CORONAVIRUS — JUNE 2020

COVID-19 PLAYBOOK

TARGET AUDIENCES

- Vital Strategies staff and partners
- Country, subnational and city governments responding to COVID-19 pandemic

PURPOSE

- Provide quick, practical access to key principles and high-yield tools to implement COVID-19 public health response activities.
- Describe the adaptive response approach which is the practice of dynamically adapting epidemic response activities from containment, mitigation and suppression as the epidemic progresses along the epidemic curve.

Visit PreventEpidemics.org for more.
Prevent epidemics is a project of Resolve to Save Lives, an initiative of Vital Strategies.
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INTRODUCTION TO VITAL STRATEGIES

Vital Strategies is a leading global public health organization and a trusted partner of governments and civil society organizations around the world. We help governments strengthen their public health systems to contend with the most important and difficult health challenges. We bring the best of public health thinking to design solutions that can scale rapidly and improve lives.

The Prevent Epidemics team from Resolve to Save Lives (RTSL), an initiative of Vital Strategies, is committed to making the world safer from epidemics. As COVID-19 spreads around the world, the Prevent Epidemics and Vital Strategies teams serve as timely experts and honest brokers in supporting governments and civil society organizations around the world in responding to the COVID-19 pandemic (*2-pager on our COVID-19 response*).

INTRODUCTION TO THE PLAYBOOK

The playbook is meant to be a useful resource to help country, subnational and city governments decision-makers manage and adapt their public health response to COVID-19.

The Adaptive Response approach provides a framework for dynamically adapting the essential activities of the response as the epidemic progresses along the epidemic curve. The Adaptive Response graphic visualizes the epidemic curve, response phases and essential activities.

The phases of the response include:

- **Preparedness**
- **Containment**, or preventing the spread of disease in early stages of transmission through measures such as early detection and isolation of cases, and contact tracing and quarantine.
- **Mitigation**, or minimizing the epidemic impact, delaying the outbreak peak and reducing the peak number of cases in order to reduce strain on the healthcare system. Achieved largely through public health social measures and specific treatments and vaccines, if available.
- **Suppression**, defined as reducing and maintaining low levels of disease transmission through intermittent loosening and tightening of public health social measures, detection and isolation of cases, and contact tracing and quarantine.
- **Recovery**

The essential activities are organized into the following categories.

- Coordinated response
- Box the virus in (Disease control)
- Case management
- Physical distancing
- Essential health services
- Essential societal services
In each category, response activities are mapped to the response phases. Some activities are maintained throughout all phases, while others are only relevant to specific phases of the outbreak.

The playbook must be adapted to the local context. All guidance should be developed in collaboration with international and national health organizations and national Ministries of Health. Cities and subnational governments and national governments will need to adapt their response to meet the needs of their jurisdiction.

The playbook is interactive. The adaptive response graphic provides links to the section of the playbook that highlights key principles and high-yield tools in the implementation of those activities.

Although resource settings are multiple and varied, high-yield tools were dichotomized coarsely between having a high versus low resource requirement for implementation.

The World Health Organization provides global public health leadership by issuing detailed expert advice to countries responding to the COVID-19 pandemic. The principles and tools included in the playbook reflect WHO guidance and aim to provide a practical framework to rapidly focus on priority activities outlined by WHO. Tools and resources will be updated regularly as new guidance on COVID-19 is released by WHO. The playbook also includes tools from other international public health organizations (e.g. Africa, European and US CDC).

This playbook is a “living”, dynamic document. Global knowledge around COVID-19 is evolving rapidly. Feedback and suggestions can be sent to covid19-eiu@vitalstrategies.org.

GUIDING PRINCIPLES FOR THE PLAYBOOK

Data-driven
Use data to drive decisions and share data with the public

Human rights
Respect, protect, and promote human rights of all communities and all sectors of society

Community engagement
Engage communities, learning from them and enlisting them to lead and implement programs

Local adaptation
Adapt general approaches to the national, subnational, and local contexts to maximize public health benefit and minimize economic and social harms
Effective and coordinated response

Establish a functional, adequately funded and interconnected incident management system

Clearly communicate evidence-based information through the multiple means

Daily briefings from a trusted source

Box the virus in (disease control)

Implement individual (hand/cough/illness) and environmental hygiene

Test widely

Isolate infected people

Trace and quarantine contacts

Case management

Protect healthcare workers

Manage COVID-19 cases

Provide social, economic, and emotional support for patients

Facilitate the development of diagnostics, therapeutics and vaccines

Physical distancing

Make informed decisions based on potential impact, surveys and objective assessments

Implement and assess adherence to physical distancing and hygiene measures

Monitor for violence, social disruption and other negative impacts of physical distancing

Assess and implement as indicated quarantine of travelers and restrictions on travel

Essential health services

Maintain vaccination, maternal and child health, behavioral health and care of chronic conditions

Essential societal services

Ensure security and access to basic provisions, power, water, internet, media, and financial services

Pharmaceutical interventions

Treatments

Vaccines
Managing a COVID-19 response: The Essential Checklist

KEY APPROACHES

- Use data to drive decisions and share data with the public
- Respect, protect, and promote human rights of all communities and all sectors of society
- Adapt general approaches to the national, subnational, and local contexts to maximize public health benefit and minimize economic and social harms
- Engage communities, learning from them and enlisting them to lead and implement programs

Effectively manage a coordinated response

☐ Establish a functional, adequately funded and interconnected incident management structure
☐ Clearly communicate evidence-based information through multiple means
☐ Daily briefings from a trusted source on case counts, countermeasures, recommendations and outlook

Box the virus in to reduce transmission

☐ Implement individual (hand/cough/illness) and environmental hygiene
☐ Test widely and maintain timely and accurate surveillance
  ☐ Report cases and deaths within 24 hours
  ☐ Utilize syndromic surveillance (e.g. influenza-like illnesses (ILI), severe acute respiratory infections (SARI) as early signals
  ☐ Ensure and publicly report rapid turnaround times of laboratory tests
  ☐ Test suspected cases and clusters rapidly after identification
☐ Isolate all infected people in safe and suitable places
☐ Identify and trace contacts quickly and as completely as possible, expanding the circle when transmission is found

☐ Quarantine contacts and address the social, medical, and practical needs of individuals so they can remain in quarantine without hardship

Safely manage COVID-19 cases

☐ Equip and protect healthcare workers with appropriate controls and prevent healthcare worker infections
☐ Provide for supplemental oxygen and other essential care to the greatest extent feasible to support seriously ill patients, including ventilator support as feasible
☐ Provide social, economic, and emotional support for patients
☐ Facilitate the development of diagnostics, therapeutics and vaccines

Turn on and off physical distancing measures when appropriate

☐ Make informed decisions based on potential impact, surveys and objective assessments
☐ Implement and assess adherence to physical distancing (e.g., cancellation of gatherings) and hand/cough/illness hygiene measures
☐ Monitor for violence, social disruption and other negative impacts of physical distancing
☐ Assess and implement as indicated quarantine of travelers and restrictions on travel

Maintain non-COVID-19 essential health services

☐ Maintain vaccination, maternal and child health, behavioral health and care of chronic conditions

Maintain essential societal services

☐ Ensure security and access to basic provisions, power, water, internet, media and financial services
### Key principles and high-yield tools

#### 1. EFFECTIVELY MANAGE A COORDINATED RESPONSE

<table>
<thead>
<tr>
<th>Establish a functional, adequately funded and interconnected incident management system</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Key principles</strong></td>
</tr>
<tr>
<td>- Effective emergency management systems include empowered incident managers, a well-organized, cohesive and accountable structure, adequate funding and is aligned with political leaders.</td>
</tr>
<tr>
<td>- The national emergency management systems must be coordinated with those of the states and corresponding sub-national structures so guidance and policies can be rapidly implemented.</td>
</tr>
<tr>
<td>- <a href="#">US FEMA Incident Command System Resource Center</a>, with job aids, trainings and other tools</td>
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</table>

<table>
<thead>
<tr>
<th>Clearly communicate evidence-based information through multiple means</th>
</tr>
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<tbody>
<tr>
<td><strong>Key principles</strong></td>
</tr>
<tr>
<td>- Providing prompt, accurate, and coordinated information to the public, that is tailored to the local context and to the stage of the epidemic in that location is essential.</td>
</tr>
<tr>
<td>- Explaining the rationale for public health and social measures (PHSMs) and managing misinformation and rumors promotes social cohesion to support PHSM adherence.</td>
</tr>
<tr>
<td>- Engaging community leaders, including faith leaders as well as community networks, in a two-way dialogue is essential to build trust, and monitor concerns and barriers to implementing PHSMs.</td>
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<table>
<thead>
<tr>
<th>Daily briefings from a trusted source on case counts, countermeasures, recommendations and outlook</th>
</tr>
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<tbody>
<tr>
<td><strong>Key principles</strong></td>
</tr>
<tr>
<td>- Science is rapidly evolving around COVID-19. The better we understand how the virus spreads and how to stop it, the better we respond.</td>
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</tbody>
</table>
2. BOX THE VIRUS IN TO REDUCE TRANSMISSION

### Implement individual and environmental hygiene

<table>
<thead>
<tr>
<th>Key principles</th>
<th>High-yield tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Basic respiratory and hand hygiene should be encouraged throughout the outbreak and at baseline (wash hands, cover cough, stay home if ill).</td>
<td>• WHO basic protective measures against the new coronavirus <em>(FR, SP)</em></td>
</tr>
<tr>
<td>• Environmental surfaces potentially infected with SARS-CoV-2 should be adequately disinfected.</td>
<td>• ECDC Disinfection of environments</td>
</tr>
</tbody>
</table>

### Test widely and maintain timely and accurate surveillance

<table>
<thead>
<tr>
<th>Key principles</th>
<th>High-yield tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report cases and deaths within 24 hours</td>
<td>Higher resource requirement</td>
</tr>
<tr>
<td>• Timely and accurate surveillance of COVID-19 infections and deaths will allow to identify and isolate people promptly.</td>
<td>• Testing prioritization in the US</td>
</tr>
<tr>
<td>• In the early phases of the outbreak, clinical systems and providers should be alerted and patients with severe acute respiratory infections should be tested for COVID-19. Active case finding allows to rapidly detect, isolate cases and limit transmission.</td>
<td>• WHO guidance on surveillance and case definitions</td>
</tr>
<tr>
<td>Utilize syndromic surveillance (e.g. SARI, ILI) as early signals</td>
<td>Lower resource requirement</td>
</tr>
<tr>
<td>• Public health authorities should leverage existing severe acute respiratory illness (SARI) and influenza-like illness (ILI) disease surveillance, hospital-based morbidity and mortality surveillance, and other syndromic surveillance systems to identify suspected COVID-19 disease activity.</td>
<td>• RTSL Data insight: Syndromic surveillance as an early signal for COVID-19 in New York City</td>
</tr>
<tr>
<td></td>
<td>• Africa CDC Protocol for Enhanced SARI/ILI Surveillance for COVID-19 in Africa <em>(EN, FR, SP, PO available)</em></td>
</tr>
<tr>
<td></td>
<td>• RTSL guide for analysis of respiratory syndromic surveillance data*</td>
</tr>
</tbody>
</table>
- All-cause mortality, pneumonia and influenza mortality and COVID-19-confirmed mortality should be compared to baseline level to monitor the impact of the outbreak.

**Ensure and publicly report rapid turnaround times of laboratory tests**

- Rapid, widely available and accurate COVID-19 laboratory tests allow effective case detection which is needed for isolation of cases and quarantine of contacts.

**Test suspected cases and clusters rapidly after identification**

- During the **containment** phase:
  - Testing extensively guides isolation strategies and allows effective contact tracing.

- During the **mitigation** phase:
  - Testing guides treatment and protection of vulnerable groups including health care workers, especially when there are outbreaks in hospitals, nursing homes, homeless shelters, and prisons.
  - In health care facilities treating severely ill patients, testing identifies those with COVID-19 in order to improve infection control, know when it is safe to discharge patients, and identify participants in clinical trials.
  - There is little benefit, and some potential harm, to testing individuals with mild or no symptoms. In the process of getting tested, these people will take up the time, protective equipment, and lab materials of health facilities. If people are not infected when they travel to and get care, they may get infected in the process of getting tested.

- During the **suppression** phase:
  - Testing extensively allows to effectively resume isolation of cases and quarantine of contacts. All symptomatic contacts should be tested, and in some cases those without symptoms as well.

**Isolate all infected people in safe and suitable places**

<table>
<thead>
<tr>
<th>Key principles</th>
<th>High-yield tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>- The severity of illness and available resources will guide where cases can be isolated (home, hospital or other facilities).</td>
<td>- Science review on Fangcang shelter hospitals to care for mild and moderate cases as alternative to home isolation &amp; quarantine (FR, SP)</td>
</tr>
<tr>
<td>- Additional health facilities to care for mildly and moderately ill patients may be useful when health system is overwhelmed or home isolation pose significant threat for onward transmission.</td>
<td>- WHO manual to set up and manage a Severe Acute Respiratory Infection treatment center and screening facility</td>
</tr>
</tbody>
</table>

- Rapid mortality surveillance technical package*
- RTSL How to estimate excess Mortality from COVID-19 (including calculator)

- WHO lab testing strategy guidance
- Africa CDC Know Your Epidemic through COVID-19 Testing
3. SAFELY MANAGE COVID-19 CASES

**Equip and protect healthcare workers with appropriate controls and prevent health care worker infections**

<table>
<thead>
<tr>
<th>Key principles</th>
<th>High-yield tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Contact tracing should start within hours of case identification.</td>
<td>- RTSL Contact tracing playbook*</td>
</tr>
<tr>
<td>- This is particularly important in the preparedness, containment and suppression phases. It often becomes impractical in the mitigation phase but it is a time for active preparation and resuming contact tracing activities in the suppression phase.</td>
<td>- ECDC contact tracing guidance</td>
</tr>
<tr>
<td>- This is an enormous undertaking, and both trained people and practical digital tools will be essential.</td>
<td>- RTSL “Box it in” briefing document (FR, SP)</td>
</tr>
<tr>
<td>- Health care workers should be protected with policies, training, and personal protective equipment (PPE).</td>
<td>- Contact tracing staffing calculator</td>
</tr>
<tr>
<td>- Healthcare worker infection, nosocomial infections, PPE stocks and projected needs should be monitored closely.</td>
<td></td>
</tr>
<tr>
<td>- Infection control measures apply to the safe management of dead bodies.</td>
<td>- WHO interim guidance on Infection and Control for the safe management of a dead body in the context of COVID-19</td>
</tr>
<tr>
<td></td>
<td>- ECDC guidance on safe handling of bodies</td>
</tr>
</tbody>
</table>

**Quarantine contacts and address the social, medical, and practical needs of individuals so they can remain in quarantine without hardship**

<table>
<thead>
<tr>
<th>Key principles</th>
<th>High-yield tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Contacts, once identified, should self-quarantine for 14 days.</td>
<td>- ECDC guidance on isolation</td>
</tr>
<tr>
<td>- Adequate support should be provided to ensure that contacts can remain quarantined without hardship</td>
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</table>
### Facilitate the development of diagnostics, therapeutics and vaccines

<table>
<thead>
<tr>
<th>Key principles</th>
<th>High-yield tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The development of diagnostics, therapeutic and vaccine requires coordination of industry efforts.</td>
<td>• For latest update see <a href="https://www.cepi.net">CEPI</a> and <a href="https://www.who.int">WHO Global Research on COVID-19</a></td>
</tr>
<tr>
<td>• Preparation for anticipated therapeutics and vaccines requires planning on prioritized use and mass distribution</td>
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</tbody>
</table>

### Provide for supplemental oxygen and other essential care to the greatest extent feasible to support seriously ill patients, including ventilator support as feasible

<table>
<thead>
<tr>
<th>Key principles</th>
<th>High-yield tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Health care systems (staff, supplies, facilities) should safely surge their capacity to meet the critical care needs of current and projected cases.</td>
<td>• <a href="https://www.who.int">WHO COVID-19 Essential Supplies Forecasting Tool</a></td>
</tr>
<tr>
<td>• Healthcare systems should grow their capacity during the outbreak to increase their resilience in the suppression phase.</td>
<td>• <a href="https://www.who.int">DRAFT COVID ICU and Death Calculator</a></td>
</tr>
<tr>
<td>• Care should be provided to all suspected and confirmed patients according to disease severity and acute care needs. People with milder illness can be managed at home. Patients can be cohorted in dedicated COVID-19 units and facilities.</td>
<td>• <a href="https://www.who.int">SEIR model epidemic calculator</a></td>
</tr>
<tr>
<td>• If the healthcare system capacity is outstretched, resources should be fairly and ethically distributed using crisis standards of care.</td>
<td>• <a href="https://www.who.int">RTSL COVID-19 prevalence calculator</a></td>
</tr>
</tbody>
</table>

### Provide social, economic, and emotional support for patients

<table>
<thead>
<tr>
<th>Key principles</th>
<th>High-yield tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Patients need support throughout the course of their illness and recovery</td>
<td>• <a href="https://www.cdc.gov">US CDC Stress and Coping in COVID-19</a></td>
</tr>
</tbody>
</table>

### COVID-19 projection tools from the Center for Mathematical modelling of infectious diseases (CMMID) and the Institute for Health Metrics and Evaluation (IHME) and other forecast models.
### 4. TURN ON AND OFF PHYSICAL DISTANCING MEASURES WHEN APPROPRIATE

<table>
<thead>
<tr>
<th>Key principles</th>
<th>Higher resource setting</th>
<th>Lower resource setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make informed decisions based on potential impact, surveys and objective assessments</td>
<td>• RTSL Using PHSMs to reduce COVID-19 transmission (FR)</td>
<td>• RTSL Using communication support implementation of PHSMs (FR, SP, PO)</td>
</tr>
<tr>
<td>• Community physical distancing measures can have large socio-economic consequences and should be carefully deployed especially in lower resource settings.</td>
<td>• RTSL Using data to find the balance between public health outcomes and social and economic impact*</td>
<td></td>
</tr>
<tr>
<td>• Communities must be engaged, and information should be obtained from the public through surveys to assess the adherence and acceptability of the measures. The findings should be used to improve the effectiveness of the measures and reduce disruption.</td>
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</tr>
<tr>
<td>• If testing is not widely available and cases are suspected to be undetected, it may be prudent to implement community physical distancing early in the course of the outbreak.</td>
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</tr>
<tr>
<td>Implement and assess adherence to physical distancing (e.g., cancellation of gatherings) and hand/cough/illness hygiene measures</td>
<td>• Low Cost Hygiene and Social Distancing Interventions</td>
<td>• RTSL Implementation of non-pharmaceutical interventions, evidence base and application to the African context (FR, PO)</td>
</tr>
<tr>
<td>• Low-cost hygiene, environmental and physical distancing measures for vulnerable groups can, where applicable, be implemented throughout the outbreak.</td>
<td>• RTSL When to Loosen and Tighten physical distancing according to levels of virus transmission, healthcare preparedness and public health capacity</td>
<td>• RTSL Adapting Public Health and Social Measures for Resource-Constrained Settings (FR, SP)</td>
</tr>
<tr>
<td>• Physical distancing measures should be implemented at the smallest geographical unit that is feasible in terms of managing the dynamics of the outbreak.</td>
<td>• Facebook, Google, and Apple Mobility data</td>
<td></td>
</tr>
<tr>
<td>• Once there is community transmission (confirmed with testing or suspected in the absence of widely available testing), community physical distancing measures should be implemented. Those include travel restrictions, cancellation of mass gatherings, as well as work and school closures.</td>
<td></td>
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</tr>
<tr>
<td>• Simultaneously implementing strict measures early (aka “stacking interventions”) will help flatten the curve of the outbreak and reduce the burden on healthcare system and mortality.</td>
<td></td>
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</tr>
<tr>
<td>• Objective triggers based on the epidemiology, healthcare preparedness, public health capacity, public acceptability and economic impact should be monitored to identify when those measures should be tightened or loosened.</td>
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</tr>
<tr>
<td>• In the suppression phase, a key concept is that we need to reopen the faucet gradually, not allow the floodgates to reopen. As the faucet is gradually re-opened, extensive testing and alert clinical systems will aim to identify cases and clusters promptly and intervene extensively with case isolation and contact tracing without overwhelming the healthcare system. Community physical distancing measures may need to be tighten again if the healthcare system becomes overwhelmed with an influx of patients.</td>
<td></td>
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</tr>
<tr>
<td>• Mobility data in aggregate form can be used to assess the adherence to physical distancing measures.</td>
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</tr>
</tbody>
</table>
Monitor for violence, social disruption and other negative impacts of physical distancing

- RTSL Legal and Ethical Considerations for PHSMs
- Impact of public health social measure dashboard (in development)

Assess and implement as indicated quarantine of travelers and restrictions on travel

- RTSL Briefing legal note on the quarantine of International Travelers (FR)

5. MAINTAIN NON-COVID-19 ESSENTIAL HEALTH SERVICES

<table>
<thead>
<tr>
<th>Maintain vaccination, maternal and child health, behavioral health and care of chronic conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Key principles</strong></td>
</tr>
<tr>
<td>• In large outbreaks, people continue to need essential health services (vaccination, maternal and child health, behavioral health and care of chronic conditions) and may die from non-COVID causes if those are not maintained.</td>
</tr>
<tr>
<td>• Telemedicine and other virtual tools can help maintain essential non-COVID services during the outbreak.</td>
</tr>
<tr>
<td><strong>High-yield tools</strong></td>
</tr>
<tr>
<td>• RTSL Coronavirus and Chronic Diseases (FR, SP)</td>
</tr>
<tr>
<td>• RTSL Primary health care redesign to protect chronic disease patients</td>
</tr>
<tr>
<td>• RTSL Leveraging technology to improve health care during the COVID-19 pandemic and beyond</td>
</tr>
</tbody>
</table>
### 6. MAINTAIN ESSENTIAL SOCIETAL SERVICES

Ensure security and access to basic provisions, power, water, internet, media and financial services

<table>
<thead>
<tr>
<th>Key principles</th>
<th>High-yield tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ensuring supply chains of critical items including food supply is essential.</td>
<td>• <a href="#">International Food Policy Research Institute</a></td>
</tr>
<tr>
<td>• Maintain essential services including water, power, water, internet, media and financial services.</td>
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</tr>
<tr>
<td>• It is important to train and equip security forces to support COVID-19 response safely and ethically to avoid acts of violence and social disruption.</td>
<td></td>
</tr>
<tr>
<td>• Special considerations should be made for vulnerable populations.</td>
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</tr>
</tbody>
</table>

**Human rights:**

- [OHCHR on emergency measures and human rights](#)
- [Joint statement on social protection from Interagency Cooperation board](#)

**Children:**

- [IASC COVID-19 control in schools (FR, SP)](#)
- [Children Protection during COVID (FR, SP)](#)

**Drug users:**

- [Safer drug use during the COVID-19 Outbreak (FR, SP PO)](#)
- [Syringe services and harm reduction provider operations during COVID-19 outbreak](#)
Other resources

CHECKLISTS OF RESPONSE ACTIVITIES BY OUTBREAK PHASE

- WHO Critical preparedness, readiness and response actions for COVID-19
- Africa CDC Recommendations for stepwise response to COVID-19

RESOURCES FOR CITIES

- Partnership for healthy City website

GLOBAL REFERENCE FOR TECHNICAL GUIDANCE

- WHO Country & Technical Guidance – Coronavirus disease (COVID-19)

EPIDEMIOLOGIC REFERENCES

- WHO COVID-19 global dashboard
- John Hopkins CSSE Global Case Map
- WHO daily situation report

REGIONAL DASHBOARDS

- AFRO
- Africa CDC
- EMRO
- EURO
- PAHO
- SEARO
- WPRO

SCIENTIFIC REFERENCES

- MMWR
- NEJM coronavirus
- JAMA coronavirus
- Lancet coronavirus
- MedRxiv preprint
Glossary

**COVID-19.** The name of the disease caused by the novel coronavirus, SARS-CoV-2, and is short for “Coronavirus Disease 2019.” (Source: WHO)

**CASE FATALITY RATE (CFR).** An estimate of the risk of mortality from the disease. The CFR is calculated by dividing the number of deaths caused by a disease by the actual number of diagnosed cases of that disease in a given time period. The CFR is time and location-dependent, and many different factors can influence the CFR, such as speed of diagnosis of cases, health system capacity, age and other demographic characteristics, among others. For COVID-19, estimates of the CFR have varied; in China, CFR estimates by province have ranged from <1% to 5.8%. The Infection Fatality Rate (IFR) is a related metric that is calculated by dividing the number of deaths caused by a disease by the estimated number of infections whether they are diagnosed or not. Sources: CDC/Lipsitch et. al./WHO. Note: The CFR should be interpreted cautiously as the denominator of COVID-19 cases in many locations are an underestimate.

**CLOSE CONTACT.** A person who has been within 6 feet of a person infected with the virus for a prolonged period of time or has had direct contact with the infected person’s secretions. (Source: CDC)

**CONTACT TRACING.** The process of identifying, assessing, and managing people who have been exposed to a contagious disease to prevent onward transmission. (Source: WHO)

**CONTAINMENT.** Preventing the spread of disease in early stages of transmission through measures such as early detection and isolation of cases, and contact tracing and quarantine. (Source: WHO)

**CORDON SANITAIRE.** A measure preventing anyone from leaving a defined geographic area, such as a community, region, or country infected by a disease to stop the spread of the disease (Wikipedia)

**CORONAVIRUS.** A family of viruses that cause illness ranging from the common cold to more severe diseases, such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV). The novel coronavirus recently discovered has been named SARS-CoV-2 and it causes COVID-19. (Source: WHO)

**DRIVE THROUGH TESTING.** Individuals remain in their vehicles, and medical staff in protective gear come to administer the swab test and the swabs are sent to a laboratory for testing.

**DROPLET TRANSMISSION SPREAD.** A mode of transmission for a contagious disease that involves relatively large, short-range (less than 6 feet) respiratory droplets produced by sneezing, coughing, or talking. (Source: CDC)

**ELECTIVE SURGERIES.** Procedures that are considered non-urgent and non-essential. During periods of community transmission, CDC is recommending postponing elective procedures, surgeries, and non-urgent outpatient visits. (Source: CDC)
EPIDEMIC. An increase, often sudden, in the number of cases of a disease above what is normally expected in that population in that area. (Source: CDC)

ESSENTIAL ACTIVITIES (LIST VARIES BY COUNTRY)
- Tasks essential to main health and safety, such as obtaining medicine or seeing a doctor;
- Getting necessary services or supplies for themselves or their family or household members, such as getting food and supplies, pet food, and getting supplies necessary for staying at home;
- Engaging in outdoor activity, such as walking, hiking or running provided that you maintain at least six feet (1.5m) of social/physical distancing;
- Performing work providing essential services at an Essential Business or Essential Government function;
- Caring for a family member in another household;
- Caring for elderly, minors, dependents, person with disabilities, or other vulnerable persons

ESSENTIAL BUSINESSES. Healthcare operations and pharmacies, government, infrastructure, operation of public transportation and utilities; grocery stores, banks, garbage collection, businesses that ship or deliver (list varies by countries).

FLATTENING THE CURVE. Slowing a virus’ spread to reduce the peak number of cases and related demands on hospitals and infrastructure (Source: CDC) The objective is to delay the epidemic, reduce the peak and “buy time” to build health capacity.

FOMITE. An inanimate object that can be the vehicle for transmission of an infectious agent (e.g., bedding, towels, or surgical instruments). There is evidence that coronavirus spreads via fomites although, this is a less common route of transmission. (Sources: CDC)

ISOLATION. Separating sick people with a contagious disease from those who are not sick. (Source: CDC)

MITIGATION. Minimizing the epidemic impact, delaying the outbreak peak and reducing the peak number of cases in order to reduce strain on the healthcare system. Achieved largely through public health and social measures and specific treatments and vaccines, if available.

N95 RESPIRATOR (FACE MASK). Personal protective equipment that is used to protect the wearer from airborne particles and from liquid contaminating the face (Source: https://www.thoracic.org/patients/patient-resources/resources/disposable-respirators.pdf)

NON-PHARMACEUTICAL INTERVENTIONS NPIs. (updated term: public health and social measures). Actions, apart from getting vaccinated and taking medicine, that people and communities can take to help slow the spread of pandemic illnesses. NPIs are also known as community mitigation strategies. NPIs are among the best ways of controlling pandemic flu when vaccines are not yet available (CDC).

PANDEMIC. An epidemic that has spread over several countries/continents, usually affecting a large number of people. (Source: CDC)

PUBLIC HEALTH AND SOCIAL MEASURES. Actions, apart from getting vaccinated and taking medicine, that people and communities can take
to help slow the spread of pandemic illnesses. NPIs are also known as community mitigation strategies or non-pharmaceutical interventions. NPIs are among the best ways of controlling pandemic flu when vaccines are not yet available (CDC).

**QUARANTINE.** Separating well persons, who have been exposed to the infection, from other well persons during the incubation period of an illness. (Source: CDC)

**RESTRICTION ON MOVEMENT & TRAVEL ADVISORY/WARNING.** Strategies ranging from safeguarding the health of residents traveling internationally to detecting and responding to communicable diseases related to travel and imported pathogens.

**SARS-COV-2.** The name of the novel coronavirus that causes COVID-19 disease. SARS stands for Severe Acute Respiratory Syndrome. Prior to this name, it was called 2019-nCoV.

**SOCIAL DISTANCING (PHYSICAL DISTANCING).** Measures taken to reduce person-to-person contact in a given community, with a goal to stop or slow down the spread of a contagious disease. Measures can include working from home, closing offices and schools, cancelling events, and avoiding public transportation. (Source: CIDRAP)

**STAY AT HOME OR SHELTER IN PLACE.** All residents must remain at their place of residence, except for essential activities (buying food and taking care of the health and safety of anyone in their household, including pets), essential businesses (health care; delivering food, mail, picking up garbage; and maintaining electrical systems etc, and essential government functions.

**SUPPRESSION.** Reducing and maintaining low levels of disease transmission through intermittent loosening and tightening of public health social measures, detection and isolation of cases, and contact tracing and quarantine.

**VIRAL SHEDDING.** The period of time after the virus has replicated in the host and is being emitted.