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

World Health Organization

Background

In response to COVID-19, countries around the globe have implemented several public health and social measures (PHSM), including large scale measures such as movement restrictions, closure of schools and businesses, geographical area quarantine, and international travel restrictions. As the local epidemiology of the disease changes, countries will adjust (loosen/reinstate) these measures accordingly. On 16 April 2020, WHO published interim guidance that provides advice on adjusting PHSM, while managing the risk of resurgence of cases. A series of annexes was developed to help guide countries through adjusting various public health measures in different contexts. This annex shows a pragmatic decision process for adapting PHSM based on epidemiological and public health criteria, and it should be read in conjunction with the interim guidance document.[1]

The document presents only public health criteria, while other critical factors, such as economic factors, security-related factors, human rights, food security, and public sentiment, should also be considered.

This document is intended for national authorities and decision makers in countries that have introduced large scale PHSM and are considering adjusting them.

How to use the criteria

The criteria are grouped into three domains that should be evaluated to address three main questions:

1. **Epidemiology** - Is the epidemic controlled? (Yes or No)
2. **Health system** - Is the health system able to cope with a resurgence of COVID-19 cases that may arise after adapting some measures? (Yes or No)
3. **Public Health Surveillance** - Is the public health surveillance system able to detect and manage the cases and their contacts, and identify a resurgence of cases? (Yes or No)

The criteria are not prescriptive, and it may not be feasible to answer some of them owing to lack of data, for instance. To the extent possible countries should focus on the criteria most relevant for them to inform decision making. The thresholds are indicative and may need to be revisited as further information about the epidemiology of COVID-19 becomes available. It is recommended to systematically assess the criteria at least weekly at a subnational administrative level when feasible.

1. There is indication that the epidemic is controlled

Key measure: Effective reproduction number (R_t) < 1 for at last 2 weeks

Theoretically, R_t (the effective number of secondary cases per infectious case in a population) below 1 is the best indication that the epidemic is controlled and declining. A package to estimate R_t is available,[2] together with an interactive application.[3] In countries with a large population, R_t might vary across the population and should be estimated at a subnational level.

A qualitative assessment based on some or all of the following criteria can be used to supplement estimates of R_t, or if surveillance data are insufficient to robustly assess R_t, to assess whether the epidemic is controlled.

Table 1. Epidemiological Criteria

Epidemiological Criteria*	Explanation
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 °	This indicates a decline in transmission equivalent to a halving time of three weeks or less since the latest peak, when the testing strategy is maintained or strengthened to test a greater % of suspected cases.
Less than 5% of samples positive for COVID-19, at least for the last 2 weeks, ° assuming that surveillance for suspected cases is comprehensive	The % positive samples can be interpreted only with comprehensive surveillance and testing of suspect cases, in the order of 1/1000 population/week

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	Through ILI sentinel surveillance, a low % of positive samples indicates low community transmission*
At least 80% of cases are from contact lists and can be linked to known clusters	This indicates that most transmission chains have been identified, offering the opportunity for follow-up. This may be limited by the fact that the information will certainly not have been collected at the height of the epidemic.
Decline in the number of deaths among confirmed and probable cases at least for the last 3 weeks °	This will indicate, with an approximately 3-week lag-time, that the total number of cases is decreasing. If testing has decreased, then the number of deaths in probable cases will be more accurate.
Continuous decline in the number of hospitalization and ICU admissions of confirmed and probable cases at least for the last 2 weeks°	This indicates, with an approximately 1-week lag-time and providing that the criteria for hospitalization have not changed, a decline in the number of cases.
Decline in the age-stratified excess mortality due to pneumonia	When pneumonia cases cannot be systematically tested, a decline in the mortality of pneumonia would indirectly indicate a reduction in the excess mortality due to COVID-19.

* Trend evaluation requires that no changes occurred in testing or measurement strategy

° 2-week period corresponds to the maximum incubation period and is the minimum period on which to assess changes in trends.

2. The health system is able to cope with a resurgence of cases that may arise after adjusting some measures

Key measure: Number of new cases requiring hospitalization is smaller than the estimated maximum hospital and ICU bed capacity of the health system (i.e. the health system can cope with new hospitalizations without becoming overwhelmed while maintaining delivery of essential health services).[4]

In the absence of this information, a qualitative assessment based on some or all the following criteria can be used.

Table 2. Health system Criteria

Health System Criteria	Explanation
All COVID-19 patients can be managed according to national standard	This indicates that the health system has returned to a state where all conditions (staff, beds, drugs, equipment, etc.) are there to provide the same standard of care that existed before the crisis.
All other patients with a severe non-COVID-19 condition can be managed according to national standard	
There is no increase in intra-hospital mortality due to non-COVID-19 conditions	
The health system can absorb or can expand to cope with at least a 20% increase in COVID-19 case load	This indicates that the system would be sustainable even if it had to absorb a surge in cases resulting from loosening public health and social measures. This includes sufficient staff, equipment, beds, etc.
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	This indicates strong capacity for coordination, supervision and training on IPC activities, including in primary health facilities.
All health facilities have screening for COVID-19	This is for ensuring that all patients who come to a facility are assessed for COVID-19 in order to prevent health associated infections.
All acute health facilities have a mechanism for isolating people with suspected COVID-19	The health system has sufficient capacity to isolate all patients with COVID-19

3. The public health surveillance can identify most cases and their contacts

Countries should have sufficient laboratory testing capacity and have a clear testing strategy in place to reliably identify cases.

A qualitative assessment of some or all the following criteria can be used.

Table 3. Public Health Surveillance Criteria

Public Health Surveillance Criteria	Explanation
Surveillance systems	
New cases can be identified, reported, and data included in epidemiological analysis within 24 hours	A surveillance system for COVID-19 is in place that is geographically comprehensive and covers all persons and communities at risk. Comprehensive surveillance includes surveillance at the community level, primary care level, in hospitals, and through sentinel surveillance sites for influenza and other respiratory diseases, where they exist.[5]
Immediate reporting of probable and confirmed cases of COVID-19 is mandated within national notifiable disease with requirements	This indicates that appropriate public health policies are in place for immediate notification of cases of COVID-19 from all health facilities.
Enhanced surveillance is implemented in closed residential settings and for vulnerable groups	This indicates that public health authorities have identified populations who live in residential settings or are vulnerable and that enhanced surveillance is put in place for these populations.
Mortality surveillance is conducted for COVID-19 related deaths in hospitals and in the community	This indicates the ability to rapidly and reliably track the number of deaths related to COVID-19. Where possible, medical certificate of death for COVID-19 deaths should be issued. Other approaches for mortality surveillance may be considered, such as reports from religious centres or burial sites.
The total number of laboratory tests conducted for COVID-19 virus is reported each day	Knowing the testing denominator can indicate the level of surveillance activity and the proportion of tests positive can indicate the intensity of transmission among symptomatic individuals.
Case investigation	
Public health rapid response teams are functional at all appropriate administrative levels	A measure of the capability to rapidly investigate cases and clusters of COVID-19.[6]
90% of suspect cases are isolated and confirmed/released within 48 hours of symptom onset	This indicates that investigation and isolation of new cases is sufficiently rapid to minimize the generation of secondary cases.
Contact tracing [7]	
At least 80% of new cases have their close contacts traced and in quarantine within 72 hours of case confirmation	These indicate that the capacity to conduct contact tracing is sufficient for the number of cases and contacts.
At least 80% of contacts of new cases are monitored for 14 days	Contacts should be contacted each day during the 14-day period and ideally no more than two days should elapse without feedback from a contact.
Information and data management systems are in place to manage contact tracing and other related data	While contact tracing data can be managed on paper at a small scale, large-scale contact tracing can be supported by electronic tools such as the *Go.Data* contact tracing software.

Adaptation of public health and social measures based on level of risk

Depending on the answers to the three questions, a level of risk (high, intermediate, low) is assigned. Here, the risk is an overall appraisal of the negative consequences resulting from loosening measures and the capacity to manage them. The risk level may be used to guide the adaptation of PHSM. In the context of the COVID-19 pandemic, finding, testing, and isolating cases, contact tracing, and quarantine remain core public health measures through all stages of the response. Similarly, measures to ensure protection of health workers and vulnerable groups must be maintained. Depending on the risk level, other measures such as community measures, restriction of mass gathering and measures to reduce the risk of introduction of the virus must be adapted.

References

1. World Health Organization. Considerations in adjusting public health and social measures in the context of COVID-19 (Interim Guidance) (https://www.who.int/publications-detail/considerations-in-adjusting-public-health-and-social-measures-in-the-context-of-covid-19-interim-guidance, accessed 15 April 2020)
2. Cori A et al (2019). EpiEstim: Estimate Time Varying Reproduction Numbers from Epidemic Curves. R package version 2.2-1. (https://CRAN.R-project.org/package=EpiEstim, accessed 09 May 2019)
3. Thompson RN, Stockwin JE, van Gaalen RD, Polonsky JA, et al. Improved inference of time-varying reproduction numbers during infectious disease outbreaks. Epidemics (2019) (https://shiny.dide.imperial.ac.uk/epiestim/)
4. World Health Organization. Coronavirus disease (COVID-19) technical guidance: Essential resource planning. Geneva 2020 (https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/covid-19-critical-items)
5. World Health Organization. Surveillance strategies for COVID-19 human infection (Interim Guidance) (https://www.who.int/publications-detail/surveillance-strategies-for-covid-19-human-infection, accessed 10 May 2020)
6. World Health Organization. Considerations in the investigation of cases and clusters of COVID-19 (Interim Guidance) (https://www.who.int/who-documents-detail/considerations-in-the-investigation-of-cases-and-clusters-of-covid-19, accessed 13 March 2020)
7. World Health Organization. Contact tracing in the context of COVID-19 (Interim Guidance) (https://www.who.int/publications-detail/contact-tracing-in-the-context-of-covid-19, accessed 10 May 2020)

WHO continues to monitor the situation closely for any changes that may affect this interim guidance. Should any factors change, WHO will issue a further update. Otherwise, this interim guidance document will expire 2 years after the date of publication.

WHO reference number: WHO/2019-nCoV/Adjusting_PH_measures/Criteria/2020.1