real-time rRT-PCR Panel Primers and Probes
US CDC	17-Feb-2020	Interim Laboratory Biosafety Guidelines for Handling and Processing Specimens Associated with Coronavirus Disease 2019 (COVID-19)
US CDC	21-Mar-2020	Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens from Persons for Coronavirus Disease 2019 (COVID-19)
US CDC	21-Mar-2020	Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens from Persons Under Investigation (PUIs) for Coronavirus Disease 2019 (COVID-19)
US CDC	25-Mar-2020	Collection and Submission of Postmortem Specimens from Deceased Persons with Known or Suspected COVID-19, March 2020 (Interim Guidance)
US CDC	19-Feb-2020	Interim Guidance for Collection and Submission of Postmortem Specimens from Deceased Persons Under Investigation (PUI) for COVID-19, February 2020

Organization	Date published	Guidance or resource name
ECDC	13-Jan-2020	Diagnostic detection of Wuhan coronavirus 2019 by real-time RTPCR
China CDC	24-Jan-2020	China CDC Primers and probes for detection 2019-nCoV
Patient management		
US CDC	n/a	Healthcare Professional Preparedness Checklist For Transport and Arrival of Patients Potentially Infected with 2019-nCoV
US CDC	n/a	Hospital Preparedness Checklist for Suspected or Confirmed 2019-nCoV Patients
US CDC	7-Mar-2020	Interim Clinical Guidance for Management of Patients with Confirmed Coronavirus Disease (COVID-19)
US CDC	31-Jan-2020	Interim Guidance for Implementing Home Care of People Not Requiring Hospitalization for 2019 Novel Coronavirus (2019-nCoV)
US CDC	12-Feb-2020	Interim Guidance for Implementing Home Care of People Not Requiring Hospitalization for 2019 Novel Coronavirus (2019-nCoV)
US CDC	n/a	Interim Guidance on Breastfeeding for a Mother Confirmed or Under Investigation For COVID-19
US CDC	n/a	Frequently Asked Questions and Answers: Coronavirus Disease-2019 (COVID-19) and Children
US CDC	n/a	Frequently Asked Questions and Answers: Coronavirus Disease 2019 (COVID-19) and Pregnancy
US CDC	n/a	What Healthcare Personnel Should Know about Caring for Patients with Confirmed or Possible COVID-19 Infection
US CDC	n/a	Interim Guidance for Public Health Professionals Managing People With COVID-19 in Home Care and Isolation Who Have Pets or Other Animals
US CDC	n/a	Interim Guidance for Healthcare Facilities: Preparing for Community Transmission of COVID-19 in the United States
US CDC	n/a	Preparing for COVID-19: Long-term Care Facilities, Nursing Homes
US CDC	n/a	Steps Healthcare Facilities Can Take Now to Prepare for Coronavirus Disease 2019 (COVID-19)
US CDC	n/a	Criteria for Return to Work for Healthcare Personnel with Confirmed or Suspected COVID-19 (Interim Guidance)
ECDC	30-Jan-2020	Advice to healthcare workers: management of patients with 2019-nCoV infection
ECDC	10-Feb-2020	Guidelines for the use of non-pharmaceutical measures to delay and mitigate the impact of 2019-nCoV
ECDC	10-Mar-2020	Novel coronavirus (SARS-CoV-2) - Discharge criteria for confirmed COVID-19 cases
PHE	5-Mar-2020	Infographic on COVID-19 primary care in the UK

Organization	Date published	Guidance or resource name
Infection prevention and control		
US CDC	21-Feb-2020	Interim Infection Prevention and Control Recommendations for Patients with Confirmed Coronavirus Disease 2019 (COVID-19) or Persons Under Investigation for COVID-19 in Healthcare Settings
US CDC	n/a	Healthcare Supply of Personal Protective Equipment
US CDC	22-Mar-2020	Interim US Guidance for Risk Assessment and Public Health Management of Persons with Potential Coronavirus Disease 2019 (COVID-19) Exposures: Geographic Risk and Contacts of Laboratory-confirmed Cases
US CDC	n/a	Interim Considerations for Infection Prevention and Control of Coronavirus Disease 2019 (COVID-19) in Inpatient Obstetric Healthcare Settings
US CDC	11-Feb-2020	Interim Guidance for Discontinuation of In-Home Isolation for Patients with COVID-19
US CDC	11-Feb-2020	Interim Guidance for Discontinuation of Transmission-Based Precautions and Disposition of Hospitalized Patients with COVID-19
US CDC	25-Feb-2020	Interim Guidance for Preventing the Spread of Coronavirus Disease 2019 (COVID-19) in Homes and Residential Communities
US CDC	n/a	Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with 2019 Novel Coronavirus (2019-nCoV)
US CDC	n/a	Interim Guidance for Public Health Personnel Evaluating Persons Under Investigation (PUIs) and Asymptomatic Close Contacts of Confirmed Cases at Their Home or Non-Home Residential Setting
US CDC	n/a	Healthcare Infection Prevention and Control FAQs for COVID-19
US CDC	n/a	Strategies for Optimizing the Supply of N95 Respirators
US CDC	28-Feb-2020	Checklist for Healthcare Facilities: Strategies for Optimizing the Supply of N95 Respirators during the COVID-19 Response
US CDC	28-Feb-2020	Release of Stockpiled N95 Filtering Facepiece Respirators Beyond the Manufacturer-Designated Shelf Life: Considerations for the COVID-19 Response
US CDC	n/a	Interim Additional Guidance for Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed COVID-19 in Outpatient Hemodialysis Facilities
US CDC	28-Mar-2020	Cleaning And Disinfecting Your Home
US CDC	26-Mar-2020	Infection Control
US CDC	26-Mar-2020	Interim Infection Prevention and Control Guidance for Dental Settings During the COVID-19 Response

Organization	Date published	Guidance or resource name
US CDC	25-Mar-2020	Alternate Care Sites and Isolation Sites
ECDC	29-Jan-2020	Public health management of persons having had contact with novel coronavirus cases in the European Union
ECDC	12-Mar-2020	Infection prevention and control for COVID-19 in healthcare settings
ECDC	7-Feb-2020	Personal protective equipment (PPE) needs in healthcare settings for the care of patients with suspected or confirmed novel coronavirus (2019-nCoV)
ECDC	18-Feb-2020	Interim guidance for environmental cleaning in non-healthcare facilities exposed to SARS-CoV-2
ECDC	2-Mar-2020	Resource estimation for contact tracing, quarantine and monitoring activities for COVID-19 cases in the EU/EEA
ECDC	28-Feb-2020	Guidance for wearing and removing personal protective equipment in healthcare settings for the care of patients with suspected or confirmed COVID-19
ECDC	25-Feb-2020	Public health management of persons, including health care workers, having had contact with COVID-19 cases in the European Union
ECDC	26-Feb-2020	Checklist for hospitals preparing for the reception and care of coronavirus 2019 (COVID-19) patients
ECDC	23-Mar-2020	Considerations related to the safe handling of bodies of deceased persons with suspected or confirmed COVID-19
ECDC	26-Mar-2020	Cloth masks and mask sterilisation as options in case of shortage of surgical masks and respirators
ECDC	26-Mar-2020	Disinfection of environments in healthcare and non-healthcare settings potentially contaminated with SARS-CoV-2
Early investigations		
US CDC	28-Feb-2020	Recommendations for Reporting, Testing, and Specimen Collection
US CDC	3-Feb-2020	Patient Under Investigation form
US CDC	4-Mar-2020	Evaluating and Reporting Patients Under Investigation (PUI)
US CDC	2-Feb-2020	Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens from Patients Under Investigation (PUIs) for 2019 Novel Coronavirus (2019-nCoV)
US CDC	n/a	Information for Health Departments on Reporting a Patient Under Investigation (PUI) for 2019-nCoV
US CDC	n/a	Case Report Form for 2019 Novel Coronavirus
ECDC	30-Jan-2020	Algorithm for management of contacts of probable or confirmed 2019-nCoV cases
Risk communication & community engagement		
US CDC	24-Feb-2020	CDC in Action: Preparing Communities for Potential Spread of COVID-19

Organization	Date published	Guidance or resource name
US CDC	n/a	Interim Guidance: Get Your Household Ready for Coronavirus Disease 2019 (COVID-19)
US CDC	n/a	Interim Guidance for Administrators of US Childcare Programs and K-12 Schools to Plan, Prepare, and Respond to Coronavirus Disease 2019 (COVID-19)
US CDC	8-Mar-2020	Resources for Institutes of Higher Education
US CDC	8-Mar-2020	COVID-19 and Cruise Ship Travel
US CDC	8-Mar-2020	Environmental Cleaning and Disinfection Recommendations
US CDC	8-Mar-2020	People at Risk for Serious Illness from COVID-19
US CDC	8-Mar-2020	What law enforcement personnel need to know about coronavirus disease 2019 (COVID-19)
US CDC	n/a	Resources for Community- and Faith-Based Leaders
US CDC	n/a	Resources for Homeless Shelters
US CDC	n/a	Protect Your Home
US CDC	17-Mar-2020	Protect Your Family
US CDC	n/a	How to Prepare for COVID-19
US CDC	18-Mar-2020	How to Protect Yourself
US CDC	21-Mar-2020	Older Adults
US CDC	17-Mar-2020	People with Asthma and COVID-19
US CDC	22-Mar-2020	Schools, Workplaces & Community Locations
US CDC	27-Mar-2020	Household Checklist
US CDC	28-Mar-2020	Caring for Children
US CDC	28-Mar-2020	Stress and Coping
ECDC	13-Feb-2020	Guidance on community engagement for public health events caused by communicable disease threats in the EU/EEA
ECDC	12-Mar-2020	Information on COVID-19 for specific groups: the elderly, patients with chronic diseases, people with immunocompromising condition and pregnant women
ECDC	11-Mar-2020	Considerations relating to social distancing measures in response to the COVID-19 epidemic
Disease commodity package		
US CDC	2-Feb-2020	Interim Laboratory Biosafety Guidelines for Handling and Processing Specimens Associated with 2019 Novel Coronavirus (2019-nCoV)
Travel advice		
US CDC	n/a	Travelers from China Arriving in the United States
US CDC	n/a	Communication Resources for Travelers
US CDC	22-Mar-2020	Coronavirus Disease 2019 Information for Travel
US CDC	27-Mar-2020	Travel

Organization	Date published	Guidance or resource name
ECDC	30-Jan-2020	<u>Advice for travellers: outbreak of a novel coronavirus 2019-nCoV</u>
Others		
US CDC	13-Feb-2020	<u>Interim Guidance for Airlines and Airline Crew: Coronavirus Disease 2019 (COVID-19)</u>
US CDC	4-Feb-2020	<u>2019 Novel Coronavirus: Interim Health Guidance from the Federal Aviation Administration and the Centers for Disease Control and Prevention for Air Carriers and Crews</u>
US CDC	n/a	<u>Preventing Spread of Disease on Commercial Aircraft: Guidance for Cabin Crew</u>
US CDC	n/a	<u>Interim Guidance for Businesses and Employers to Plan and Respond to 2019 Novel Coronavirus (2019-nCoV), February 2020</u>
US CDC	n/a	<u>Interim Guidance for Emergency Medical Services (EMS) Systems and 911 Public Safety Answering Points (PSAPs) for 2019-nCoV in the United States</u>
US CDC	18-Feb-2020	<u>Interim Guidance for Ships on Managing Suspected Coronavirus Disease 2019</u>
ECDC	23-Mar-2020	<u>Coronavirus disease 2019 (COVID-19) and supply of substances of human origin in the EU/EEA</u>
Social distancing		
ECDC	18-Mar-2020	<u>Video on COVID-19: Why social distancing is important</u>
ECDC	23-Mar-2020	<u>Considerations relating to social distancing measures in response to COVID-19 – second update</u>