

# COVID-19 Scientific and Public Health Policy Update – (06 April 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

- A multi-center randomised controlled clinical trial of the BCG vaccine against COVID-19, with an aim to validate whether BCG related boosting of innate immunity can lead to reduction in the prevalence and severity of COVID-19 symptoms in healthcare workers has been announced.
- Despite debate over the safety of non-steroidal anti-inflammatory drugs (NSAIDs) in treating COVID-19, the European Medicines Agency said that ibuprofen could be considered for treating COVID-19, highlighting that there is currently no scientific evidence establishing a link between ibuprofen and worsening COVID-19.
- Based on a study conducted, manual contact tracing is not sufficient, therefore digital contact tracing through mobile-phone applications could achieve sustainable epidemic suppression. Results from a similar study suggest that smartphone application allows users to create "checkpoints" for contact tracing.
- In view of the shortage in PPE supplies on the globally, the US CDC recently issued recommendations on the use of masks as well as instruction to the general public on use of cloth face covering to mitigate spread.
- A virological analysis in Germany confirmed active replication in the throat due to viral replicative RNA intermediates found in throat samples. The report also suggests that pharyngeal virus shedding peaks at day 5 of symptoms. Seroconversion is also discussed.
- Multiple AU Member States (e.g., Algeria, Cameroon, Ghana) have extended the duration of or tightened their social distancing measures. Member States are ramping up testing e.g., South Africa continue to conduct drive thru testing and will expand capacity using GeneXpert machines.
- With the increased mitigation efforts to curb the outbreak, Google has contextualized how people's movements have been affected by lockdowns, showing a decrease in commercial movements and increase in residential movement. And a mathematical model suggests that a 21-day lockdown maybe insufficient to contain the spread in India.

## B. New guidelines and resources

- Since 30 March 2020, WHO has published new and updated guidance on: [Modes of transmission of virus causing COVID-19: implications for IPC precaution recommendations](#), [Guidance for laboratories shipping specimens to WHO reference laboratories that provide confirmatory testing for COVID-19 virus](#); [Off-label use of medicines for COVID-19](#) ; [Recommendations to Member States to improve hand hygiene practices to help prevent the transmission of the COVID-19 virus Interim guidance](#); [Considerations in the investigation of cases and clusters of COVID-19](#); [Guide to Local Production: WHO-recommended Handrub Formulations](#); [Information Note on Tuberculosis and COVID-19](#) and the [weekly update on the IVD Emergency Use Listing \(EUL\)](#).
- US CDC has published new and updated guidance on: [Strategies for Optimizing the Supply of N95 Respirators](#); [Personal Protective Equipment When Caring for COVID-19 Patients Factsheet](#); [Use of Cloth Face Coverings to Help Slow the Spread of COVID-19](#)
- ECDC has issued new guidance and resources on: the [overview of the rapid test situation for COVID-19 diagnosis in the EU/EEA](#), [Infection prevention and control and preparedness for COVID-19 in healthcare settings - second update](#), [Infection prevention and control in the household management of people with suspected or confirmed coronavirus disease \(COVID-19\)](#)
- Other relevant guidance : [US DHHS Interim Guidance for COVID-19 and Persons with HIV](#) ; [FDA Emergency Use Authorizations \(Ventilators, Personal Protective Equipment, In Vitro Diagnostic\)](#); [Announcement on Xpert Express SARS-CoV-2 Cartridge availability from the Stop TB partnership Global Drug Facility](#); [Stop TB partnership Information note: digital health technologies, virtual care and community-based monitoring solutions for TB programmes during the covid-19 pandemic and beyond](#), [PHE guidance on COVID-19 personal protective equipment \(PPE\)](#).

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)

- A [virological analysis](#) of nine cases in Germany confirmed active replication in the throat due to viral replicative RNA intermediates found in throat samples. The report also suggests that pharyngeal virus shedding peaks at day 5 of symptoms. Shedding of viral RNA from sputum outlasted the end of symptoms. Seroconversion occurred after 7 days in 50% of patients (14 days in all), but was not followed by a rapid decline in viral load.
- A study suggests that the [virus replicates poorly in dogs, pigs, chickens and ducks but efficiently in ferrets and cats](#). (Not peer-reviewed).

## Epidemiology

- A retrospective, multi-centre cohort study of 191 patients in Wuhan, reports [viral shedding in survivors for an average duration of 20 days](#), shortest time was 8 days and the longest observed duration of viral shedding in survivors was 37 days.
- A cohort study of 33 neonates born to mothers with COVID-19 in Wuhan [reports 3 \(9%\) neonates with COVID-19](#). The vertical maternal-foetal transmission cannot be ruled out based on this study, as strict infection control and prevention procedures were implemented during the delivery.
- A retrospective study on 6 pregnant women with confirmed COVID-19 and their infants to detect antibodies in the new-borns. Although, SARS-CoV-19 was not detected in the serum or throat swab by RT-PCR in any of their new-borns, [virus-specific antibodies were detected in neonatal blood sera samples](#). Findings are limited as this is a single case and no PCR testing of amniotic fluid or placenta was performed.

## Diagnostics

- The study presents a [novel visual reverse transcription loop-mediated isothermal amplification \(RT-LAMP\) assay for rapid and sensitive detection of SARS-CoV-2 using mismatch-tolerant technique](#). The novel RT-LAMP assay can be applied in primary care and community hospitals or health care centres, and even patients' own houses.
- Results from this study support the [use of minimum essential media \(MEM\), sterile phosphate buffered saline \(PBS\), or 0.9% saline as alternatives to viral transport media \(VTM\) for SARS-CoV-2 testing](#).

## Care and Treatment

- Despite debate over the safety of non-steroidal anti-inflammatory drugs (NSAIDs) in treating COVID-19, the [European Medicines Agency said that ibuprofen could be considered for treating the emerging viral illness in some cases](#), highlighting that there is currently no scientific evidence establishing a link between ibuprofen and worsening COVID-19.
- Results from a Korean single Community Treatment Center (CTC) with 309 COVID-19 patients, [report 107 \(64.4%\) patients were discharged without any complication](#). Although it is a novel concept and may have some limitations, CTC may be a very cost-effective and resource-saving strategy in managing massive cases of COVID-19.
- Results of an in vitro study demonstrate that [ivermectin has antiviral action against the SARS-CoV-2 clinical isolate in vitro](#), with a single dose able to control viral replication within 24-48 h in our system. There is a need for further trials to explore if ivermectin is a possible treatment option.
- An uncontrolled case series of 5 critically ill patients with COVID-19 treated with convalescent plasma transfusion, [suggests that antibody treatments could improve patients' clinical status](#). Further clinical trials should be conducted to validate the potential effectiveness of this treatment.
- The FDA announced the launch of the [Coronavirus Treatment Acceleration Program \(CTAP\)](#) to expedite the development and evaluation of potentially safe and effective life-saving COVID-19 treatments including: antiviral drugs (e.g., *remdesivir*), host targets

(e.g., IL-6 receptor inhibitors), [convalescent plasma and hyperimmune globulin](#) and existing therapies such as chloroquine and hydroxychloroquine.

## Vaccines

- A study on the development of micro-needle array (MNA) delivered MERS-CoV vaccines and their pre-clinical immunogenicity. Findings indicate the [MNA delivered MERS-S1 subunit vaccines elicited strong and long-lasting antigen-specific antibody responses](#). There may be promising immunogenicity of MNA-delivered MERS-CoV vaccines.
- CSIRO, [Australia's national science agency, has commenced the first stage of testing potential vaccines for COVID-19](#). Australian researchers have started animal testing using ferrets for two potential COVID-19 vaccines made by Oxford University in Britain and Inovio Pharmaceuticals in the United States.
- [Murdoch Children's Research Institute in Australia, announced the BRACE multi-centre randomized controlled clinical trial](#) of the BCG vaccine against COVID-19. The aim is to validate whether BCG related boosting of innate immunity can lead to reduction in the prevalence and severity of COVID-19 symptoms in healthcare workers.

## Non-pharmaceutical interventions: social distancing, contact tracing

- A mathematical model based on country-specific age and social contact distributions suggests that [a 21 day lockdown maybe insufficient to contain the spread in India](#). The results suggests a trio of consecutive lockdowns; 21 days, 28 days and eight days - interrupted by two five-day periods of relaxation could slow the contagion. (Not peer-reviewed)
- A modelling study suggests that COVID-19's viral spread is too fast to be contained by manual contact tracing and that [digital contact tracing through a mobile-phone app could achieve sustainable epidemic suppression](#).
- A group of researchers have proposed a proof-of-concept [smartphone application that allows users to create "checkpoints" for contact tracing](#), check their risk level based on their past interactions, and anonymously self-report a positive status to their peer network.
- Current clinical trials on new drugs and vaccines for COVID-19 are distributed in high income countries (China, South Korea, Europe and North America). An [international research coalition](#) has been proposed to accelerate the research context and production of evidence on COVID-19 pre-exposure prevention, post-exposure prevention, and patient management relevant to LMICs.

## 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**:
  - More Member States have imposed lockdown (limiting of movement outside home) and curfew (restricting time of movement outside of home) measures this week including Angola, Botswana, Cabo Verde, Chad, Kenya, Niger, and Togo.
  - The lockdowns have ranged between 14-30 days, except for Sierra Leone, that had a 3 day lockdown which starting Sunday, 5 April.
- At least eight Member States have **extended their mitigation measure**;
  - As the number of confirmed cases rose to 1,251, Algeria will extend the imposition of its curfew and expand the scope to include more affected areas in Algeria.
  - Cameroon announced that current measures e.g., air traffic closure in effect to contain the spread of COVID-19 will be extended for another 15 days.
  - As the COVID-19 cases reached 656 on 31 March in Egypt, mitigation measures e.g., air traffic closure, curfew were extended until tentatively 15 April.
  - On April 4, Ghana announced that it would extend the closure of its borders for an additional two weeks beginning Sunday, 5 April.
  - Kenya extended the ban on international flights for another 30 days just a day before it imposed a partial lockdown in Nairobi, Kilifi, Kwale and Mombasa.
  - Liberia extended the closure of schools, which should have ended on 31 March, to an indefinite time. This was after three new cases were confirmed and thus bringing the total number of cases in the country to six.
  - Rwanda will extend its initial two week national lockdown which started on 21 March by an additional two weeks (new expected end date, 19 April), after the number of confirmed cases climbed from 17 to 82 in two weeks.
  - Senegal has extended for 30 days the state of emergency which was initially announced on 23 March. The state of emergency allows the authorities to regulate or prohibit the movement of goods and people and gatherings, temporarily close public places and meeting places, ban the movement of planes and boats, decide on entry and exit points, or place people under house arrest.
  - Tunisia will extend its lockdown by 2 weeks to 19 April. Further, the presidency will release 1,420 prisoners in an amnesty to alleviate crowding in prisons.
- In an effort **to limit transmission in prisons**, other African countries aside from Tunisia have implemented similar measures.
  - Libya and Morocco have both released over 450 and 5,000 prisoners, respectively. Whereas, Nigeria has resolved to release more than 52,226 awaiting trial inmates.

- Meanwhile, Member States are leveraging multiple approaches in enforcing mitigation measures:
  - Ethiopia has unveiled a suite of new digital health tools that are built on top of Demographic Health Information System (DHIS2) to enhance surveillance, monitoring and tracking of cases of the COVID-19 pandemic in the country
  - Ghana has deployed more than 37,000 police officers and soldiers around the country to enforce the partial lockdown.
  - Tunisia has deployed police robots to ensure that people are observing the lockdown
- Nigeria will mass produce Personal Protective Equipment (PPE) and would encourage and develop local manufacturing of medical equipment.
- South Africa continues to increase their testing through drive-thru testing and door to door testing. Testing for COVID-19 in South Africa will be massively increased in the next few weeks by using GeneXpert machines.
- Kenyan Airways has offering one-way complimentary tickets to Nairobi, for Kenyan citizens in urgent need. The country will also distribute masks at county level through organized groups.
- Member States and development banks have also **continued to increase the resources allocated to their COVID-19 response this week:**
  - Nigeria plans to create a 500 billion naira (\$1.39B) coronavirus fund to strengthen its healthcare infrastructure to tackle the virus.
  - Malawian officials have decided to take a 10% salary cut and redirect the money towards the fight against coronavirus
  - Zimbabwe had budgeted over \$600 million for vulnerable households under a cash transfer program for the next three months.
  - African Development Bank has approved \$2 million in emergency assistance for the World Health Organization (WHO) to reinforce its capacity to help African countries contain the COVID-19 pandemic and mitigate its impacts.
  - Member States get approval for financial support from The World Bank: Ethiopia (\$82M), Kenya (\$50M), DRC (\$47M), Senegal (\$20M), Gambia (\$10M) Sierra Leone (\$7.5M), Mauritania (\$5.2M), Djibouti (\$5M) and Sao Tome and Principe (\$2.5M).

Refer to Section E and F for the full summary of travel restrictions and social distancing measures implemented by African countries.

## Rest of World

- Similar to African countries, countries globally have implemented **stringent travel restrictions and social distancing measures.**
  - China has postponed its national university entrance exams.
  - Germany will extend its current public restrictions by two weeks until 19 April 2020 which will be re-assessed after Easter period.
  - Moscow will close all shops except for pharmacies and grocery stores. This measure, which also includes the closure of restaurants, cafes and bars.

- [Portugal](#) extends state of emergency and shuts all airports to commercial flights during Easter, only flights repatriating its citizen will be allowed entry.
- [Thailand](#) announced a nationwide curfew between 10pm and 4am. The curfew will have some exceptions, including for the transport of medical supplies, movement of people into quarantine or treatment, and travel of medical personnel.
- [Turkey](#) has shut borders of 31 cities for 15 days. [The country](#) also imposed a partial curfew for citizens under the age of 20.
- In addition, countries and technological institutions are **applying advanced technology and diagnostic methods** to curb the COVID-19 outbreak.
  - [British](#) engineers, aerospace and Formula One companies are hoping to produce at least 1,500 ventilators a week.
  - [India](#) has developed light, portable and easy to use toaster-sized small ventilator. Further, [the country](#) has launched coronavirus tracker app to check if you have been near a COVID-19 infected person or not.
  - [The US Centers for Disease Control \(CDC\)](#) has begun conducting tests to find out how many Americans have been infected with SARS-CoV-2. The test detects antibodies the immune system makes to fight the virus. Further in the US, [the Food and Drug Administration \(FDA\)](#) has approved the use of self-swab testing, while [Apple will produce one million face shields](#) a week for medical workers.
  - With the increased mitigation efforts to curb the outbreak, [Google](#) has contextualised how people's movements have been affected. [The tracker](#) shows how visits and the length of stay at different places have changed since the widespread introduction of physical distancing guidelines and lockdowns.
- World opinion seems to be [shifting to the frequent use of masks while in public](#). The US CDC reversed its long-standing position on face masks last week - telling Americans they should now wear one when they go outside.

## 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, embassy alerts and press search.



- 1 Some countries still allow cargo, freight and emergency transport into and out of the country; Some MSs will still allow citizens and residents to enter but all borders are essentially closed
- 2 Banning entry or exit of citizens or suspending visa issuance to specific countries

For further detailed information for each country, refer to full table [here](#).

## 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.



\*Source of information based on official reports, embassy alerts and press scanning

For further detailed information for each country, refer to the full table [here](#).



## G. Guidance and resources (Full list)

### Africa CDC guidelines and resources

Organization	Date published	Guidance or resource name
Africa CDC	9-Feb-2020	<a href="#">2019 Novel Coronavirus poster</a>
Africa CDC	9-Feb-2020	<a href="#">What you should know about the 2019 novel Coronavirus Disease factsheet</a>
Africa CDC	9-Feb-2020	<a href="#">2019 Novel Coronavirus Disease Outbreak: What Health Care Workers Should Know factsheet</a>
Africa CDC	5-Mar-2020	<a href="#">Guidance for Assessment, Monitoring, and Movement Restrictions of People at Risk for COVID-19 in Africa</a>
Africa CDC	5-Mar-2020	<a href="#">Africa Joint Continental Strategy for COVID-19 Outbreak</a>
Africa CDC	12-Mar-2020	<a href="#">Policy Recommendation for African Union Meetings and Travel During COVID-19 Outbreak</a>
Africa CDC	17-Mar-2020	<a href="#">Guidance on Community Social Distancing During COVID-19 Outbreak</a>
Africa CDC	27-Mar-2020	<a href="#">Hand hygiene can save your life factsheet</a>
Africa CDC	27-Mar-2020	<a href="#">Recommendations for Stepwise response to COVID-19</a>
Africa CDC	27-Mar-2020	<a href="#">Know Your Epidemic through COVID-19 Testing</a>
Africa CDC	27-Mar-2020	<a href="#">COVID-19 Emergency Numbers</a>

### WHO guidelines and resources

Organization	Date published	Guidance or resource name
<b>Country readiness</b>		
WHO	9-Jan-2020	<a href="#">National capacities review tool for a novel coronavirus</a>
WHO	22-Mar-2020	<a href="#">Critical preparedness, readiness and response actions for COVID-19</a>
WHO	4-Mar-2020	<a href="#">Operational Planning Guidelines and COVID-19 Partners Platform to support country preparedness and response</a>
<b>Surveillance and case definitions</b>		
WHO	20-Mar-2020	<a href="#">Global Surveillance for human infection with coronavirus disease (COVID-19)</a>
WHO	27-Feb-2020	<a href="#">Revised case reporting form for COVID-19 for confirmed cases and their outcome</a>
WHO	n/a	<a href="#">Emerging respiratory viruses, including 2019-nCoV: methods for detection, prevention, response and control</a>
WHO	n/a	<a href="#">Global COVID-19 Clinical Characterization Case Record Form and new data platform for anonymized COVID-19 clinical data</a>

Organization	Date published	Guidance or resource name
WHO	n/a	<a href="#">Case Reporting Form for COVID- WHO_19</a>
WHO	2-Apr-2020	<a href="#">Considerations in the investigation of cases and clusters of COVID-19</a>
<b>Laboratory guidance</b>		
WHO	2-Mar-2020	<a href="#">Laboratory testing for 2019 novel coronavirus (2019-nCoV) in suspected human cases</a>
WHO	1-Mar-2020	<a href="#">Guidance for laboratories shipping specimens to WHO reference laboratories that provide confirmatory testing for COVID-19 virus</a>
WHO	22-Mar-2020	<a href="#">Laboratory testing strategy recommendations for COVID-19</a>
WHO	31-Mar-2020	<a href="#">Guidance for laboratories shipping specimens to WHO reference laboratories that provide confirmatory testing for COVID-19 virus interim guidance (updated)</a>
<b>Patient management</b>		
WHO	13-Mar-2020	<a href="#">Clinical management of severe acute respiratory infection when novel coronavirus (nCoV) infection is suspected</a>
WHO	17-Mar-2020	<a href="#">Home care for patients with suspected novel coronavirus (nCoV) infection presenting with mild symptoms and management of contacts</a>
WHO	n/a	<a href="#">WHO Critical Care Severe Acute Respiratory Infection Training Short Course</a>
WHO	19-Mar-2020	<a href="#">The Rights, Roles and Responsibilities Of Health Workers, Including Key Considerations For Occupational Safety And Health</a>
WHO	19-Mar-2020	<a href="#">Mental health and psychosocial considerations during the COVID-19 outbreak</a>
WHO	20-Mar-2020	<a href="#">Maintaining a safe and adequate blood supply during the pandemic outbreak of coronavirus disease (COVID-19)</a>
WHO	19-Mar-2020	<a href="#">Operational considerations for case management of COVID-19 in health facility and community</a>
WHO	31-Mar-2020	<a href="#">Off-label use of medicines for COVID-19</a>
WHO	4-Apr-2020	<a href="#">Information Note on Tuberculosis and COVID-19</a>
<b>Infection prevention and control</b>		
WHO	24-Mar-2020	<a href="#">Infection Prevention and Control for the safe management of a dead body in the context of COVID-19</a>
WHO	21-Mar-2020	<a href="#">Infection Prevention and Control guidance for Long-Term Care Facilities in the context of COVID-19</a>
WHO	19-Mar-2020	<a href="#">Considerations for quarantine of individuals in the context of containment for coronavirus disease (COVID-19)</a>
WHO	19-Mar -2020	<a href="#">Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected</a>

Organization	Date published	Guidance or resource name
WHO	19-Mar-2020	<a href="#">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</a>
WHO	10-Feb-2020	<a href="#">Q&amp;A on infection prevention and control for health care workers caring for patients with suspected or confirmed 2019-nCoV</a>
WHO	11-Feb-2020	<a href="#">Key considerations for repatriation and quarantine of travellers in relation to the outbreak of novel coronavirus 2019-nCoV</a>
WHO	16-Feb-2020	<a href="#">Management of ill travellers at Points of Entry – international airports, seaports and ground crossings – in the context of COVID-19 outbreak</a>
WHO	18-Feb-2020	<a href="#">Surface sampling of coronavirus disease (COVID-19): A practical “how to” protocol for health care and public health professionals</a>
WHO	14-Feb-2020	<a href="#">Key planning recommendations for Mass Gatherings in the context of the current COVID-19 outbreak</a>
WHO	n/a	<a href="#">Online course for public health preparedness for mass gathering events</a>
WHO	n/a	<a href="#">Infection Prevention and Control (IPC) for Novel Coronavirus (COVID-19)</a>
WHO	19-Mar-2020	<a href="#">Rational use of personal protective equipment for coronavirus disease 2019 (COVID-19)</a>
WHO	1-Mar-2016	<a href="#">Handbook for the Management of Public Health Events in Air Transport</a>
WHO	1-Jan-2016	<a href="#">Handbook for management of public health events on board ships</a>
WHO	24-Jan-2011	<a href="#">Handbook for inspection of ships and issuance of ship sanitation certificates</a>
WHO	19-Mar-2020	<a href="#">Risk assessment and management of exposure of health care workers in the context of COVID-19: interim guidance (Checklist)</a>
WHO	19-Mar-2020	<a href="#">Coronavirus disease (COVID-19) outbreak: rights, roles and responsibilities of health workers, including key considerations for occupational safety and health: interim guidance</a>
WHO	20-Mar-2020	<a href="#">How to use WHO risk assessment and mitigation checklist for Mass Gatherings in the context of COVID-19: interim guidance</a>
WHO	29-Mar-2020	<a href="#">Modes of transmission of virus causing COVID-19: implications for IPC precaution recommendations</a>
WHO	1-Apr-2020	<a href="#">Recommendations to Member States to improve hand hygiene practices to help prevent the transmission of the COVID-19 virus Interim guidance</a>
<b>Early investigations</b>		

Organization	Date published	Guidance or resource name
WHO	25-Jan-2020	<a href="#">Protocol for assessment of potential risk factors for 2019-novel coronavirus (2019-nCoV) infection among health care workers in a health care setting</a>
WHO	25-Jan-2020	<a href="#">Household transmission investigation protocol for 2019-novel coronavirus (2019-nCoV) infection</a>
WHO	29-Jan-2020	<a href="#">The First Few X (FFX) Cases and contact investigation protocol for 2019-novel coronavirus (2019-nCoV) infection</a>
WHO	25-Jan-2020	<a href="#">Global 2019-nCoV Clinical Characterization Case Record Form</a>
WHO	16-Feb-2020	<a href="#">Coronavirus disease (COVID-19) technical guidance: Early investigations</a>
WHO	02-apr-2020	<a href="#">Considerations in the investigation of cases and clusters of COVID-19 (update)</a>
WHO	17-Mar-2020	<a href="#">Population-based age-stratified seroepidemiological investigation protocol for COVID-19 virus infection</a>
<b>Risk communication &amp; community engagement</b>		
WHO	16-Mar-2020	<a href="#">Risk Communication and Community Engagement (RCCE) Action Plan Guidance COVID-19 Preparedness and Response</a>
WHO	5-Mar-2020	<a href="#">The COVID-19 Risk Communication Package For Healthcare Facilities</a>
WHO	10-Mar-2020	<a href="#">Risk Communication guidance - COVID-19, older adults and people with underlying medical conditions</a>
WHO	10-Mar-2020	<a href="#">Guidance to protect children and support safe school operations</a>
<b>Disease commodity package</b>		
WHO	10-Jan-2020	<a href="#">Disease commodity package - Novel Coronavirus (nCoV)</a>
WHO	26-Mar-2020	<a href="#">Coronavirus disease (COVID-19) technical guidance: COVID-19 Critical Items</a>
<b>Reduction of transmission of animals to humans</b>		
WHO	n/a	<a href="#">WHO recommendations to reduce risk of transmission of emerging pathogens from animals to humans in live animal markets</a>
<b>Travel advice</b>		
WHO	29-Feb-2020	<a href="#">Updated WHO recommendations for international traffic in relation to COVID-19 outbreak</a>
<b>Supply of critical material</b>		
WHO	Weekly update	<a href="#">IVD Emergency Use Listing (EUL): Weekly Update</a>
WHO	n/a	<a href="#">Guide to Local Production: WHO-recommended Handrub Formulations</a>
<b>Others</b>		
WHO	3-Feb-2020	<a href="#">2019-nCoV Strategic Preparedness and Response Plan</a>

Organization	Date published	Guidance or resource name
IATA (in partnership with WHO)	n/a	<a href="#">Emergency Response Plan and Action Checklist (for air carriers)</a>
IATA (in partnership with WHO)	n/a	<a href="#">Air Transport &amp; Communicable Diseases Guidelines</a>
WHO	12-Feb-2020	<a href="#">2019 Novel Coronavirus: Global Research and Innovation Forum: Towards a Research Roadmap/report</a>
WHO	11-Feb-2020	<a href="#">2019 Novel Coronavirus: Global Research and Innovation Forum: Towards a Research Roadmap/report</a> - presentation
WHO	18-Feb-2020	<a href="#">COVID-19 Phase IIb/III Vaccine Trial Synopsis</a>
WHO	19-Feb-2020	<a href="#">Emerging respiratory viruses, including nCoV: methods for detection, prevention, response and control</a>
WHO	19-Feb-2020	<a href="#">ePROTECT Respiratory Infections (EN)</a>
WHO	24-Feb-2020	<a href="#">Operational considerations for managing COVID-19 cases/outbreak on board ships</a>
WHO	6-Mar-2020	<a href="#">Q&amp;A on COVID-19 vs. Influenza</a>
WHO	26-Mar-2020	<a href="#">Guiding principles for immunization activities during the COVID-19 pandemic</a>
WHO	25-Mar-2020	<a href="#">COVID-19: Operational guidance for maintaining essential health services during an outbreak</a>

## Other public health institutions guidance and resources

Organization	Date published	Guidance or resource name
<b>Country readiness</b>		
ECDC	17-Mar-2020	<a href="#">Guidance for health system contingency planning during widespread transmission of SARS-CoV-2 with high impact on healthcare services</a>
<b>Surveillance and case definitions</b>		
US CDC	2-Feb-2020	<a href="#">Interim Guidance for Healthcare Professionals</a>
US CDC	2-Feb-2020	<a href="#">Flowchart to Identify and Assess 2019 Novel Coronavirus</a>
US CDC	n/a	<a href="#">Check and Record Everyday Booklet – China</a>
US CDC	21-Mar-2020	<a href="#">Information for Health Departments on Reporting Cases of COVID-19</a>
US CDC	22-Mar-2020	<a href="#">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</a>

Organization	Date published	Guidance or resource name
ECDC	n/a	<a href="#">Case definition and European surveillance for human infection with novel coronavirus (2019-nCoV)</a>
<b>Laboratory guidance</b>		
US CDC	28-Jan-2020	<a href="#">US CDC panel primer and probes– U.S. CDC, USAV – U.S. CDC, USA</a>
US CDC	n/a	<a href="#">Information for Laboratories 2019-nCoV Requests for Diagnostic Panels and Virus</a>
US CDC	n/a	<a href="#">Real-Time RT-PCR Panel for Detection 2019-Novel Coronavirus</a>
US CDC	n/a	<a href="#">2019-Novel Coronavirus (2019-nCoV) Real-time rRT-PCR Panel Primers and Probes</a>
US CDC	17-Feb-2020	<a href="#">Interim Laboratory Biosafety Guidelines for Handling and Processing Specimens Associated with Coronavirus Disease 2019 (COVID-19)</a>
US CDC	21-Mar-2020	<a href="#">Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens from Persons for Coronavirus Disease 2019 (COVID-19)</a>
US CDC	21-Mar-2020	<a href="#">Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens from Persons Under Investigation (PUIs) for Coronavirus Disease 2019 (COVID-19)</a>
US CDC	25-Mar-2020	<a href="#">Collection and Submission of Postmortem Specimens from Deceased Persons with Known or Suspected COVID-19, March 2020 (Interim Guidance)</a>
US CDC	19-Feb-2020	<a href="#">Interim Guidance for Collection and Submission of Postmortem Specimens from Deceased Persons Under Investigation (PUI) for COVID-19, February 2020</a>
FDA	26-Mar-2020	<a href="#">Updated FDA Recommendations for SARS-CoV-2 Diagnostic Testing</a>
ECDC	13-Jan-2020	<a href="#">Diagnostic detection of Wuhan coronavirus 2019 by real-time RTPCR</a>
ECDC	1-Apr-2020	<a href="#">An overview of the rapid test situation for COVID-19 diagnosis in the EU/EEA</a>
China CDC	24-Jan-2020	<a href="#">China CDC Primers and probes for detection 2019-nCoV</a>
<b>Patient management</b>		
US CDC	n/a	<a href="#">Healthcare Professional Preparedness Checklist For Transport and Arrival of Patients Potentially Infected with 2019-nCoV</a>
US CDC	n/a	<a href="#">Hospital Preparedness Checklist for Suspected or Confirmed 2019-nCoV Patients</a>
US CDC	7-Mar-2020	<a href="#">Interim Clinical Guidance for Management of Patients with Confirmed Coronavirus Disease (COVID-19)</a>

Organization	Date published	Guidance or resource name
US CDC	31-Jan-2020	<a href="#">Interim Guidance for Implementing Home Care of People Not Requiring Hospitalization for 2019 Novel Coronavirus (2019-nCoV)</a>
US CDC	12-Feb-2020	<a href="#">Interim Guidance for Implementing Home Care of People Not Requiring Hospitalization for 2019 Novel Coronavirus (2019-nCoV)</a>
US CDC	n/a	<a href="#">Interim Guidance on Breastfeeding for a Mother Confirmed or Under Investigation For COVID-19</a>
US CDC	n/a	<a href="#">Frequently Asked Questions and Answers: Coronavirus Disease-2019 (COVID-19) and Children</a>
US CDC	n/a	<a href="#">Frequently Asked Questions and Answers: Coronavirus Disease 2019 (COVID-19) and Pregnancy</a>
US CDC	n/a	<a href="#">What Healthcare Personnel Should Know about Caring for Patients with Confirmed or Possible COVID-19 Infection</a>
US CDC	n/a	<a href="#">Interim Guidance for Public Health Professionals Managing People With COVID-19 in Home Care and Isolation Who Have Pets or Other Animals</a>
US CDC	n/a	<a href="#">Interim Guidance for Healthcare Facilities: Preparing for Community Transmission of COVID-19 in the United States</a>
US CDC	n/a	<a href="#">Preparing for COVID-19: Long-term Care Facilities, Nursing Homes</a>
US CDC	n/a	<a href="#">Steps Healthcare Facilities Can Take Now to Prepare for Coronavirus Disease 2019 (COVID-19)</a>
US CDC	n/a	<a href="#">Criteria for Return to Work for Healthcare Personnel with Confirmed or Suspected COVID-19 (Interim Guidance)</a>
US DHHS	20-Mar-2020	<a href="#">Interim Guidance for COVID-19 and Persons with HIV</a>
ECDC	30-Jan-2020	<a href="#">Advice to healthcare workers: management of patients with 2019-nCoV infection</a>
ECDC	10-Feb-2020	<a href="#">Guidelines for the use of non-pharmaceutical measures to delay and mitigate the impact of 2019-nCoV</a>
ECDC	10-Mar-2020	<a href="#">Novel coronavirus (SARS-CoV-2) - Discharge criteria for confirmed COVID-19 cases</a>
PHE	5-Mar-2020	<a href="#">Infographic on COVID-19 primary care in the UK</a>
Stop TB partnership	24-Mar-2020	<a href="#">Information note: digital health technologies, virtual care and community-based monitoring solutions for TB programs during the covid-19 pandemic and beyond</a>
<b>Infection prevention and control</b>		
US CDC	21-Feb-2020	<a href="#">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</a>
US CDC	n/a	<a href="#">Healthcare Supply of Personal Protective Equipment</a>
US CDC	22-Mar-2020	<a href="#">Interim US Guidance for Risk Assessment and Public Health Management of Persons with Potential Coronavirus Disease</a>

Organization	Date published	Guidance or resource name
		<a href="#">2019 (COVID-19) Exposures: Geographic Risk and Contacts of Laboratory-confirmed Cases</a>
US CDC	n/a	<a href="#">Interim Considerations for Infection Prevention and Control of Coronavirus Disease 2019 (COVID-19) in Inpatient Obstetric Healthcare Settings</a>
US CDC	11-Feb-2020	<a href="#">Interim Guidance for Discontinuation of In-Home Isolation for Patients with COVID-19</a>
US CDC	11-Feb-2020	<a href="#">Interim Guidance for Discontinuation of Transmission-Based Precautions and Disposition of Hospitalized Patients with COVID-19</a>
US CDC	25-Feb-2020	<a href="#">Interim Guidance for Preventing the Spread of Coronavirus Disease 2019 (COVID-19) in Homes and Residential Communities</a>
US CDC	n/a	<a href="#">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)</a>
US CDC	n/a	<a href="#">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</a>
US CDC	n/a	<a href="#">Healthcare Infection Prevention and Control FAQs for COVID-19</a>
US CDC	n/a	<a href="#">Strategies for Optimizing the Supply of N95 Respirators</a>
US CDC	28-Feb-2020	<a href="#">Checklist for Healthcare Facilities: Strategies for Optimizing the Supply of N95 Respirators during the COVID-19 Response</a>
US CDC	28-Feb-2020	<a href="#">Release of Stockpiled N95 Filtering Facepiece Respirators Beyond the Manufacturer-Designated Shelf Life: Considerations for the COVID-19 Response</a>
US CDC	n/a	<a href="#">Interim Additional Guidance for Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed COVID-19 in Outpatient Hemodialysis Facilities</a>
US CDC	28-Mar-2020	<a href="#">Cleaning And Disinfecting Your Home</a>
US CDC	26-Mar-2020	<a href="#">Infection Control</a>
US CDC	26-Mar-2020	<a href="#">Interim Infection Prevention and Control Guidance for Dental Settings During the COVID-19 Response</a>
US CDC	25-Mar-2020	<a href="#">Alternate Care Sites and Isolation Sites</a>
US CDC	3-Apr-2020	<a href="#">Strategies for Optimizing the Supply of N95 Respirators</a>
US CDC	4-Apr-2020	<a href="#">Personal Protective Equipment When Caring for COVID-19 Patients Factsheet</a>
US CDC	4-Apr-2020	<a href="#">Use of Cloth Face Coverings to Help Slow the Spread of COVID-19</a>



Organization	Date published	Guidance or resource name
ECDC	29-Jan-2020	<a href="#">Public health management of persons having had contact with novel coronavirus cases in the European Union</a>
ECDC	12-Mar-2020	<a href="#">Infection prevention and control for COVID-19 in healthcare settings</a>
ECDC	7-Feb-2020	<a href="#">Personal protective equipment (PPE) needs in healthcare settings for the care of patients with suspected or confirmed novel coronavirus (2019-nCoV)</a>
ECDC	18-Feb-2020	<a href="#">Interim guidance for environmental cleaning in non-healthcare facilities exposed to SARS-CoV-2</a>
ECDC	2-Mar-2020	<a href="#">Resource estimation for contact tracing, quarantine and monitoring activities for COVID-19 cases in the EU/EEA</a>
ECDC	28-Feb-2020	<a href="#">Guidance for wearing and removing personal protective equipment in healthcare settings for the care of patients with suspected or confirmed COVID-19</a>
ECDC	25-Feb-2020	<a href="#">Public health management of persons, including health care workers, having had contact with COVID-19 cases in the European Union</a>
ECDC	26-Feb-2020	<a href="#">Checklist for hospitals preparing for the reception and care of coronavirus 2019 (COVID-19) patients</a>
ECDC	23-Mar-2020	<a href="#">Considerations related to the safe handling of bodies of deceased persons with suspected or confirmed COVID-19</a>
ECDC	26-Mar-2020	<a href="#">Cloth masks and mask sterilisation as options in case of shortage of surgical masks and respirators</a>
ECDC	26-Mar-2020	<a href="#">Disinfection of environments in healthcare and non-healthcare settings potentially contaminated with SARS-CoV-2</a>
ECDC	31-Mar-2020	<a href="#">Infection prevention and control and preparedness for COVID-19 in healthcare settings - second update</a>
ECDC	31-Mar-2020	<a href="#">Infection prevention and control in the household management of people with suspected or confirmed coronavirus disease (COVID-19)</a>
PHE	2-Apr-2020	<a href="#">COVID-19 personal protective equipment (PPE)</a>
<b>Early investigations</b>		
US CDC	28-Feb-2020	<a href="#">Recommendations for Reporting, Testing, and Specimen Collection</a>
US CDC	3-Feb-2020	<a href="#">Patient Under Investigation form</a>
US CDC	4-Mar-2020	<a href="#">Evaluating and Reporting Patients Under Investigation (PUI)</a>
US CDC	2-Feb-2020	<a href="#">Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens from Patients Under Investigation (PUIs) for 2019 Novel Coronavirus (2019-nCoV)</a>
US CDC	n/a	<a href="#">Information for Health Departments on Reporting a Patient Under Investigation (PUI) for 2019-nCoV</a>
US CDC	n/a	<a href="#">Case Report Form for 2019 Novel Coronavirus</a>

Organization	Date published	Guidance or resource name
ECDC	30-Jan-2020	<a href="#">Algorithm for management of contacts of probable or confirmed 2019-nCoV cases</a>
<b>Risk communication &amp; community engagement</b>		
US CDC	24-Feb-2020	<a href="#">CDC in Action: Preparing Communities for Potential Spread of COVID-19</a>
US CDC	n/a	<a href="#">Interim Guidance: Get Your Household Ready for Coronavirus Disease 2019 (COVID-19)</a>
US CDC	n/a	<a href="#">Interim Guidance for Administrators of US Childcare Programs and K-12 Schools to Plan, Prepare, and Respond to Coronavirus Disease 2019 (COVID-19)</a>
US CDC	8-Mar-2020	<a href="#">Resources for Institutes of Higher Education</a>
US CDC	8-Mar-2020	<a href="#">COVID-19 and Cruise Ship Travel</a>
US CDC	8-Mar-2020	<a href="#">Environmental Cleaning and Disinfection Recommendations</a>
US CDC	8-Mar-2020	<a href="#">People at Risk for Serious Illness from COVID-19</a>
US CDC	8-Mar-2020	<a href="#">What law enforcement personnel need to know about coronavirus disease 2019 (COVID-19)</a>
US CDC	n/a	<a href="#">Resources for Community- and Faith-Based Leaders</a>
US CDC	n/a	<a href="#">Resources for Homeless Shelters</a>
US CDC	n/a	<a href="#">Protect Your Home</a>
US CDC	17-Mar-2020	<a href="#">Protect Your Family</a>
US CDC	n/a	<a href="#">How to Prepare for COVID-19</a>
US CDC	18-Mar-2020	<a href="#">How to Protect Yourself</a>
US CDC	21-Mar-2020	<a href="#">Older Adults</a>
US CDC	17-Mar-2020	<a href="#">People with Asthma and COVID-19</a>
US CDC	22-Mar-2020	<a href="#">Schools, Workplaces &amp; Community Locations</a>
US CDC	27-Mar-2020	<a href="#">Household Checklist</a>
US CDC	28-Mar-2020	<a href="#">Caring for Children</a>
US CDC	28-Mar-2020	<a href="#">Stress and Coping</a>
ECDC	13-Feb-2020	<a href="#">Guidance on community engagement for public health events caused by communicable disease threats in the EU/EEA</a>
ECDC	12-Mar-2020	<a href="#">Information on COVID-19 for specific groups: the elderly, patients with chronic diseases, people with immunocompromising condition and pregnant women</a>
ECDC	11-Mar-2020	<a href="#">Considerations relating to social distancing measures in response to the COVID-19 epidemic</a>
<b>Disease commodity package</b>		
US CDC	2-Feb-2020	<a href="#">Interim Laboratory Biosafety Guidelines for Handling and Processing Specimens Associated with 2019 Novel Coronavirus (2019-nCoV)</a>
<b>Travel advice</b>		

Organization	Date published	Guidance or resource name
US CDC	n/a	<a href="#">Travelers from China Arriving in the United States</a>
US CDC	n/a	<a href="#">Communication Resources for Travelers</a>
US CDC	22-Mar-2020	<a href="#">Coronavirus Disease 2019 Information for Travel</a>
US CDC	27-Mar-2020	<a href="#">Travel</a>
ECDC	30-Jan-2020	<a href="#">Advice for travellers: outbreak of a novel coronavirus 2019-nCoV</a>
<b>Supply of critical material</b>		
FDA	n/a	<a href="#">Emergency Use Authorizations (Ventilators, Personal Protective Equipment, In Vitro Diagnostic)</a>
Stop TB partnership	27-Mar-2020	<a href="#">Announcement: Xpert Express SARS-CoV-2 Cartridge now available from Stop TB Partnership's Global Drug Facility</a>
<b>Others</b>		
US CDC	13-Feb-2020	<a href="#">Interim Guidance for Airlines and Airline Crew: Coronavirus Disease 2019 (COVID-19)</a>
US CDC	4-Feb-2020	<a href="#">2019 Novel Coronavirus: Interim Health Guidance from the Federal Aviation Administration and the Centers for Disease Control and Prevention for Air Carriers and Crews</a>
US CDC	n/a	<a href="#">Preventing Spread of Disease on Commercial Aircraft: Guidance for Cabin Crew</a>
US CDC	n/a	<a href="#">Interim Guidance for Businesses and Employers to Plan and Respond to 2019 Novel Coronavirus (2019-nCoV), February 2020</a>
US CDC	n/a	<a href="#">Interim Guidance for Emergency Medical Services (EMS) Systems and 911 Public Safety Answering Points (PSAPs) for 2019-nCoV in the United States</a>
US CDC	18-Feb-2020	<a href="#">Interim Guidance for Ships on Managing Suspected Coronavirus Disease 2019</a>
ECDC	23-Mar-2020	<a href="#">Coronavirus disease 2019 (COVID-19) and supply of substances of human origin in the EU/EEA</a>
Harvard Health Publishing	n/a	<a href="#">COVID-19 Health literacy project: Fact Sheets in 35 languages</a>
<b>Social distancing</b>		
ECDC	18-Mar-2020	<a href="#">Video on COVID-19: Why social distancing is important</a>
ECDC	23-Mar-2020	<a href="#">Considerations relating to social distancing measures in response to COVID-19 – second update</a>