Critical COVID-19 Information Metrics to Inform Response Leadership's Decision Making in Non-U.S. Settings

Accessible version : https://www.cdc.gov/coronavirus/2019-ncov/global-covid-19/leadership-emergency-response.html

INTRODUCTION

Information sharing among international and national stakeholders during the ongoing COVID-19 response is critical for a coordinated response. Emergency Management Systems Integration (EMSI) is the process of bringing together the public health programs, emergency management systems, and best practices into one cohesive system to enhance the prevention, detection and response to public health events. EMSI supports the coordination of information flow and resource sharing among the disaster management authorities, multisectoral ministries and external partners responding to COVID-19. This involves integrating and streamlining existing — often disparate — public health systems in such a way that focuses on increasing the effectiveness of a public health preparedness and response program before, during, and after a public health event to ensure optimal response decision-making and strategy.

This document aims to provide critical COVID-19 information metrics by technical area that response leaders in non-U.S. settings can request to aid in informing COVID-19 response decisions. This document includes a set of core metrics within 10 technical areas for response leaders to help monitor response progress and guide decision making. This list was drawn from World Health Organization (WHO) and U.S. Centers for Disease Control and Prevention (CDC) COVID-19 guidance documents with consultation from the CDC Operations and International Task Force subject matter experts in the corresponding technical areas.[1-12] This document is not meant to be exhaustive but to identify those information metrics that are critical to inform response leadership. Countries' response leadership may consider and request more metrics than what is listed in this document within their public health systems. Additionally, other metrics may be considered depending on a country's specific transmission context (incidence, mortality, geographic spread, etc.).

COUNTRY-LEVEL COORDINATION, MONITORING, AND PLANNING[1]

1. Proportion of multi-sectoral ministries and external partners engaged in the response or that have a liaison in the central coordination mechanism stratified by ministry/agency, geographic engagement, and technical area
2. Proportion of coordination entities, partners, or workgroups at the national and subnational level reporting to the central/lead response agency
3. Proportion of preparedness and response plans being utilized (e.g. National Strategic Response Plan, Concept of Operations Plan, COVID-19 Operations Response Plan, Incident Action Plan)
4. Number and location of functioning call centers at national and subnational levels reporting on COVID-19
5. Number of corrective actions to be taken based on the Inter-Action Reviews (IAR) and After-Action Reviews (AAR) results and proportion implemented in accordance with International Health Regulations (IHR, 2005)

EPIDEMIOLOGY AND SURVEILLANCE[1,2,3,4,5,6,7,8,9]

1. Total number and incidence of confirmed, probable, and suspected cases per 100K population, with 7-day moving average
   Baseline stratification by:
   - Time
   - Demographics (e.g. age, sex, race, ethnicity, location)
   - Outcome (e.g. recovered, hospitalized, deaths)
   - Healthcare workers
   - Laboratory test used for confirmation
   - Epidemiologic linkage (e.g. clusters)

   Additional stratification by:
   - Demographics (e.g. living arrangement, income, education, employment)
   - Responders (e.g. Management, Operational and Technical Staff, Rapid Response Team [RRT], Emergency Medical Team [EMT])
   - Vulnerable populations (e.g. refugees, Internally Displaced Persons [IDPs])
   - Transmission setting (e.g. international travel vs community spread)
2. Number of tests performed by RT-PCR and proportion of positive tests
3. Number and proportion of cases interviewed within 24-hour of identification to elicit contacts
4. Number and proportion of contacts that are:
   - Registered in local data management system
   - Investigated within 48 hours of identification
   - Tested* once symptomatic
   - Notified and quarantined within 48 hours of confirming their exposure
   - Followed up each day for 14 days from last exposure to an infectious case or until confirmed as a case
5. Number and proportion of healthcare facilities using standardized case definitions
6. Number and proportion of staff trained on case investigation and contact tracing
7. Number of COVID-19 related domestic and cross-border events detected through open source media (e.g. news, social media) including call centers by Event-Based Surveillance (EBS)

*WHO recommends testing within 24 hours of detection, but this might be challenging in limited-resource settings

CASE MANAGEMENT[1,2,3]

1. Number of daily and 7-day moving average of confirmed and probable COVID-19 cases hospitalized, detected as outpatients, and detected within the community
   Stratified by:
   - Time
   - Demographics (e.g. age, sex, race, ethnicity, location, living arrangement, income, education, employment)
   - Vulnerable populations (e.g. Refugees, Internally Displaced Persons [IDPs])
   - Risk factors for mortality (e.g. past medical history, medications, lifestyle)
   - Symptoms and duration
   - Treatment
   - Hospitalization duration
   - Sequelae (e.g. persistent signs and symptoms, complications)
   - Outcome (e.g. recovered, long-term facility admission, death)
2. Number and proportion of daily and/or weekly inpatient and ICU beds available and occupied by probable and confirmed COVID-19 patients
3. Number and proportion of inpatient and outpatient healthcare facilities utilized for COVID-19 patients
4. Number and proportion of medical equipment available and utilized (e.g. ventilators, continuous positive airway pressure (CPAP) machines, oxygen tanks, nasal cannula)
5. Number and proportion of available and utilized consumables (e.g. medications, Personal Protective Equipment [PPE] for case management)
6. Number of available and needed healthcare workers by specialty and region (e.g. physicians, nurses, traditional healers, community health workers)

INFECTION PREVENTION AND CONTROL (IPC)[1,2]

1. Proportion of healthcare facilities by healthcare sector (e.g. public, private, traditional healers) and region that: Developed/adapted and approved procedures for screening and triage
   - Received training and materials on screening and triage activities
   - Have designated staff to effectively screen and triage patients
   - Have designated space for screen and triage
   - Have the necessary supplied and equipment to effectively screen and triage patients
   - Received training and materials on healthcare workers screening and leave from work procedures
   - Developed and approved procedures for inpatient isolation and cohorting
   - Received relevant training and materials on inpatient isolation and cohorting
   - Have designated space for isolating and cohorting
   - Have the necessary supplies and equipment to effectively isolate and cohort patients
2. Proportion of public and community spaces with high-risk of community transmission based on IPC and Water, Sanitation and Hygiene (WASH) assessment

3. Number of public and community spaces (e.g. restaurants, places of worship, parks, quarantine stations) without IPC and WASH services and resources (e.g. masks, water, soap, hand sanitizer)

LABORATORY[1,2,3]

1. Number and proportion of samples received and tested in a 24-hour period
   Stratified by:
   - Public laboratory
   - Private laboratory
   - Academic laboratory
2. Number of available COVID-19 tests and reagents
3. Number of designated and needed domestic COVID-19 diagnostic laboratories by public, private and academic systems with IPC standards
4. Time frame from specimen collection to results received by submitter by test type
   Data collected by:
   - Time frame from specimen collection to receipt by laboratory
   - Time frame from specimen received by laboratory to result release to submitter
   - Time frame from result release to received
5. Number of available and needed certified laboratory health workers
6. Number of available and required certified staff for sample packing and shipping

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COMMUNICATIONS, SOCIAL MOBILIZATION, AND BEHAVIORAL SCIENCE[1,3,10,11,12]

1. Key findings of knowledge, attitudes, practices and beliefs (KAPB) of target and vulnerable populations about COVID-19 and related health topics
   Report on the measure of:
   - Adherence to individual and community mitigation measures and acceptability of non-pharmaceutical and pharmaceutical interventions (e.g. physical distancing, mask use, movement restrictions)
   - Acceptability and primary concerns around future SARS-COV-2 vaccine in target populations
   - Impact of secondary effects related to COVID-19 (e.g. mental health, stigma, interpersonal violence, health-seeking behaviors for non-COVID-19 health issues)
2. Presence of an evidence-based risk communication and community engagement (RCCE) strategic plan focused on specific behavior change outcomes in target and vulnerable populations to mitigate spread of COVID-19
3. Number and proportion of partners, HCW's leaders, community responders, and spokespersons trained on risk communication guidance
4. Estimated reach of communication channels by COVID-19 hotlines, websites, social media, radio, television and other communication platforms

5. Number and proportion of people with access to basic mitigation tools such as masks, soap, water, alcohol-based hand rub, etc.
6. Number and type of COVID-19 community rumors and concerns reported, and the number of rumors and concerns addressed through promotion of accurate and tailored health guidance that mitigate harm of misinformation related to COVID-19

BORDER HEALTH[1]

1. Number and proportion of in-country official domestic and international points of entry (POE) and points of control (POC) that are conducting COVID-19 response activities (e.g. screening, illness response, traveler communication)
   Stratified by:
   - Ground crossings
   - Airports
   - Ports
   - Community-based control points
2. Number and proportion of active POE and POC that reported an alert in the last 7 days
   Stratified by:
   - Ground crossings
   - Airports
   - Ports
   - Community-based control points
3. Number and proportion of alerts received from POE and POC that were investigated within 24 hours
   Stratified by:
   - Ground crossings
   - Airports
   - Ports
   - Community-based control points
4. Number and proportion of POE and POC that are conducting COVID-19 response activities that:
   - Trained staff in appropriate actions to manage ill travelers and carry out cleaning and disinfection in the last 3 months
   - Able to safely transport patients or contacts to designated health facilities and quarantine centers
   - Trained staff on COVID-19 risk communication and providing risk communication educational material to travelers
5. Number and proportion of inbound travelers, stratified by POE** type, that were:
   - Tested
   - Tested positive
   - Referred to a health facility
   - Quarantined

**POEs conducting systematic testing for inbound travellers

MANAGEMENT, OPERATIONS, AND LOGISTICS

1. Number and proportion of vacant positions at the national and local level within the COVID-19 response by technical area of expertise and time period:
    - Currently
    - Projected in the next 30 days
    - Projected in the next 60 days
    - Projected in the next 90 days
2. Number and proportion of staff available on the COVID-19 response roster by technical area of expertise (Management, Operational and Technical Staff, RRTs, EMTs)
3. Number and proportion of staff that are:
    - Trained in their technical field
    - Prepared for deployment
4. Percentage of resources available for field operations including technological and personal protective equipment
5. Number, position, duration, and location of responders deployed to the field and operational and technical response staff (Core and Surge)
6. Number of active, completed, and pending staff response requests by technical area of expertise, region, and deployment duration

HEALTH AND SAFETY

6. Number of staff/responders that have been medically cleared, fit tested for respiratory mask, and cleared for travel
7. Number and proportion of responders reporting COVID-19 symptoms through an illness monitoring system
8. Number and proportion of responders reporting mental health symptoms, psychological stressors and poor resilience
9. Time for follow-up on responder suspected exposure
10. Numbers of reports of injuries, illnesses, near-misses, and unsafe work conditions along with a general analysis of those reports

SECURITY

1. Number and proportion of responders with security training and awareness to ensure freedom of movement, safety and security to perform their duties and meet minimum operating standards
2. Number and proportion of responders who have received area specific security briefings regarding current situation
3. Number of national police, military and/or international non-governmental organizations (e.g. UN, IRC) reporting on the national and local security situation on the ground
4. Number of communication resources (e.g. phones, hotspots) available to deployers to support a phone tree and daily call schedule to account for all deployed
5. Number of administrative personnel supporting deployers with documentation/housing/sustenance/transportation while in the field
6. Number and location of responders who have experienced security issues

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