

# Monitoring Continuity of Essential Health Services During the COVID-19 Pandemic

A GUIDE FOR LOW- AND MIDDLE-INCOME SETTINGS



**1 Identifying essential services**



**2 Selecting data sources**



**3 Selecting essential services indicators**



**4 Data analysis**



**5 Presenting findings for action**

## Summary

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The COVID-19 pandemic and associated response can have a significant downstream effect on access to routine health care services, and indirectly cause morbidity and mortality from causes other than the disease itself. Diversion of resources from routine health care services, reduced health care staff attendance, patients' fear of infection when visiting health care facilities, and government-imposed travel restrictions can all limit access to life-saving care.

The ability of the health care system to continue routine health care services will vary according to the severity of a COVID-19 outbreak. With few cases, the system may be able to continue to provide services as usual. However, with a higher caseload the system may be overwhelmed by COVID-19 patients while facing problems such as reduced supplies and infected health care staff, leading to reduction or suspension of essential services.

It is important that while measures are put in place to tackle COVID-19, ensuring continuity of routine and essential services is not overlooked. The determination of which services are considered essential is country-specific and guided by the burden of disease, local and national priorities, and the likely impact if services are not available. Government departments should identify the services they consider to be essential, determine how to continue to offer them, and then communicate service continuity clearly to the public to avoid delays in seeking care for potentially life-threatening conditions. Monitoring these services can help identify changes in service utilization early on and initiate strategies to minimize secondary health impacts of the pandemic.

This document provides guidance to government health officials on using routinely collected data for monitoring continuity in the utilization of essential health services.

### **The document includes practical steps and tools for:**

- Identifying essential services
- Selecting data sources
- Selecting essential services indicators
- Data analysis
- Presenting findings for action

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## Introduction

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As countries everywhere adopt measures to mitigate the COVID-19 pandemic, they also face the challenge of continuing to provide health care services for non-COVID-19 conditions. Diverting staff and facility resources for outbreak response can have adverse effects on routine and essential health services.

Evidence from previous outbreaks has demonstrated that a breakdown in the provision of essential medical services results in deaths that may outnumber those from the cause of the outbreak.<sup>1,2</sup> In the 2014 Ebola outbreak in West Africa, over 11,000 deaths were attributed to Ebola and an estimated 11,000 to 26,000 additional deaths occurred because of interruptions in vaccinations and treatment for HIV/AIDS, malaria, tuberculosis and measles.<sup>3</sup>

The World Health Organization (WHO) estimates that disruptions during the COVID-19 Pandemic could almost double the number of deaths due to malaria in sub-Saharan Africa<sup>4</sup> and interrupt the vaccination of around 80 million babies, putting them at a higher risk of diseases such as diphtheria, measles and polio.<sup>5</sup> Emergency departments in the United States reported reductions in visits of up to 50%, including reductions in the number of heart attack and stroke cases, leading to fears among health care providers that patients were delaying seeking care.<sup>6</sup> According to a recent WHO survey, access to services for noncommunicable diseases (NCDs) such as diabetes, cancer and cardiovascular diseases, have been partially or completely disrupted in many countries.<sup>7</sup> The effects may continue after the outbreak subsides due to factors such as loss of health care workers.

Access to health care services during an outbreak are affected by factors in both the supply and the demand for these services. Patients may fear accessing services due to a perceived increase in the risk of contracting COVID-19, or mistrust health care providers' ability to ensure sufficient infection prevention and control measures, resulting in reduced visits even when the health care system has not been overwhelmed by the outbreak response. If health systems are overwhelmed by high numbers of COVID-19 cases, services such as elective surgeries may be reduced while the health system focuses on the care of COVID-19 cases. There may be shortages of health care workers either because they are deployed for outbreak response or become ill themselves. In the recent WHO survey, 94% of the 155 participating countries reported reassignment of ministry of health staff working in NCDs to support COVID-19 response.<sup>7</sup> These shortages may be compounded by a breakdown in the supply chain of medication, supplies and equipment as borders are closed. Public health and social measures to combat COVID-19 may also have the unintended consequence of reducing access to essential services as transport networks close down or strict lockdown enforcement measures limit access to medical care. Reduced public transport, cancellation of planned treatments, and shortage of medicines and diagnostics were some of the other causes reported for the disruptions.

Maintaining essential health services during the COVID-19 pandemic is important and may require changes in the way services are delivered. WHO recently published the updated

### [Maintaining essential health services: operational guidance for the COVID-19 context.](#)

which outlines a set of targeted actions for countries to maintain essential health services during the ongoing pandemic and recommends strengthening the monitoring of essential health services, to inform key decisions for modifications to service delivery, throughout all phases of the pandemic.<sup>8</sup>

## **Purpose and scope**

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Building on the [WHO guidance](#), this document provides instructions on the analysis of data to monitor utilization of essential health services during the outbreak of COVID-19 and advises on how to use routinely collected data from existing health information management systems. It does not call for countries to establish additional data collection systems.

This guidance offers a way to detect whether there are changes in the level of essential services being delivered during a pandemic. It does not cover the programmatic changes that countries should make to ensure that the services continue in either their usual or adapted form. Resources for the latter are provided in Appendix A.

## **Target Audience**

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This guide is for government health officials, program managers and health data analysts who are involved in the delivery of routine and essential health services in low- and middle-income countries.

## **Considerations**

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- A core set of indicators should be defined and tracked to enable monitoring of the utilization of selected essential services.
- Data analysis should be done at the lowest geographical or health care unit level that is feasible—for example, health center or district—as access to essential health services is likely to vary by area and national and sub-national data will not reflect local variations. Population numbers should be kept in mind when interpreting the results as small numbers may cause fluctuations in the indicator value
- Most countries will already have mechanisms in place to monitor health care services and analysts will be familiar with the system's data quality and completeness. During the pandemic, new problems may surface with respect to timely entry into data systems in

addition to existing problems in data quality. Efforts should be made to ensure that staff involved in data collection and reporting follow safety measures. Contact may have to be made directly with health facilities to obtain the data and reports.

- Some sources of data, such as surveys, may provide a more accurate reflection of community needs and gaps in essential services, but may not provide timely information for rapid action.
- Though this document focuses on identifying under-utilization of essential services, an increase may be seen in the utilization of some services such as accidents and emergency (A&E) due to domestic violence, alcohol-related violence or mental health crises during the pandemic. Measures should be put in place to monitor for such an increase so that necessary action can be taken.

## Steps for monitoring essential services



### 1 Identify essential services

Each country will prioritize certain essential services based on local disease burden, extent of COVID-19 spread, and health care system capacity. WHO provides the following seven categories of high-priority services that countries should consider essential:<sup>8</sup>

- Services that are critical to the prevention of communicable diseases, particularly vaccinations;
- Services related to reproductive health, including care during pregnancy and childbirth;
- Core services for vulnerable populations, such as infants and older adults;
- Provision of medications, supplies and support from health care workers for the ongoing management of chronic diseases; including mental health conditions;
- Continuity of critical facility-based therapies;
- Management of emergency health conditions and common acute presentations that require time-sensitive intervention;
- Auxiliary services, such as basic diagnostic imaging, laboratory services, and blood bank services

Countries should determine which of these or other services they will monitor. Vaccinations, cardiovascular conditions, antenatal care, maternity care and newborn services are likely to be a priority for most countries. Communicable diseases such as TB, malaria and HIV may be a

priority for some countries whereas for others it may be cancer treatment, screening programs and mental health.



## 2 Select data sources

This document focuses on using routinely collected data that is available in the local health management information system, such as DHIS2. Essential services can be facility based or community based. Countries should identify which of the local information systems contain the data relevant to the services selected for monitoring. In some low-resource settings, data sources, especially for community-based services, may rely on paper-based data collection. Surveillance data can also be a source of information. Considerations should include the safety of staff during data collection.<sup>9</sup>



## 3 Select essential services indicators

Each country will determine which essential services to monitor. The box below provides some examples of indicators recommended by WHO. This is not meant to be an exhaustive list; countries should refer to WHO guidance and identify and define indicators that best suit their needs and availability of data. For example, the Essential Health Service Situation Reports in Liberia, developed to monitor priority disease trends as part of the national health recovery plan after the Ebola outbreak, included selected indicators covering maternal, child and neonatal health, epidemic-prone illnesses, TB and HIV, mental health, and health services delivery systems.<sup>10,11</sup>

### Box 1

#### Example of indicators for monitoring the continuity of essential health services during COVID-19

- Total number of outpatient attendances or primary care visits
- Total number of hospital discharges, including deaths (both related and unrelated to COVID-19)
- Number of facility births
- Number of maternal deaths
- Number of children younger than 1 year receiving their third dose of diphtheria-pertussis-tetanus (DPT3) or their first dose of measles vaccine
- Number of new and relapse TB cases notified
- Percentage of adults living with HIV currently receiving antiretroviral therapy who are affected by treatment disruptions

Source: WHO, *Maintaining essential health services: operational guidance for the COVID-19 context*



## 4 Analyze

### MEASURE

- At a minimum, the number of clinic visits for specific conditions should be monitored, such as the number of new and relapsed cases of TB and the number of new cancer diagnoses. This will provide an absolute measure of change in service utilization.
- As there may be fluctuations in the total number of patients accessing health services during and after the pandemic, calculating the rates will provide additional information on whether specific services are more affected than others. When using data from a health management information system, the total number of outpatient visits, primary care visits or inpatient admissions can be used for the calculation, e.g.
  - Rate of specific condition per 10,000 outpatient or clinic patients
  - Rate of hospitalizations due to specific conditions per 10,000 admissions

Rates are useful for comparing the extent to which essential services are affected while taking into account the volume of that service.

- Indicators that are defined and set up in the health management information system and already monitored prior to the pandemic can be used and may be accompanied by reports or graphs in the system, making them an easy and useful means for monitoring services.
- Where data are available, stratify the analysis by age and sex. This can help identify whether any sub-groups are disproportionately affected.
- Where feasible, stratify the analysis by geographic area such as health care unit, district, province, etc. This can help identify geographic areas where measures should be targeted.

### COMPARE

#### *Trends*

- Compare current year rates to the previous three to five years or, where data are limited, to the previous year. This can help identify whether there are seasonal patterns, e.g., in services for malaria.
- To identify and address under-utilization of essential services early, it may be beneficial to establish a baseline for the service using historical data by calculating an average for the time period. A decline in service utilization during and after the pandemic, especially below the baseline, should prompt investigation into the reasons, and timely corrective action, if required.
- If historical data are not available, monitoring can begin from the time the service started collecting and analyzing data to determine whether there is a decrease in utilization. The

observed utilization would need to be interpreted against the local context as services may already have declined by the time data collection started.

*The following templates are available to assist with data analysis:*

[Appendix B: Data inventory and metadata template](#)

[Appendix C: Excel template for data analysis](#)

## INCLUDE ADDITIONAL DATA

Indicators selected should not only measure number of people treated or admitted, but should also include factors that affect service use and overall service delivery, such as a decline in resources, staff or stock, which would result in fewer people receiving care. Where possible, include indicators that reflect both the *supply* of resources needed to provide essential services (such as health care staffing levels, vaccine doses, medicine stock) as well as *demand* for the services (such as visits). Understanding changes in demand may be more difficult as patient attitudes and beliefs are not routinely captured and would be more likely obtained through surveys.

Whether additional data are monitored will depend on the routine collection and availability of such data in the health system. Box 2, below, provides some examples of the additional indicators.

### Box 2

#### Example of additional indicators for monitoring the continuity of essential health services during COVID-19 pandemic

- Essential medicines or supplies for which there is less than two months' inventory without confirmation of on-time replenishment, or with or without confirmation of replenishment
- Number of health workers available for work, disaggregated by occupational group (i.e. by International Standard Classification of Occupations, or ISCO-8 classification)
- Number of health workers infected by COVID-19, disaggregated by occupational group, including health or care workers in nursing homes and long-term care facilities

Source: WHO, *Maintaining essential health services: operational guidance for the COVID-19 context*



## 5 Present, communicate and act

- Present the findings from the analysis using tables and graphs that illustrate the results and trends stratified by the variables selected, e.g. by sex, age and province.

- Determine the frequency of reports—whether monthly, or weekly, depending on availability of the data for the services monitored.
- Where feasible, compare service utilization to data on factors that may affect utilization, such as staffing levels and public health and social measures, which can help with the interpretation of the results.
- Engage with health care managers and program leads to help with the interpretation of findings.
- Use the data findings to drive necessary action such as investigation of the cause of any disruption and corrective action to ensure that essential health services are maintained as much as safely feasible. Service provision may need to be adjusted depending on the country's epidemic curve and the epidemic's impact on health care resources. Clearer communication may be needed to inform the public about the continuity of essential services and the measures put in place to ensure safety of patients.

*The following template is available to assist with writing a report:*

[Appendix D: Word template for essential services monitoring report](#)

## List of appendices

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Further resources and tools to support analysis and reporting are provided:

[Appendix A](#): Further resources to guide action to reduce disruption in essential services

[Appendix B](#): Data inventory and metadata template

[Appendix C](#): Excel template for data analysis

[Appendix D](#): Word template for essential services monitoring report

## References

- 1 Elston JW, Cartwright C, Ndumbi P, Wright J. The health impact of the 2014-15 Ebola outbreak. *Public Health*. 2017;143:60-70. doi:10.1016/j.puhe.2016.10.020
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- 6 Kaiser Health News. Available from: <https://khn.org/news/eerie-emptiness-of-er-worries-doctors-as-heart-attack-and-stroke-patients-delay-care/>. Last accessed: 05/27/2020
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- 11 World Health Organization (WHO). *Essential health services situation report—Background*. Available from: <https://www.who.int/csr/disease/ebola/health-systems-recovery/ehs-background/en/> Last accessed: 05/28/2020

# Appendix A

## Further resources to guide action to reduce disruption in essential services

- WHO: [Community-based health care, including outreach and campaigns, in the context of the COVID-19 pandemic](#)
- WHO: [Guiding principles for immunization activities during the COVID-19 pandemic](#)
- WHO: [Immunization in the context of COVID-19 pandemic, Frequently Asked Questions](#)
- Resolve to Save Lives: [Coronavirus and Chronic Diseases: An Extra Dose of Prevention](#)
- Resolve to Save Lives: [Safe Route to Care: Primary health center redesign to protect chronic disease patients during the COVID-19 pandemic](#)
- Resolve to Save Lives: [Leveraging Technology to Improve Health Care During the COVID-19 Pandemic and Beyond](#)