Current Situation (As of 20 May, 18H Geneva Time)

- Updates from last 24 hours
  - 65,637 new confirmed cases from 138 countries/territories/areas:
    - The 10 countries reporting the highest number of cases in past 24 hours: Brazil (13140), Russian Federation (8764), India (5611), Saudi Arabia (2691), Peru (2660), Mexico (2414), The United Kingdom (2412), Iran (Islamic Republic of) (2346), Pakistan (1932), Bangladesh (1617)
  - 2,865 new deaths from 81 countries/territories/areas
    - The 10 countries reporting the highest number of deaths in past 24 hours: Brazil (674), The United Kingdom (545), Italy (162), Mexico (155), Peru (141), India (140), Russian Federation (135), Ecuador (103), Germany (83), Spain (69)

- Globally, between 31 Dec 2019 - 20 May 2020
  - 4,801,202 cases from 215 countries/territories/areas and 1 international conveyance
  - 318,935 death from 182 countries/territories/areas and 1 international conveyance
  - The 10 countries with the highest number of cumulative cases: United States of America (1477459), Russian Federation (308705), Brazil (254220), The United Kingdom (248822), Spain (232037), Italy (226699), Germany (176007), Turkey (151615), France (140959), Iran (Islamic Republic of) (126949)
Countries, areas or territories with COVID-19 cases reported in the last day
(Per 1,000,000 population, from 19 May 2020, 10:00 to 20 May 2020, 10:00 (CEST))


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

Map Production: WHO Health Emergencies Programme

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Countries, areas or territories with COVID-19 deaths reported in the last day
(Per 1,000,000 population, from 19 May 2020, 10:00 to 20 May 2020, 10:00 (CEST))

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


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

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.
Global epidemic curve by region (cases reported to WHO as of 20 May 18H)

Number of new confirmed COVID-19 cases by date reported to WHO and region

- Africa
- Americas
- Eastern Mediterranean
- Europe
- South-East Asia
- Western Pacific
- Other*

*Other: 1 international conveyance
Surveillance strategies for COVID-19 human infection

Interim guidance
10 May 2020

Background

COVID-19 has spread rapidly around the world, affecting every community directly or indirectly. Stringent public health and social measures (PHSM) have been put in place by all countries to slow the spread of COVID-19. These include limitations on domestic and international travel; stay-at-home orders; closing of schools, shops, and religious centers; among other measures. As public health authorities consider the lifting some of these measures, it is critical that robust surveillance is in place or put in place to control the spread of COVID-19 and guide ongoing implementation of control measures.

The aim of surveillance for COVID-19 is to limit the spread of disease, enable public health authorities to manage the risk of COVID-19, and thereby enable economic and social activity to resume to the extent possible. Surveillance is also necessary to monitor the longer-term trends of COVID-19 transmission and the changes in the virus.

This guidance should be used in conjunction with WHO’s guidance on the use of clinical surveillance and laboratory testing to monitor the impact of COVID-19, and thereby enable economic and social activity to resume to the extent possible.

The objectives of COVID-19 surveillance include:

- enable rapid detection, isolation, testing, and management of suspected cases
- identify and follow up contacts
- guide the implementation of control measures
- detect and contain outbreaks among vulnerable populations
- evaluate the impact of the pandemic on health-care systems and society
- monitor longer term epidemiologic trends and evolution of COVID-19 virus
- understand the co-circulation of COVID-19 virus, influenza and other respiratory viruses

Case definitions for surveillance of COVID-19

See the most up-to-date WHO COVID-19 case definitions.

Aims and Objectives of Surveillance for COVID-19

Aims of COVID-19 Surveillance

• Limit spread of disease
• Manage risk of COVID-19
• Enable economic and social activity to resume to the extent possible

Objectives of COVID-10 Surveillance

• Rapid detection, isolation, and management of suspected cases
• Identify and follow-up contacts
• Identify outbreaks
• Guide control measures
• Monitor longer-term trends
• Understand co-circulation of influenza and other respiratory pathogens
Considerations for Surveillance for COVID-19

- New cases and clusters of COVID-19 are detected rapidly before widespread transmission occurs.
- Robust comprehensive national surveillance
  - Geographically comprehensive
  - All populations included
- Adaptation and reinforcement of existing surveillance
- Scale-up of additional surveillance capacities
- A high level of surveillance should be maintained, even in areas with no cases
### Type of Surveillance and Surveillance Sites for COVID-19

<table>
<thead>
<tr>
<th>Type of Surveillance</th>
<th>Individuals in the Community</th>
<th>Primary Care Sites (non-sentinel ILI/SARI)</th>
<th>Hospitals (non-sentinel ILI/SARI)</th>
<th>Sentinel ILI/SARI Site</th>
<th>Residential Facilities and Vulnerable Groups</th>
<th>Vital Statistics Offices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate Case notification system</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Contact Tracing System</td>
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<tr>
<td>Sentinel virus surveillance</td>
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<tr>
<td>Sentinel case surveillance</td>
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<tr>
<td>Cluster investigations</td>
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<td>Special settings</td>
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<td>Mortality</td>
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<td>X</td>
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<td>X</td>
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</table>
Contact Tracing for COVID-19

Contact tracing in the context of COVID-19
Interim guidance
10 May 2020

Background

Coronavirus disease 2019 (COVID-19) is caused by the SARS-CoV-2 virus, and spreads from person-to-person through droplet and contact transmission. To control the spread of COVID-19, interventions need to break the chains of human-to-human transmission, ensuring that the number of new cases generated by each confirmed case is maintained below 1 (effective reproduction number < 1). As part of a comprehensive strategy, case identification, isolation, testing and care, and contact tracing and quarantine, are critical activities to reduce transmission and control the epidemic.¹

Contact tracing is the process of identifying, assessing, and managing people who have been exposed to a disease to prevent onward transmission. When systematically applied, contact tracing will break the chains of transmission of an infectious disease and is thus an essential public health tool for controlling infectious disease outbreaks. Contact tracing for COVID-19 requires identifying persons who may have been exposed to COVID-19 and following them up daily for 14 days from the last point of exposure.

This document provides guidance on how to establish contact tracing capacity for the control of COVID-19. It builds upon WHO considerations in the investigation of cases and clusters of COVID-19.²

Critical elements of the implementation of contact tracing are community engagement and public support; careful planning and consideration of local contexts, communities, and cultures; a workforce of trained contact tracers and supervisors; logistics support to contact tracing teams; and a system to collate, compile, and analyse data in real-time.

For contact tracing to be effective, countries must have adequate capacity to test suspect cases in a timely manner. Where this is not possible, testing¹ and contact tracing strategies may instead focus on specific high-risk settings with vulnerable individuals, such as hospitals, care homes, or other closed settings (e.g. dormitories).

Because individuals may transmit COVID-19 while pre-symptomatic or asymptomatic, this guidance also emphasizes the importance of quarantining contacts to further reduce the potential for secondary transmission.⁴

Purpose of Contact Tracing for COVID-19

Why do contact tracing?
• Break the chain of human-to-human transmission
• Reduce the number of new cases generated by each case to below 1 (Rt<1)

What is contact tracing?
• For a case of COVID-19, identify persons who may have been exposed from 2-days before illness onset
• Quarantine contacts, where possible
• Follow-up contacts daily for 14 days
• Isolate and test contacts with suspected COVID-19
Implementing Contact Tracing for COVID-19

How should contract tracing be implemented?
• Contact tracing should be used as part of a comprehensive control strategy
• Even when contact tracing is not 100%, it is effective at reducing transmission (e.g. https://www.mobs-lab.org/uploads/6/7/8/7/6787877/tracing_main_may4.pdf)
• For large outbreaks, contact tracing continues to be important for vulnerable populations and in areas with low case numbers

Further Elements to Consider
• Engaging Communities
• Establishing and training a contact tracing workforce
• Data management systems
• Apps and technology aids
Criteria to Adjust Public Health and Social Measures

Considerations in adjusting public health and social measures in the context of COVID-19

Interim guidance
16 April 2020

Background

Across the globe, countries have implemented a number of control measures to comprehensively prepare for and respond to COVID-19. The overarching goal of the WHO global

Public health criteria to adjust public health and social measures in the context of COVID-19

Annex to Considerations in adjusting public health and social measures in the context of COVID-19
12 May 2020

Background

In response to COVID-19, countries around the globe have implemented several public health and social measures (PHSM), health care system preparedness, and economic and social stabilization measures. These


Public Health Criteria for Adjusting Measures

Three public health questions

1. Epidemiology – is the epidemic controlled?
2. Health System – is the health system able to cope?
3. Public Health Surveillance – is the public health surveillance system able to detect and manage cases and contacts?

Using the criteria

• At least weekly review of the criteria, at subnational administrative level where feasible
• Criteria not prescriptive, thresholds are indicative, adapted by Member States
Public health criteria to adjust PHSM: Epidemiological Criteria

- Has the epidemic been controlled
- Key measure: \( \text{R}_t < 1 \) for ≥2 weeks
- Supplemented by qualitative assessment all/some of the following indicators ...

<table>
<thead>
<tr>
<th>Epidemiological Criteria*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decline of at least 50% over a 3-week period since the latest peak and continuous decline in the observed incidence of confirmed and probable cases</td>
</tr>
<tr>
<td>Less than 5% of samples positive for COVID-19, at least for the last 2 weeks, assuming that surveillance for suspected cases is comprehensive</td>
</tr>
<tr>
<td>Less than 5% of samples positive for COVID-19, at least for the last 2 weeks, among influenza-like-illness (ILI) samples tested at sentinel surveillance sites</td>
</tr>
<tr>
<td>Less than 5% of samples positive for COVID-19, at least for the last 2 weeks, among severe-acute-respiratory-illness (SARI) samples tested at sentinel surveillance sites</td>
</tr>
<tr>
<td>At least 80% of cases are from contact lists and can be linked to known clusters</td>
</tr>
<tr>
<td>Decline in the number of deaths among confirmed and probable cases at least for the last 3 weeks</td>
</tr>
<tr>
<td>Continuous decline in the number of hospitalization and ICU admissions of confirmed and probable cases at least for the last 2 weeks</td>
</tr>
<tr>
<td>Decline in the age-stratified excess mortality due to pneumonia</td>
</tr>
</tbody>
</table>
Public health criteria to adjust PHSM: Health System Criteria

- Can the health system can cope with new hospitalizations without becoming overwhelmed?
- Key measure: No. of new cases requiring hospitalization < estimated maximum hospital and ICU bed capacity of the health system
- In the absence of this info, a qualitative assessment of ...

<table>
<thead>
<tr>
<th>Health System Criteria</th>
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<tbody>
<tr>
<td>All COVID-19 patients can be managed according to national standard</td>
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<tr>
<td>All other patients with a severe non-COVID-19 condition can be managed according to national standard</td>
</tr>
<tr>
<td>There is no increase in intra-hospital mortality due to non-COVID-19 conditions</td>
</tr>
<tr>
<td>The health system can absorb or can expand to cope with at least a 20% increase in COVID-19 case load</td>
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<tr>
<td>An Infection Prevention and Control (IPC) focal point is available in all health facilities (1 full-time trained IPC focal point per 250 beds) and at district level</td>
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<tr>
<td>All health facilities have screening for COVID-19</td>
</tr>
<tr>
<td>All acute health facilities have a mechanism for isolating people with suspected COVID-19</td>
</tr>
</tbody>
</table>
Can the public health surveillance can identify most cases and their contacts?

<table>
<thead>
<tr>
<th>Public Health Surveillance Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Surveillance system</strong></td>
</tr>
<tr>
<td>New cases can be identified, reported, and data included in epidemiological analysis within 24 hours</td>
</tr>
<tr>
<td>Immediate reporting of probable and confirmed cases of COVID-19 is mandated within national notifiable disease with requirements</td>
</tr>
<tr>
<td>Enhanced surveillance is implemented in closed residential settings and for vulnerable groups</td>
</tr>
<tr>
<td>Mortality surveillance is conducted for COVID-19 related deaths in hospitals and in the community</td>
</tr>
<tr>
<td>The total number of laboratory tests conducted for COVID-19 virus is reported each day</td>
</tr>
<tr>
<td><strong>Case investigation</strong></td>
</tr>
<tr>
<td>Public health rapid response teams are functional at all appropriate administrative levels</td>
</tr>
<tr>
<td>90% of suspect cases are isolated and confirmed/released within 48 hours of symptom onset</td>
</tr>
<tr>
<td><strong>Contact tracing</strong></td>
</tr>
<tr>
<td>At least 80% of new cases have their close contacts traced and in quarantine within 72 hours of case confirmation</td>
</tr>
<tr>
<td>At least 80% of contacts of new cases are monitored for 14 days</td>
</tr>
<tr>
<td>Information and data management systems are in place to manage contact tracing and other related data</td>
</tr>
</tbody>
</table>
COVID-19: Brief Technical Update

Member State Briefing

21 May 2020
With COVID-19, WHO’s mission resonates more than ever before.
Global epidemic curve by region (cases reported to WHO as of 20 May 18H)

Number of new confirmed COVID-19 cases by date reported to WHO and region

- **30 Jan**: WHO declares public health emergency of international concern
- **11 Mar**: WHO describes COVID-19 as a Pandemic
- **5 Jan**: WHO issues first EIS/DON
- **10-11 Jan**: WHO issues first package of technical guidance: surveillance, lab, clinical management, IPC, readiness checklist, disease commodity package
- **1 Jan**: WHO activates IMST

**Deaths**
- Africa
- Americas
- Eastern Mediterranean
- Europe
- South-East Asia
- Western Pacific
- Other*

*Other: 1 international conveyance
Health first: WHO leading the strategic global response

Global plan released 4 days after declaring a PHEIC

**Catalyzed national action plans**

- WHO operational guidance/support
  - 147 country offices, 6 regions mobilized
- 40% more national plans in 9 weeks
  - 114 → 160 countries (10/3 – 13/5)

**Triggered global multisectoral action**

- WHO-led UN Crisis Management Team
  - 23 UN entities, 9 areas of work
- UN Socio-Economic Framework
  - Health services at the core of recovery

**Mobilized financial resources**

- WHO mobilized $580 million in 3 months
  - 85% for country implementation & supplies

As of 13 May 2020
WHO’s normative function: leading policy & technical guidance

Steering policy through:
- HQ-Regional leadership: 73 meetings
- 45 Global Health Leaders: 11 meetings
- STAG-IH: 18 meetings

Convening experts for guidance development:
- 96 technical documents published by WHO including 55 guidance documents

- Surveillance
- Clinical management
- Laboratory
- Supply & logistics
- Modeling
- Infection prevention & control

> 400 experts
> 100 calls

As of 12 May 2020
WHO’s strong public voice based on science & evidence

WHO’s new way to translate science & manage infodemics

- Whole of society COVID-19 engagement: individuals, communities, countries, health, travel & trade, employers & workers, food & agriculture, faith-based organizations, youth organizations

- Promoting health by tracking infodemics and driving practical guidance on public health measures

- >130 risk communication products: 12 videos/animations, 25 mythbusters, 39 Infographics, 8 Q&As, living FAQs etc

- Amplifying: 60 webinars, >8500 participants, 128 countries

As of 13 May 2020
Tailored diagnostic solutions for COVID-19 and beyond

- Diagnostics supply chain consortium: 4 million tests purchased and shipped for 1st month of scale-up
- EQA jointly with influenza in progress in 260 labs
- Additional EQA for COVID-PCR (1800 labs applied for participation)
- Need for unprecedented scale-up of trained human resources
Country impact: WHO’s support to scale up COVID-19 testing capacity in the African region

- 16-fold gain in February alone (2 → 32 countries)
- By 14 April, 44 (94%) countries in region have PCR-testing capacity
  - 4 countries received their 1st ever PCR machines
- WHO role: technical support, missions, virtual trainings, equipment/supplies, facilitating test kits
- WHO’s regional cost for scale up: $1.5 million
  - supplies
  - equipment
  - reagents and test kits
  - technical support including mentoring by & twinning with regional reference labs
WHO COVID-19 reference laboratory network as of 29 April 2020 (n=26)

Data Source: World Health Organization,
Map Production: WHO Health Emergencies Programme
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## Guidance documents: Laboratory

### Published Guidance
- Laboratory guidance document for COVID-19
- Laboratory testing strategy recommendations for COVID-19
- Biosafety guidance document for COVID-19 (updated 13 May)
- Laboratory Assessment Tool for laboratories implementing COVID-19 testing
- SOP for initial distributed assay (more in pipeline aligned with procurement)
- Guidance for laboratories shipping specimens to WHO reference laboratories that provide confirmatory testing for COVID-19 virus

### In the pipeline
- Maximizing impact of genetic sequencing on public health for COVID-19

### Scientific brief
- Advice on the use of point-of-care immunodiagnostic tests for COVID-19
Natural history in humans and infectious dose

• Proportion of sub-clinical infections unknown and critical for understanding possible transmission and potential immunity

• Among reported cases
  – 40% have self-limited mainly respiratory illness probably of ~14 days duration
  – 40% have pneumonia, not requiring respiratory support
  – 15% have severe illness requiring medical care +/- hospitalization
  – 5% need intensive care +/- ventilation

• Infectious dose has not been determined
High nasopharyngeal titres of SARS-CoV-2 within the first 24 h of the illness onset, which gradually decrease following recovery from clinical illness, many patients no longer have detectable viral RNA in upper respiratory specimens, but there are case reports of prolonged viral shedding.

No clear correlation has been described between length of illness and duration of post-recovery shedding of detectable viral RNA in upper respiratory specimens.
Infectious period

Replication-competent virus has not been successfully cultured more than 9 days after onset of illness

Estimated likelihood of recovering replication-competent virus approaches zero by 10 days

(Wölfel 2020, Arons 2020)

Attempts to culture virus from upper respiratory specimens largely unsuccessful when viral burden is in low but detectable ranges (i.e., Ct values higher than 33-35)

Infectious virus has not been cultured from urine or reliably cultured from feces;
- minimal risk of transmitting infection and can be sufficiently mitigated by good hand hygiene

(Midgely 2020, Wölfel 2020)
COVID-19 Routes of transmission

• **Droplet transmission**
  – COVID-19 virus is transmitted by droplets during close (within 1 m), unprotected contact
  – Preliminary viral shedding data suggests highest shedding at or around the time of symptom onset

• **Transmission through fomites**
  – The virus has been detected on surfaces in the patient environment
  – Possible for people to be infected after touching contaminated surfaces and touching eyes, nose or mouth

• **Aerosol transmission**
  – Aerosol generating procedures produce aerosols that can remain in the air for longer periods of time, compared to larger droplets and be transmitted to others over distances greater than 1m

• **Fecal-oral transmission**
  – RNA has been detected in the stool
  – The roles of fecal-oral transmission remains uncertain, but likely not major driver of transmission
Definitions: Symptomatic, pre-symptomatic & asymptomatic transmission

• **Symptomatic transmission**
  – Defined as: transmission of the virus from a person with symptoms compatible with COVID-19
  – evidence from COVID-19 affected countries indicates that symptomatic transmission is the major driver of transmission
  – supported by viral shedding data

• **Pre-symptomatic transmission**
  – Defined as: transmission of the virus from a person without symptoms at the time of transmission, but who goes on to develop symptoms compatible with COVID-19
  – evidence that those infected with COVID-19 virus may shed virus 1-2 days before onset of symptoms
  – has been documented in the context of contact tracing, but is unlikely to be major driver of transmission

• **Asymptomatic transmission**
  – Defined as: transmission of the virus from a person who has no symptoms at the time of testing and who does not develop any signs/symptoms
  – Few reports of cases who are truly asymptomatic, reports of some with “mild” or “very mild” symptoms
  – Direct information about the occurrence and extent of possible asymptomatic transmission come from contact tracing efforts, household transmission studies, seroepidemiologic investigations; estimates/inferences from mathematical modelling

• **Estimates of asymptomatic/pre-symptomatic transmission range 0-6.4% but models suggest % much higher (12.6-50-60%)**
COVID-19: Risk factors for infection for HCW

- Health care worker infections have been reported in a large number of countries
- **Risk factors for infection**
  - Infection outside of health care facilities, from family members
  - Within health care facilities
    - Shortage of PPE for frontline workers
    - Inadequate training for IPC of respiratory pathogens of frontline workers
    - Improper use of PPE precautions early in outbreak
      - Late recognition of COVID-19
      - In wards without contact/droplet precautions (e.g., geriatric, long term care wards)
      - Inexperience with infectious diseases (e.g., dentists, ophthalmologists)
    - Suboptimal/unqualified hand washing
    - Long-term exposure to large scale infected patients
      - Long shifts, inadequate rest periods
      - Surge in patients, wards not specified for ID
    - Psychological distress
IPC online training options

• https://openwho.org/channels/covid-19

Standard precautions: Hand hygiene
Self-paced English
Most health care-associated infections are preventable through good hand hygiene – cleaning hands at the right times and in the right way. The WHO Guidelines on hand hygiene in health care support hand hygiene promotion and improvement in health care facilities worldwide and are complemented by the WHO multimodal hand hygiene improvement strategy, the guide to implementation, and implementation toolkit, which contain many ready-to-use practical tools. This module has been prepared to help summarize the WHO guidelines on hand hygiene, associated tools and ideas for effective implementation.

Show course details  Enroll me for this course

How to put on and remove personal protective equipment (PPE)
Self-paced English
This is a guide for healthcare workers involved in patient care activities in a healthcare setting. It aims to show the type of personal protective equipment or PPE needed to correctly protect oneself. Based on the current available evidence, the WHO recommended PPE for the care of COVID patients are CONTACT and DROPLET precautions, with the exception of aerosol producing procedures, which require CONTACT and AIRBORNE (hence, a respirator mask such as N95, FFP2, FFP3). Keeping in mind, PPE is part of a larger infection prevention and control bundle of measures and should be implemented as part of a multimodal strategy of management of COVID-19 patients. Only clinical staff who are trained and competent in the use of PPE should be allowed to enter the patient’s room.

Show course details  Enroll me for this course

Infection Prevention and Control (IPC) for Novel Coronavirus (COVID-19)
Self-paced English
This course provides information on what facilities should be doing to be prepared to respond to a case of an emerging respiratory virus such as the novel coronavirus, how to identify a case once it occurs, and how to properly implement IPC measures to ensure there is no further transmission to HCW or to other patients and others in the healthcare facility.
This training is intended for healthcare workers and public health professionals, as it is focused on infection prevention and control.

Show course details  Enroll me for this course
WHO is providing a global platform for COVID-19 serology

1. WHO is working with global network of laboratories and FIND on the development, evaluation and validation of serologic assays for SARS-CoV-2

2. Within WHO’s Solidarity II global collaboration, WHO is working partners to facilitate accelerate the development the global sharing of well characterized panels of sera to enable standardization of serologic assays worldwide, and to develop standardized serologic assays for collaborators to use

3. Adapted early epidemiological investigations protocols for COVID-19 to better understand these characteristics and how they may be used to inform public health measures
   - These Unity studies are underway in more than 50 countries to implement these studies:
     • First few X case and contacts
     • Health worker seroepidemiologic investigation of risk factors for infection
     • Household transmission study
     • Age-stratified population based serologic study
Country impact: building research capacity through WHO’s Unity Study Protocols

To collectively better understand COVID-19 transmission dynamics, severity and sero-prevalence

- Standard protocols developed by WHO’s expert groups
- Powerful way to aggregate & analyze data across different settings globally, using WHO designed tools including Go.Data
- Unity and equity together:
  50 countries implementing the protocols, more in pipeline
  58% of countries participating are low- and middle-income

As of 12 May 2020
Early results (based on pre-pub results; subject to change)

- >90 seroepidemiologic studies are underway
- Available studies include peer-reviewed publications (n=2), pre-print publications, and publications released by government institutions (n>15)
- WHO has not reviewed methodologies of all ongoing studies in full
  - Studies have used the ELISA Euroimmun assay, rapid immunodiagnostic tests or an in-house assays
  - Few studies report validation of the assay used or, when validation is reported, is often reported based on small convenience samples of recovered patients and pre-epidemic sera
  - Populations/samples under study include: blood donors, households, outpatient samples, clinical chemistry samples, hospital visitors, first responders, pregnant women and industry workers
- Most study results* suggest <10% of populations under study have evidence of SARS-CoV-2 antibodies, with up to 20% in higher transmission intensity areas and/or among frontline workers

*from publications, pre-prints and press releases
Health systems facing COVID-19 outbreak

• Huge stress posed by the large number of patients with COVID-19
• Lack of supplies and equipment
• Burden on health care workers
• Disruption of essential health services

Dilemma: balance the demands of responding to COVID-19 with strategic planning and coordinated action to maintain quality essential health services
WHO technical guidance: Essential Health Services

- Provides guidance on “a set of targeted immediate actions that countries should consider at national, regional, and local level to reorganize and maintain access to essential quality health services for all.”

- Countries will need to make difficult decisions to balance the demands of responding directly to COVID-19, while simultaneously engaging in strategic planning and coordinated action to maintain essential health service delivery, mitigating the risk of system collapse.

- **Update**: Organized around nine areas...

Operational guidance for maintaining essential health services during an outbreak — UPDATED to include 9 areas

1. Establish simplified purpose-designed governance and coordination mechanisms to complement response protocols
2. Identify context-relevant essential services
3. Optimize service delivery settings and platforms
4. Establish effective patient flow (screening, triage, and targeted referral) at all levels
5. Rapidly re-distribute health workforce capacity, including by re-assignment & task sharing
6. Identify mechanisms to maintain availability of essential medications, equipment & supplies
7. Reduce financial barriers for essential services
8. Strengthen communication and use information technologies to support appropriate use of essential services
9. Reinforce health information systems
Real-time training for COVID-19 on OpenWHO

<table>
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<tr>
<th>Country response</th>
<th>Go.Data tool</th>
<th>Facility design</th>
<th>Waste mgmt</th>
<th>Protective equipment</th>
<th>Infection prevention and control</th>
<th>Clinical care</th>
<th>eProtect respiratory</th>
<th>Introduction to COVID-19</th>
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<td>444 118 enrolments</td>
<td>89 993 enrolments</td>
<td>578 604 enrolments</td>
<td>111 157 enrolments</td>
<td>100 443 enrolments</td>
<td>26 675 enrolments</td>
<td>53 502 enrolments</td>
<td>167 427 enrolments</td>
<td>446 637 enrolments</td>
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2 156 187 total enrolments
Critical preparedness, readiness and response actions for COVID-19

Intensity of actions based on transmission scenario:

1. Countries with no cases (No Cases)
2. Countries with 1 or more cases, imported or locally detected (Sporadic Cases)
3. Countries experiencing cases clusters in time, geographic location, or common exposure (Clusters of cases)
4. Countries experiencing larger outbreaks of local transmission (Community transmission)

Countries could experience one or more of these scenarios at the sub-national level and should adjust and tailor their approach to the local context.
Considerations to minimize risk of resurgence in COVID-19 cases

- COVID-19 transmission is controlled
- Sufficient public health workforce and health system capacities are in place
- Outbreak risks in high-vulnerability settings are minimized
- Preventive measures are established in workplaces
- Manage the risk of exporting and importing cases from communities with high risks of transmission
- Communities are fully engaged

• Annexes for Schools, Workplaces, Mass Gatherings, Indicators
WHO coordinating the COVID-19 global research roadmap

WHA 2016 supported a global strategy for rapidly activating R&D activities during epidemics. A global good.

For COVID-19:

- **Roadmap charted in February**
  - WHO convened world scientists, joint effort to accelerate research

- **>700 clinical trials underway**
  - WHO tracking systematically, relying on independent panels to advise on recommendations

- **Solidarity 1 clinical Rx trial**
  - Launched by WHO & partners >100 countries, >2300 patients enrolled

- **Access to Tools Accelerator**
  - Convenes partners to work on tools with speed, scale & equity at heart

As of 8 May 2020
COVID-19 therapeutics and vaccines

**Therapeutics**

- There are currently no licensed therapeutics for COVID-19
  - Many clinical trials currently underway

- “Solidarity” is an international clinical trial to help find an effective treatment for COVID-19, launched by WHO and partners
  - International clinical trial to help find an effective treatment for COVID-19, launched by WHO and partners
  - Compares four treatment options
  - Assesses their relative effectiveness against COVID-19
  - >3000 patients enrolled from 17 countries*

**Vaccines**

- Harnessing a broad global coalition to develop and evaluate candidate vaccines as quickly and safely as possible
  - >120 vaccines are in development

- Access to COVID-19 Tools Accelerator: ACT Accelerator (launched Friday 24 April)
  - Brings together the combined power of several organizations to work with speed and scale
  - Shared commitment is to ensure all people have access to all the tools to defeat COVID-19
  - Development and production of save and effective vaccine; Production at scale; Equitable access to vaccine — global engagement

*as of 18 May

Support for using evidence-based recommendations to manage COVID-19

- Goal firmly remains suppression of transmission and saving lives
- Implement evidence-based recommendations and guidance
  - Agile, adaptive according to transmission intensity and need
- Strengthening health systems now
  - Develop workforce to identify, isolate, test, treat all cases and trace and quarantine every contact
  - Ensure resources to protect health workforce
- Advocate and adopt a whole of society, whole of government approach to ensure public health and social measures to reduce transmission and how they are adjusted as necessary over the course of the pandemic
  - Intensifying and easing
- Ensure lessons learned are documented and integrated into preparedness, response and recovery to reduce transmission and how they are adjusted across the course of the pandemic
- Document and share good practices/challenges with WHO and others
WHO COVID-19 resources

• Be well informed & stay informed with the latest information

• WHO Coronavirus website
  – Strategic preparedness and response plan
  – Daily situation reports and global dashboard
  – Country and technical guidance
  – FAQs Myth busters
  – Research and Development
  – EpiWin: WHO information network for epidemics
  – Advice for individuals
  – Training for frontline workers: OpenWHO.org
  – News, speeches, press conferences. Mission reports
  – And more...

http://www.who.int/emergencies/diseases/novel-coronavirus-2019