PERC
Partnership for Evidence-Based
Response to COVID-19

A Decision-Making Dashboard for COVID-19 Response in Africa

There is no "one-size-fits-all" approach to managing the COVID-19 pandemic; governments have had to adapt suppression and control strategies based on finding the balance of complex political, social, economic and health considerations.

This means that governments must continuously monitor not only data related to their primary objective (i.e., limiting COVID-19 cases and deaths), but also the factors that constrain that objective. A key challenge in many countries is that the data available to inform and adapt strategy are largely limited to disease transmission or public health and health system capacity. Data and analysis on social and economic burdens, public sentiment, and adherence to public health social measures (PHSMs) have been less readily available to response teams. This has contributed to a tendency to pit public health imperatives against economic needs, rather than incorporating a holistic set of factors in a systematic way to inform decision-making.

To support decision-makers in understanding the complex interactions of disease transmission, response options and secondary impacts, the Partnership for Evidence-Based Response to COVID-19 (PERC) has developed a decision-making framework and accompanying dashboard to support the use of multi-sectoral data in guiding national-level COVID-19 response strategy. With an emphasis on Africa, the framework draws on country experiences in managing the COVID-19 response and highlights both elements of effective responses and common challenges. The dashboard and framework are living documents that will be improved and adapted in response to real-time learning and feedback.

Decision-making framework: Different epidemic phases require different strategies

Although some countries are still working to eliminate COVID-19 or control hot spots, many have moved towards a strategy of finding a balance between minimizing cases, controlling spread and maintaining some economic activity. The phase of the epidemic directly informs and limits available strategies, which can be viewed along a continuum from full containment to tolerated transmission:

1 **Containment:** Preventing the spread of disease through measures such as early detection and isolation of cases, and contact tracing and quarantine. This strategy is only appropriate for countries with a contained epidemic or limited clusters so that transmission can be interrupted by tracing and quarantining contacts.

2 **Mitigation:** Minimizing the epidemic impact, delaying the outbreak peak and reducing the peak number of cases to reduce strain on the healthcare system. Achieved largely through public health social measures and specific treatments and vaccines, if available. Countries may opt for this strategy if they have localized or widespread community transmission.

3 **Suppression:** Reducing transmission to a minimum and maintaining low levels of disease transmission. This strategy is appropriate for countries with localized clusters or localized community transmission and can be used in countries with declining transmission after the epidemic peaks.

4 **Tolerated transmission:** Allowing transmission to occur while attempting to minimize loss of life. Some governments have elected to use minimal measures to reduce transmission and instead focus on providing adequate care to the seriously ill.

In all phases of the epidemic, it is possible that PHSMs implemented may have an unacceptably large social and/or economic impact, resulting in pressure on decision-makers to scale them back. Premature loosening of restrictions can result in a renewed increase in cases.

Most countries will need to shift strategies over the course of the pandemic in order to find and maintain a balance between health outcomes and social and economic conditions. However, it is critically important that these shifts in strategy are based on data and evidence, and ideally, linked to a transparent framework whereby all stakeholders and the public understand when the strategy is changing and why.

Choice of strategy depends not just on the phase of the epidemic but on other constraints as well. These vary by context, but can generally be grouped into five categories, as seen in the decision-making framework below.

Table 1: Decision framework

Category	Key questions
Disease situation *Transmission of COVID-19, taking into consideration testing capacity*	• What is the level of disease burden and how is it changing? • What is the severity of the outbreak, and how is it changing? • What is the current testing capacity, in order to assess accuracy of case reporting?
Public health and health system capacity *Capacity to mobilize the public health system to conduct testing and contact tracing at the scale needed, and the capability to surge health care capacity to meet the health care needs of infected patients*	• What is the current capacity of the public health system to conduct surveillance and contact tracing to interrupt transmission chains, and how quickly can this be scaled up? • How well can the health system cope with an influx of COVID-19 patients, providing adequate treatment to minimize deaths while retaining essential services? • Where are the greatest gaps and how can resources be directed to these areas? • How well are health care workers protected from disease transmission?
Economic burden *The nature of the economy, including key sectors/drivers of growth and ongoing economic trends, economic burdens resulting from PHSMs and government means to mitigate those burdens.*	• What individuals or households are most likely to experience loss of income or food insecurity because of PHSMs? • Can social protection and social insurance mechanisms be rapidly scaled up to offset the burden on these individuals/households? • How dependent is the economy on trade and sectors with high transmission risk (e.g., manufacturing)? • How do macroeconomic factors (fiscal space, interest rates, currency pressures, etc.) affect means to finance the response?
Social disruption *Social burdens, including disruptions within a community and/or by a police force, resulting from PHSMs*	• Does the government have the means to enforce PHSMs without relying on force? Are human rights being protected? • How does disruption to schooling affect learning, particularly among disadvantaged children who are less able to access or benefit from remote schooling options? • How are PHSMs affecting the risk of violence, or other insecurity, including domestic violence?

PHSM implementation and adherence: *Access to the means to follow recommendations, as well as the motivation to do so; perceptions of risk and personal agency*	• How does the public perceive the risk of COVID-19? • How well-informed is the public about COVID-19 and about the government response? Is there misinformation that may limit adherence? • To what extent do different population groups have access to means to adhere to PHSMs, such as water for hand-washing, face coverings, and safe spaces to quarantine/isolate or maintain distance, etc.? • Do people believe that their personal behaviors can diminish their risk, and do they have the confidence that they can change behavior? • What share of the population supports different PHSMs?

PERC Dashboard: Visualizing COVID-19 response and impact

PERC has developed a dashboard to guide decision-makers in policy questions related to the COVID-19 response, visualizing their country's current performance on the dimensions of the decision-making framework.

The opening page of the dashboard—the "Situation Overview"— consists of essential COVID-19 response indicators to serve as proxies for the five policy categories outlined above. When viewed together on the situation overview page, these essential indicators provide a fuller picture of the COVID-19 situation in a country (See Table 2 for more details).

Each country with available data is assessed with an estimated score from 1 to 4 on disease situation, public health and health system capacity, economic burden and social disruption, with lower estimates indicating an opportunity to improve response strategy, and higher estimates indicating strength in the response. These estimates are intended to help decision-makers identify opportunities for policy intervention and direct national strategy, not as an overall assessment of success or failure; there is always room for adaptation and improvement based on localized prioritization.

Limitations of the data included in the leaderboard are the following:

1 Missing data for some countries in existing indicators;

2 Unreliable nature of the data; and

3 The indicators included are not entirely sufficient to fully understand the complexity of each context. However, for many important factors (e.g., contact tracing or the burden on essential services) nationally-aggregated datasets that can be measured at a regular interval do not exist.

To provide further behavioral insight into PHSM adherence and impact, survey results from 18 countries across the African continent will be included in the subsequent pages. The survey is conducted every three to four months and allows users to supplement up-to-date data and dive deeper into the impact PHSMs are having on communities and targeted populations.

Table 2: PERC dashboard indicators and estimates

Dimension	Indicator	Estimates				Source
		1	**2**	**3**	**4**	
Disease situation*	COVID-19 incidence per capita	See below				Africa CDC
	Tests per case ratio					Africa CDC
Public health and health system capacity	New healthcare worker infections of COVID-19 per capita	20+	‹20	‹1	0	WHO AFRO *To be included in phase 2*
Risk perception	Risk Perception: Measure of perception of transmission and severity risk of COVID-19 as expressed in social media posts and traditional news quotes and headlines. Share of "low" risk perception as a share of all expressions of high and low risk.	Data showing "low" risk perception is 20% of the sample or greater	Data showing "low" risk perception is at least 10% but less than 20% of the sample	Data showing "low" risk perception is at least 5% but less than 10% of the sample	Data showing "low" risk perception is less than 5% of the sample	Novetta

Economic burden	% of population with insufficient food	40+	30-40	20-30	‹20	WFP *To be included in phase 2*
	Burden of PHSMs: Percentage of all discussion of PHSMs and government response that suggests PHSM implementation or adherence is an economic or social burden, as expressed in social media posts and traditional news quotes and headlines.	Data showing "High" burden is 20% of the sample or greater	Data showing "High" burden is at least 10% but less than 20% of the sample	Data showing "High" burden is at least 5% but less than 10% of the sample	Data showing "High" burden is less than 5% of the sample	Novetta
Social disruption	Change in security incidents, comparing two weeks to the previous two weeks	5+	0-5	0 to -5	–5 +	ACLED
	Sentiment towards national government: A share of total discussion that has a negative sentiment toward the national government and its COVID-19 response efforts as expressed in social media posts and traditional news quotes and headlines.	Data showing "Negative" sentiment is 20% of the sample or greater	Data showing "Negative" sentiment is at least 10% but less than 20% of the sample	Data showing "Negative" sentiment is at least 5% but less than 10% of the sample	Data showing "Negative" sentiment is less than 5% of the sample	Novetta

PHSM implementation and adherence	Oxford Stringency Index	No threshold estimate. Arrow indicates increase or decrease in score over the past two weeks				Oxford
	Mobility compared to pre-COVID baseline	No threshold estimate. Color indicates + or – change of more than 10 points in the past 2 weeks				Google mobility
	Sentiment to PHSMs: Share of negative sentiment as a share of all negative and positive sentiment to PHSMs as expressed in social media posts and traditional news quotes and headlines.	Data showing "Negative" sentiment is 20% of the sample or greater	Data showing "Negative" sentiment is at least 10% but less than 20% of the sample	Data showing "Negative" sentiment is at least 5% but less than 10% of the sample	Data showing "Negative" sentiment is less than 5% of the sample	Novetta
	Adherence to PHSMs: Reports of public non-adherence to PHSMs as a share of all reports of adherence and non-adherence, as expressed in social media posts and traditional news quotes and headlines.	Data showing "Low" adherence is 20% of the sample or greater	Data showing "Low" adherence is at least 10% but less than 20% of the sample	Data showing "Low" adherence is at least 5% but less than 10% of the sample	Data showing "Low" adherence is less than 5% of the sample	

Disease situation is a composite indicator of incidence per capita and tests per case ratio, in order to balance reported cases with testing capacity. The following is the calculation for Disease Situation:

	Estimates			
	1	**2.5**		**4**
Incidence per capita	5 +	5 +	5 -	5 -
Tests per case ratio	10 -	10 +	10 -	10 +