COVID-19 case management capacities: diagnostics, therapeutics, vaccine readiness, and other health products

A module from the suite of health service capacity assessments in the context of the COVID-19 pandemic

INTERIM GUIDANCE

5 March 2021

World Health Organization

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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.

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Introduction

Context

On 30 January 2020, the Director-General of the World Health Organization (WHO), declared the COVID-19 outbreak to be a global public health emergency of international concern under the International Health Regulations. Following the spread of COVID-19 cases in many countries across continents, COVID-19 was characterized as a pandemic on 11 March 2020 by the Director-General, upon the advice of the International Health Regulations Emergency Committee.

The COVID-19 pandemic has continued to shine a light on the fragility of health services and public health systems globally. It has revealed that even robust health systems can be rapidly overwhelmed and compromised by an outbreak. Against this rapidly evolving situation, many countries are facing challenges in the availability of accurate and up-to-date data on capacities to respond to COVID-19 while maintaining the provision of essential health services. Few countries have reliable and timely data on existing and surge health workforce and service capacities.

In response to this situation WHO has developed the "COVID-19 case management capacities: diagnostics, therapeutics, vaccine readiness, and other health products" monitoring tool. This tool has been designed to assess present and surge capacities for the treatment of COVID-19 in health facilities, with a focus on the availability of diagnostics, therapeutics and other health products, vaccine readiness, availability of beds and space capacities. This tool replaces the previous version published on 20 October 2020 and includes updates to the skip patterns and annexes. It forms part of a wider Suite of health service capacity assessments in the context of the COVID-19 pandemic. These different monitoring tools focus on different aspects of the dual-track of maintaining essential health services while continuing to manage COVID-19 cases. The suite and the different modules are described in annex 1.

Objectives of this module: COVID-19 case management capacities: diagnostics, therapeutics, vaccine readiness, and other health products

This tool was developed to ensure the provision of health products for COVID-19 patients in designated COVID-19 facilities. It allows health facilities to assess the availability and status of stockout of critical COVID-19 medicines, equipment and supplies on site and to identify areas that need further attention to enable the facility to respond effectively to the pandemic.

The proposed approach for measuring the availability of the above-mentioned health products is based on the presence of selected medicines, equipment or supplies on the day that the assessment is conducted and does not take into account expected stockouts. The products identified using this tool should always be available in the facilities. The tool has been designed to be user-friendly, taking into consideration the limited human resources available at this time to conduct and complete the assessment. It can be used as a general reference for assessing COVID-19 case management and capacities in conjunction with other more detailed suite of health service capacity assessment modules produced by WHO. The module can be used periodically (at least at 2- to 4-month intervals) from the early stages of the emergency to early recovery to assess the availability of diagnostics and therapeutics, and vaccine readiness for COVID-19.

The proposed list of medicines should be adapted to national and local contexts by taking into account the country's essential medicines list. Depending on the country, similar adaptations might be required for subsection 1.5 "type of facility" and 4.3 "Solidarity" clinical trial drugs. Please note questions for country adaptation are shaded in blue. Interviewer instructions are shaded in grey.

Content areas

The tool encompasses key components that are essential to managing COVID-19 in a hospital setting. They include:

- medicines for management of COVID-19 (including the Solidarity clinical trial);
- personal protective equipment;
- infection, prevention and control (IPC) supplies;
- diagnostic testing, imaging and patient monitoring devices and supplies;
- medical equipment for management of COVID-19;
- COVID-19 vaccine readiness; and
- beds and space capacity.

Target audience

The tool is intended to be used by:

- incident management and emergency operation officers
- facility managers
- pharmacists
- biomedical engineers
- IPC officers
- planning officers
- procurement officers
- laboratory staff.

Key questions that this tool can help to answer

The assessment tool is intended to answer the following key questions:

- Do facilities have the necessary diagnostic equipment and supplies for COVID-19 testing?
- Do facilities have the necessary medicines and medical supplies for the management of COVID-19 patients?
- Do facilities have the necessary personal protective equipment for health-care workers?
- Do facilities have the necessary IPC supplies?
- Do facilities have a functioning cold chain ready to support potential COVID-19 vaccination?
- What is the bed and space capacity of the facilities to manage patients affected by COVID-19?

When to use this module

The tool is designed for use from the early stages of the emergency to early recovery.

Mode of data collection

Paper-based and electronic collection of data is used.

Methodology

Owing to its clinical characteristics and the way in which it is evolving, COVID-19 is challenging the health systems of many countries. Patients with severe infections may need to be transferred to an intensive care unit (ICU) and require access to mechanical ventilation, intubation and sedation as well as treatment of

potential coinfections. The lists of selected tracer items for medicines, supplies and devices for protection against infection, diagnostics and treatment for COVID-19 were developed in accordance with the latest available versions of:

- Clinical management of COVID-19 *(2)*
- Clinical care of severe acute respiratory infections – Tool kit *(3)*
- Use of chest imaging in COVID-19 *(4)*
- List of priority medical devices for COVID-19 case management *(5)*
- COVID-19 essential supplies forecasting Tool *(6)*
- Biomedical equipment for COVID-19 case management – inventory tool: Interim guidance *(7)*
- Technical specifications for invasive and non-invasive ventilators for COVID-19 87) *(8)*
- Diagnostic testing for SARS-CoV-2 *(9)*
- Rational use of personal protective equipment for coronavirus disease (COVID-19) and considerations during severe shortages *(10)*.

Oxygen sources and related equipment used for oxygen uptake are covered in the *Biomedical equipment for COVID-19 case management – inventory tool*, another module in the suite of health service capacity assessments in the context of the COVID-19 pandemic *(6).*

Ethical considerations

The guidance provided is not considered research, therefore, there is no need to submit it to the WHO Research Ethics Review Committee (ERC). Individual countries may need local ethics committee approval, depending on local law and guidelines and exactly what is done. They should ensure that they fulfil their ethical obligations submitting the document to the pertinent local ethics boards.

Respondents are asked upfront for their informed consent. The WHO data sharing agreement “Policy on use and sharing of data collected in Member States by the World Health Organization (WHO) outside the context of public health emergencies” specifies arrangement with regards to usage, and dissemination of the data gathered. The agreement is attached as annex 2.

Note for country adaptation

There are four types of adaptation need to be made at the country-level and highlighted in the tool.

- Country-specific question adaptation: A word or phrase in the question must be adapted based on the country context.
- Country-specific response adaptation: Response options must be adapted based on the country context.
- Country-specific ***optional*** question: Exclude it unless both the context and sample design allow intended analysis possible.
- Country-specific ***optional*** response: Exclude it unless the response is relevant for the context and significant for analysis.

Questions in grey background will be recorded by interviewers or will be prefilled based on the sample list.

Questions ending with “i” are for skip patterns. In the electronic tool, these questions will be programmed and will not show on a screen.

Consent

Hello. My name is [interviewer name]. I am calling on behalf of the [Ministry of Health/implementing agency]. [Ministry of Health/implementing agency] is conducting a health facility assessment to assist the government in knowing more about COVID-19 case management capacities during the COVID-19 pandemic in [country]. Your facility was selected to participate in this study. We will be asking you questions about health service capacities. Information collected about your facility during this study may be used by the [Ministry of Health/implementing agency], organizations supporting services in your facility, and researchers, for planning service improvement or for conducting further studies of health services. Neither your name nor the names of any other staff who participate in this study will be included in the dataset or in any report.

We are asking for your help in order to collect this information. You may refuse to answer any question or choose to stop the interview at any time. However, we hope you will answer the questions, which will benefit the services you provide and the nation. If there are questions for which someone else is the most appropriate person to provide the information, we would appreciate if you introduce me to that person to help us collect that information. At this point, do you have any questions about the study? Do I have your agreement to proceed?

No.	Question	Response options
1.A	May I begin the interview?	1. Yes 2. No – STOP. Skip to question 9.4
1.B	Type interviewer name indicating consent obtained	_____

Section 1: Health facility identification and description

The questions in this section are related to the facility identification and description.

No.	Question	Response options		
1.1	Facility code			
1.1.1	(Country-specific question adaptation) Region/province name			
1.1.2	(Country-specific optional question)[a] District/county name			
1.1.3	(Country-specific optional question)[b] Village/clan/locality name			
1.2	Can you confirm your name?			
1.3	Can you confirm the facility name?			
1.4	Where is the facility located?	1. Urban 2. Peri-/ex-urban (country-specific optional response) [c] 3. Rural		
1.5	What is the facility type?	(Country-specific response adaptation: adapt the list based on the country's own health system) 1. Primary care centre/clinic 2. First referral hospital (district hospital) 3. Other general hospital with specialties or single-specialty hospital 4. Long-term care facility 5. Other If other, please specify: _____		
1.6	What is the managing authority of the facility?	(Country-specific response adaptation: adapt the list based on the country's own health system) 1. Government 2. Private for profit 3. Private not for profit (e.g. nongovernmental organization, faith-based) 4. Other		
1.7	What is your position or title in the facility?			
1.8i	Check if the respondent is the facility director/manager. If yes, skip to question 1.10.			
1.8	What is facility director/manager's name?			
1.9	What is facility director/manager's telephone number?			
1.10	Record date	Day:	Month:	Year:

The following questions relate to the services offered in this facility.

No.	Question	Response options	
1.11	Does this facility provide inpatient services?	1. Yes 2. No – skip to question 1.14	
1.12	How many overnight/inpatient beds does the facility have in total, excluding delivery beds?	_____ beds (numeric entry)	
1.13	Of those inpatient beds, how many are intensive care unit (ICU) beds?	_____ ICU beds (numeric entry)	
1.14	Does the facility have the following departments or wards/spaces?	1. Yes	2. No
1.14.1	Dedicated 24-hour staffed emergency unit	☐	☐
1.14.2	Operating room	☐	☐

[a-b] Exclude the question unless the administrative-level is used as sampling strata and/or relevant for analysis.

[c] Exclude the response option unless peri-urban is relevant in the context and significant for analysis.

Section 2: Staffing and incident management support team

The questions in this section relate to staffing in the previous 3 months.

No.	Question	Response options	
2.1	(Country-specific question adaptation: adapt staff list based on the country's own health system) For each of the following occupations, please provide the total number of staff and the number of staff who have been diagnosed with COVID-19 in the previous 3 months.	2.1.1.1 Number of staff	2.1.1.2 Number of staff who have been diagnosed with COVID-19 in the previous 3 months
2.1.1	Medical doctors		
2.1.2	Nursing personnel		
2.1.3	Midwifery personnel		
2.1.4	Other clinical staff (including clinical officers)		
2.1.5	Laboratory workers		
2.1.6	Radiographers		
2.1.7	Pharmacists		
2.1.8	Administrative staff		
2.1.9	Support staff		
2.1.10	Other		
2.2	Have any staff been on leave or absent at any time in the previous 3 months?	1. Yes 2. No – skip to question 2.4	
2.3	Please give the reasons for staff leave or absence in the previous 3 months. ***Do not read response options aloud. Select all applicable answers.***	1. Vacation or personal leave 2. Sick leave – unrelated to COVID-19, including maternity leave 3. Sick leave – related to COVID-19, including preventive quarantine 4. Caring for family members who have COVID-19 5. Government policy on health care workers' reporting for work during an outbreak (country-specific optional response) 6. Limited transportation due to lockdown 7. Lack of personal protective equipment 8. Fear related to COVID-19 9. Fear related to violence targeted at health workers 10. Burnout or mental health issues related to COVID-19 11. Industrial action/strike (country-specific optional response) 12. Other 13. Unknown	

2.4	Has the facility made any changes to the way in which health workers are managed in the previous 3 months specifically because of changes in patient volume or patient type related to COVID-19?	1. Yes 2. No – skip to question 2.6 3. Not applicable, there have been no changes in patient volume or patient type related to COVID-19 – Skip to question 2.6	
2.5	What changes have been made? ***Select yes only if the adjustment is related to changes in patient volume and/or type related to COVID-19***	1. Yes	2. No
2.5.1	Reassigning to different units/responsibilities in the facility	☐	☐
2.5.2	Increasing hours among part-time staff	☐	☐
2.5.3	Increasing overtime hours among full-time staff	☐	☐
2.5.4	Recruiting new staff to support increased patient volumes	☐	☐
2.5.5	Recruiting volunteers to support increased patient volumes	☐	☐
2.5.6	Receiving temporary staff seconded from other facilities	☐	☐
2.5.7	Temporary secondment to a different facility	☐	☐
2.5.8	Layoff or unpaid leave	☐	☐
2.6	Have any staff in the facility received training or support related to COVID-19 in the previous 3 months?	1. Yes 2. No – skip to question 2.8	
2.7	What kind of training or support have they received?	1. Yes	2. No
2.7.1	Training on infection prevention and control (IPC)	☐	☐
2.7.2	Training on proper use of personal protective equipment (PPE)	☐	☐
2.7.3	Training on triage protocols for COVID-19 case management	☐	☐
2.7.4	Training on management of emergency conditions	☐	☐
2.7.5	(Country-specific optional question) Training on provision of remote health care	☐	☐
2.7.6	Mental health and psychosocial support for staff as a group or individual staff as needed	☐	☐
2.7.7	Supportive supervision for IPC	☐	☐
2.7.8	Supportive supervision on proper use of PPE	☐	☐
2.7.9	Supportive supervision for COVID-19 case management	☐	☐
2.8	(Country-specific optional question) What was the date of the latest supervision on any topic? (Specify type of supervision according to the country context.)	MM/YYYY	
2.9	This questions concern the hospital's incident management support team. Has the hospital adopted a protocol or terms of reference for incident management or emergency response that includes a list of	1. Yes 2. No – skip to next section	

	team members, the activities to be conducted or overseen, and criteria for when and how to activate the team?	
2.10	Is the hospital incident management or emergency response support team currently activated?	1. Yes 2. No

Section 3: Case management and bed capacity for COVID-19 patients

These questions concern the capacity to manage patients affected by COVID-19.

No.	Question	Response options
3.1i	Check response in question 1.11. If no, confirm the response. If still confirmed no, skip to next section.	
3.1	In total, how many inpatients with COVID-19 (moderate, severe and critical) does the hospital have the capacity to treat?	_____ (numeric entry)
3.2	Of the total number, how many inpatients with severe COVID-19, not requiring intensive care, does the hospital have the capacity to treat?	_____ (numeric entry)
3.3	Of the total number, how many inpatients with critical COVID-19, requiring intensive care, does the hospital have the capacity to treat?	_____ (numeric entry)
3.4	Referring to this morning, how many patients with a suspected or confirmed COVID-19 diagnosis spent last night in the hospital?	_____ (numeric entry)
3.5	Referring to yesterday morning, how many patients with a suspected or confirmed COVID-19 diagnosis had spent the previous night in the hospital?	_____ (numeric entry)
3.6	Of the total number of inpatient beds, how many are currently ready for use as respiratory isolation beds?	_____ beds (numeric entry)
3.7	If needed, how many additional inpatient beds could be converted or added for use as respiratory isolation beds?	_____ beds (numeric entry)
3.8	If needed, how many additional inpatient beds could be converted or added for use as ICU beds?	_____ beds (numeric entry)
3.9	Referring to this morning, in total how many patients spent last night in the hospital?	_____ (numeric entry)
3.10	Referring to the previous full month, each night on average, how many patients in total had spent a night in the hospital?	_____ (numeric entry)

Section 4: Selected medicines and supplies for COVID-19 case management

The questions in this section concern the availability of selected medicines and medical supplies.

	Question	Response options		
4.1	Please indicate whether the following medicines are **currently available**.[a] (Country specific question adaptation: The list of medicines may be adapted taking into account the country's essential medicines list.)	1. Currently available	2. Currently unavailable	3. Not applicable – never available
4.1.1	Chlorhexidine + cetrimide (solution)	☐	☐	☐
4.1.2	Chlorine High Test Hypochlorite (HTH) 70%	☐	☐	☐
4.1.3	Epinephrine or noradrenaline (injectable)	☐	☐	☐
4.1.4	Ceftriaxone (injectable)	☐	☐	☐
4.1.5	Ampicillin (injectable)	☐	☐	☐
4.1.6	Azithromycin (for oral administration)	☐	☐	☐
4.1.7	Rocuronium (injectable) or other neuromuscular blocker	☐	☐	☐
4.1.8	Haloperidol (injectable)	☐	☐	☐
4.1.9	Morphine (injectable) or other opiate	☐	☐	☐
4.1.10	Paracetamol (for oral administration)	☐	☐	☐
4.1.11	Hydrocortisone or dexamethasone (injectable)	☐	☐	☐
4.1.12	Heparin (injectable)	☐	☐	☐
4.1.13	Intravenous fluids: normal saline or Ringer's lactate	☐	☐	☐
4.1.14	Oxygen	☐	☐	☐
4.2	Please indicate whether the following are **currently available**:	1. Currently available	2. Currently unavailable	3. Not applicable – never available
4.2.1	Syringes and needles	☐	☐	☐

4.2.2	Intravenous cannulas and giving sets	☐	☐	☐
4.2.3	Gauze	☐	☐	☐
4.3	(Country-specific optional question) [b] Does this facility participate in the "Solidarity" clinical trial?	1. Yes 2. No – skip to next section 3. Don't know – skip to next section		
4.4	(Country-specific optional question) [c] Please indicate whether each of the following medicines is currently available (Country specific question adaptation: The list of medicines may be adapted to country-specific medicines as per trial protocol).	1. Currently available	2. Currently unavailable	3. Not applicable – never available
4.4.1	Remdesivir (injection)	☐	☐	☐
4.4.2	Interferon beta-1a (injection)	☐	☐	☐

[a] The drugs are a selection of the most relevant medicine groups for clinical management of COVID-19 as per interim guidance: *COVID-19 Essential supplies forecasting tool (6)* and *Clinical care of severe acute respiratory infections – Tool kit: Interim guidance (10);* where specified, first-line treatment choice was selected.

[b-c] Exclude unless the "Solidarity" clinical trial for COVID-19 treatment is conducted widely among the COVID-19 case management hospitals in the country.

Section 5: Personal protective equipment and infection prevention and control

The questions in this section concern infection prevention and control (IPC) and personal protective equipment (PPE) during the COVID-19 pandemic.

No.	Question	Response options	
5.1	Is there a designated IPC focal point person in the facility?	1. Yes 2. No	
5.2	Has the facility implemented any measures to create a COVID-19 safe environment?	1. Yes 2. No – skip to question 5.4	
5.3	Which of the following measures have been implemented in this facility?	1. Yes	2. No
5.3.1	Screening of all patients and visitors at a dedicated entrance	☐	☐
5.3.2	Designated staff entrance for screening	☐	☐
5.3.3	COVID-19 suspected patient consultation takes place in a separate room	☐	☐
5.3.4	Triage system that isolates COVID-19 suspects and confirmed cases	☐	☐
5.3.5	COVID-19 isolation areas clearly identified and divided from non-COVID-19 areas	☐	☐
5.3.6	(Country-specific question adaptation)[a] Screening and triage of patients for suspected COVID-19 using up-to-date guidelines	☐	☐
5.3.7	Distancing of at least 1 metre between patients and visitors in waiting rooms and wards	☐	☐
5.3.8	Displaying instructions on hand and respiratory hygiene practices for patients and visitors	☐	☐
5.3.9	Hand hygiene stations at all points of care	☐	☐
5.3.10	Use of PPE by staff	☐	☐
5.3.11	Environment cleaning and disinfection	☐	☐
5.4	Does the facility have IPC guidelines for COVID-19?	1. Yes 2. No – skip to question 5.6	

5.5	Which of the following IPC guidelines exist?	1. Yes	2. No
5.5.1	Screening for signs and symptoms of COVID-19	☐	☐
5.5.2	Management of suspected/confirmed COVID-19 cases	☐	☐
5.5.3	PPE	☐	☐
5.5.4	COVID-19 surveillance among health workers	☐	☐
5.5.5	Management of dead bodies	☐	☐
5.5.6	Waste management	☐	☐

5.6	Does this facility usually provide PPE to health workers?	1. Yes 2. No – skip to question 5.8

5.7	Are the following items **currently available** for each of the staff who are required to use them in accordance with the applicable guidelines?	1. Currently available for all health workers	2. Currently available only for some health workers	3. Currently unavailable for any health workers	4. Not applicable – never procured or provided
5.7.1	Protective gown	☐	☐	☐	☐
5.7.2	Examination gloves	☐	☐	☐	☐
5.7.3	Protective goggles	☐	☐	☐	☐
5.7.4	Face shield	☐	☐	☐	☐
5.7.5	Respirator masks (N95 or FFP2)	☐	☐	☐	☐
5.7.6	Medical/surgical mask	☐	☐	☐	☐

5.8	Does the facility disposes used PPE safely according to the IPC guidelines?	1. Yes 2. No 3. I do not know

5.9	Please indicate whether each of the following infection prevention and control items or equipment is **currently available**:	1. Currently available	2. Currently unavailable	3. Not applicable – never procured or provided
5.9.1	Liquid soap	☐	☐	☐
5.9.2	Hand sanitizer	☐	☐	☐
5.9.3	Biohazard bags	☐	☐	☐

5.9.4	Safety boxes	☐	☐	☐
5.9.5	Body bags	☐	☐	☐

N95: not resistant to oil, 95% filter; FFP2: filtering face piece with minimum of 94% filtration percentage and maximum 8% leakage to the inside.

[a] provide specific name or version number of guidelines

Section 6: COVID-19 laboratory diagnostics

The questions in this section concern laboratory diagnostics in this facility.

No.	Questions	Response options		
6.1	Does the facility collect specimens from patients to diagnose COVID-19?	1. Yes 2. No – Skip to next section		
6.2	Please indicate whether each of the following items for specimen collection is currently available:	1. Currently available	2. Currently unavailable	3. Not applicable – never available
6.2.1	Triple packaging boxes for transport	☐	☐	☐
6.2.2	Viral transport medium with swab	☐	☐	☐
6.3	Does the facility perform the following test on-site to diagnose COVID-19?	1. Yes	2. No	
6.3.1	PCR tests	☐	☐	
6.3.2	Antigen-detecting rapid diagnostic tests (Ag-RDTs)	☐	☐	
6.4i	Check responses in 6.3.1. If yes, proceed. If no, skip to question 6.8i.			
6.4	You mentioned the facility performs PCR tests. Is the PCR thermocycler to diagnose COVID-19 functional? **If there is more than one, select "Yes, functional" if at least one is functional**	1. Yes, functional – Skip to question 6.6 2. No, not functional		
6.5	Why is the thermocycler non-functional? **Select all applicable answers**	1. Not installed yet/no training in its use 2. No reagents to process specimens 3. No consumables and/or accessories (cables, sensors, batteries) 4. No staff, training or tools to repair it in-house 5. No funds for external maintenance/spare parts 6. No power source 7. Other, please specify_____		
6.6	How many results of diagnostic PCR tests for COVID-19 does the facility typically process in a single day?	_____ tests (numeric entry) (Don't know = −99)		

6.7	What is the maximum number of results of diagnostic PCR tests for COVID-19 that the facility's laboratory can process in a single day?	_____ tests (numeric entry) (Don't know = −99)	
6.8i	Check responses in 6.3.2. If yes, proceed. If no, skip to question 6.11i.		
6.8	You mentioned the facility performs antigen-detecting rapid diagnostic tests. Please indicate the following items are currently available	1. Currently available	2. Currently unavailable
6.8.1	Ag-RDT test kits	☐	☐
6.8.2	Ag-RDT control material	☐	☐
6.9	How many results of diagnostic Ag-RDT tests for COVID-19 does the facility typically process in a single day?	_____ tests (numeric entry) (Don't know = −99)	
6.10	What is the maximum number of results of diagnostic Ag-RDT tests for COVID-19 that the facility's laboratory can process in a single day?	_____ tests (numeric entry) (Don't know = −99)	
6.11i	Check responses in 6.3.1 and 6.3.2. If yes in either question, proceed to question 6.11. If no in both questions, skip to question 6.12.		
6.11	To dispose specimen collection or test waste, does the facility use biohazard waste disposal supplies such as infectious waste bags?	1. Yes 2. No After completing question 6.11, skip to the next section.	
6.12	Is there a functioning specimen transport system for forwarding specimens from the facility to a referral laboratory?	1. Yes 2. No	
6.13	What is the typical turnaround time for test results, i.e. the time between sample collection at the facility and receiving the result from the referral laboratory?	1. Less than 24 hours 2. 24–47 hours (1–2 days) 3. 48–71 hours (2–3 days) 4. 3-6 days 5. 7 days or longer	

[a] PCR: polymerase chain reaction.

Section 7: Medical equipment for diagnosis, patient monitoring and case management

This section contains questions about medical equipment.

Only capital equipment is listed, although consumables and accessories are indispensable for management of patients. For more information see the List of priority medical devices for COVID-19 case management *(5)*.

No.	Questions	Response options	
7.1	How many units of the following types of equipment are available onsite at any location in this facility and how many of them are currently functional?	Total number equipment available	Total number of functional equipment
7.1.1	X-ray	_____ (numeric entry)	_____ (numeric entry)
7.1.2	Pulse oximeters (table-top, portable handheld pulse oximeter or self-contained fingertip oximeter)	_____ (numeric entry)	_____ (numeric entry)
7.1.3	Ventilator for intensive care unit (adult or paediatric)	_____ (numeric entry)	_____ (numeric entry)
7.1.4	Non-invasive ventilator such as continuous positive airway pressure (CPAP), bilevel positive airway pressure (BiPAP) and high flow nasal cannula (HFNC)	_____ (numeric entry)	_____ (numeric entry)
7.2i	Check if the total number of available equipment is same with the total number of functional equipment in questions 7.1.3. If so, skip to question 7.3i,		
7.2	Why is the ventilator for the intensive care unit non-functional? **Select all applicable answers**	1. Not installed yet/no training in its use 2. No consumables and/or accessories (cables, sensors, batteries) 3. No staff, training or tools to repair in-house 4. No funds for external maintenance/spare parts 5. No power source 6. Other, please specify_____	
7.3i	Check if the total number of available equipment is same with the total number of functional equipment in questions 7.1.4. If so, skip to question 7.4i,		

No.	Questions	Response options	
7.3	Why is the non-invasive ventilator non-functional? **Select all applicable answers**	1. Not installed yet/no training in its use 2. No consumables and/or accessories (cables, sensors, batteries) 3. No staff, training or tools to repair in-house 4. No funds for external maintenance/ spare parts 5. No power source 6. Other, please specify_____	
7.4	Please indicate sources of medical oxygen for the facility:	1. Yes	2. No
7.4.1	Oxygen concentrator	☐	☐
7.4.2	External supply - bulk	☐	☐
7.4.3	External supply - oxygen cylinders	☐	☐
7.4.4	Liquid or pressure swing adsorption (PSA) oxygen generator plant	☐	☐
7.5	Does the facility currently have piped oxygen distribution to terminal bedside wall units?	1. Yes 2. No	
7.6	Does the facility currently have a portable medical gas cylinder for oxygen, which is fitted with a valve, a pressure and flow regulator?	1. Yes 2. No	

Section 8: General vaccine readiness

This section contains questions on capacity to provide general immunization services.

No.	Questions	Response options
8.1	Does this facility offer any immunization services for children?	1. Yes 2. No
8.2	Does this facility offer any immunization services for adults?	1. Yes 2. No
8.3i	Check responses to questions 8.1 and 8.2. If the answers to both are "No", skip to next section.	
8.3	Does the facility currently have a vaccine fridge? If yes, is it functional? **If there is more than one vaccine fridge, select "yes, functional" if at least one is functional.**	1. Yes, functional 2. Yes, but not functional 3. No – skip to Question 8.5
8.4	Does the facility currently have a continuous temperature recorder/logger? If yes, is it functional? **If there is more than one, select "yes, functional" if at least one is functional.**	1. Yes, functional 2. Yes, but not functional 3. No
8.5	Does the facility currently have any cold boxes?	1. Yes 2. No – skip to Question 8.8
8.6	How many cold boxes does the facility have?	_____ cold boxes (numeric entry)
8.7	Does the facility have a full set of ice packs for each of the cold boxes?	1. Yes, a set of ice packs for all cold boxes 2. Yes, a set of ice packs only for some cold boxes 3. No
8.8	Does the facility currently have any vaccine carriers?	1. Yes 2. No – skip to Question 8.11i
8.9	How many vaccine carriers does the facility have?	_____ vaccine carrier (numeric entry)
8.10	Does the facility have a full set of ice packs for each of the vaccine carriers?	1. Yes, a set of ice packs for all carriers 2. Yes, a set of ice packs only for some carriers 3. No

No.	Questions	Response options
8.11i	Check the responses to questions 8.5 and 8.8. If the answers to both are “No”, skip to question 8.12. Check the responses to questions 8.7 and 8.10. If the answers to both are “No”, skip to question 8.12.	
8.11	In a single day, how many ice packs for cold boxes and/or vaccines carriers can the facility freeze?	1. All ice packs in the facility 2. Only some of the ice packs in the facility 3. None – no functional freezer
8.12	Does the facility have sharps containers (“safety boxes”)?	1. Yes 2. No
8.13	Does the facility have an adverse events following immunization treatment kit (“AEFI kit”)?	1. Yes 2. No
8.14	(Country-specific question adaptation)[a] Does the facility have a system in place to report vaccine-associated adverse events to the national pharmacovigilance centre?	1. Yes 2. No

[a] Replace ‘the national pharmacovigilance center’ with a specific name of the center in the country. If there is no designated national pharmacovigilance center in the country, exclude this question.

Section 9. COVID-19 vaccine readiness

This section contains questions on capacity to provide COVID-19 immunization services.

Note for country adaptation: This section will be included in settings where COVID-19 vaccines are being distributed. If this section is included, do not use the Section 8. General vaccine readiness.

No.	Questions	Response options		
9.1	Does the facility currently have a vaccine fridge? If yes, is it functional? **If there is more than one vaccine fridge, select "yes, functional" if at least one is functional.**	1. Yes, functional 2. Yes, but not functional 3. No – skip to Question 9.3		
9.2	Does the facility currently have a continuous temperature recorder/logger? If yes, is it functional? **If there is more than one, select "yes, functional" if at least one is functional.**	1. Yes, functional 2. Yes, but not functional 3. No		
9.3	Does this facility offer COVID-19 vaccine?	1. Yes 2. No – Skip to next section		
9.4	(Country-specific question adaptation)[a] Please indicate whether each of the following vaccine is provided and **currently available**:	1. Yes provided and currently available	2. Yes provided but currently unavailable	3. Not provided
9.4.1	Pfizer-BioNTech COVID-19 Vaccine	☐	☐	☐
9.4.2	Moderna COVID-19 Vaccine	☐	☐	☐
9.4.3	AstraZeneca/Oxford COVID-19 vaccine	☐	☐	☐
9.4.4	Janssen/Johnson & Johnson COVID-19 vaccine	☐	☐	☐
9.5	Has staff received training on the following topics regarding the COVID-19 vaccine provided at the facility?	1. Yes	2. No	
9.5.1	Storage of the vaccine	☐	☐	
9.5.2	Administration of the vaccine	☐	☐	
9.5.3	Management of the adverse events, including anaphylactic shock	☐	☐	
9.5.4	Reporting adverse events	☐	☐	

9.6	Does the facility have sufficient syringes for the COVID-19 vaccine provided in the facility?	1. Yes 2. No
9.7	Does the facility have sharps containers (“safety boxes”)?	1. Yes 2. No
9.8	Does the cold storage for COVID-19 vaccine currently remain in the recommended temperature range?	1. Yes 2. No
9.9	In the past week, did the cold storage for COVID-19 vaccine always remain in the recommended temperature range?	1. Yes 2. No
9.10i	(Country-specific question)[b] Check answer in questions 9.4.1 – 9.4.3. If “No” in all three questions, skip to question 9.11.	
9.10	(Country-specific question)[b] Are vaccine recipients informed when to return for their next vaccination?	1. Yes 2. No
9.11	Are vaccine recipients informed of side effects?	1. Yes 2. No
9.12	Are vaccine recipients informed of what to do in case of adverse events following immunization?	1. Yes 2. No
9.13	Does the facility have an adverse events following immunization treatment kit (“AEFI kit”)?	3. Yes 4. No
9.14	(Country-specific question adaptation)[c] Does the facility have a system in place to report vaccine-associated adverse events to the national pharmacovigilance centre?	1. Yes 2. No

[a] For sub-questions, provide COVID-19 vaccines that have been approved and distributed in the country.
[b] Exclude this question if only single-dose vaccine is available.
[c] Replace ‘the national pharmacovigilance center’ with a specific name of the center in the country. If there is no designated national pharmacovigilance center in the country, exclude this question.

Section 10. Interview result

No	Question	Response options
10.1	Thank you for responding to the interview. We would like to speak with you again in the future. Do you have a better number we can use to reach you in case we follow up with you in the future?	1. Yes 2. No, the current number is the best – Skip to question 10.4
10.2	What is the alternative number?	
10.3	Can you repeat the number?	
10.4	Record the result of the interview.	1. Completed 2. Postponed 3. Partly completed and postponed 4. Partly completed 5. Refused 6. Other

If you have any queries or questions regarding this questionnaire, please contact us at EHSmonitoring@who.int

References

1. Suite of health service capacity assessments in the context of the COVID-19 pandemic [website]. Geneva: World Health Organization; 2020 (https://www.who.int/teams/integrated-health-services/monitoring-health-services, accessed 18 August 2020).

2. Clinical management of COVID-19: Interim guidance. Geneva: World Health Organization; 2020 (https://www.who.int/publications/i/item/clinical-management-of-COVID-19, accessed 14 July 2020).

3. Clinical care of severe acute respiratory infections – Tool kit: Interim guidance. Geneva: World Health Organization; 2020 (https://www.who.int/publications/i/item/clinical-care-of-severe-acute-respiratory-infections-tool-kit, accessed 14 July 2020).

4. Use of chest imaging in COVID-19. Geneva: World Health Organization; 2020 (https://apps.who.int/iris/rest/bitstreams/1280128/retrieve, accessed 14 July 2020).

5. List of priority medical devices for COVID-19 case management. Geneva: World Health Organization; 2020 (https://www.who.int/publications/m/item/list-of-priority-medical-devices-for-COVID-19-case-management, accessed 14 July 2020).

6. COVID-19 Essential Supplies Forecasting Tool. Geneva: World Health Organization; 2020 (https://www.who.int/publications/m/item/COVID-19-essential-supplies-forecasting-tool, accessed 14 July 2020).

7. Biomedical equipment for COVID-19 case management – inventory tool: Interim guidance. Geneva: World Health Organization; 2020 (https://www.who.int/publications/i/item/WHO-2019-nCov-biomedical-equipment-inventory-2020.1, accessed 14 July 2020).

8. Technical specifications for invasive and non-invasive ventilators for COVID-19. Geneva: World Health Organization; 2020 (https://apps.who.int/iris/bitstream/handle/10665/331792/WHO-2019-nCoV-Clinical-Ventilator_Specs-2020.1-eng.pdf, accessed 28 September 2020).

9. Diagnostic testing for SARS-CoV-2. Interim guidance. Geneva: World Health Organization; 2020 (https://www.who.int/publications/i/item/diagnostic-testing-for-sars-cov-2, accessed 28 September 2020).

10. Rational use of personal protective equipment for coronavirus disease (COVID-19) and considerations during severe shortages. Interim guidance. Geneva: World Health Organization; 2020 (https://www.who.int/publications/i/item/rational-use-of-personal-protective-equipment-for-coronavirus-disease-(COVID-19)-and-considerations-during-severe-shortages, accessed 28 September 2020).

Useful links

11. Medical devices [website] (https://www.who.int/medical_devices/priority/COVID-19_medequipment/en/,accessed 14 July 2020).

12. Country & Technical Guidance – Coronavirus disease (COVID-19) [website] (https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance-publications?publicationtypes=f00acf42-71d5-45c3-a9ba-62e1fda92a4c, accessed 14 July 2020).

13. SurveyCTO [website] (https://o2therapy.surveycto.com/collect/who_covid_oxygen_therapy_scto_open?caseid= accessed 14 July 2020).

Annex 1. Suite of health service capacity assessments in the context of the COVID-19 pandemic

On 30 January 2020, the Director-General of the World Health Organization (WHO), declared the COVID-19 outbreak to be a global public health emergency of international concern under the International Health Regulations. Following the spread of COVID-19 cases in many countries across continents, COVID-19 was characterized as a pandemic on 11 March 2020 by the Director-General, upon the advice of the International Health Regulations Emergency Committee.

In response to this situation, the Suite of health service capacity assessments in the context of the COVID-19 pandemic has been developed to support rapid and accurate assessments of the current, surge and future capacities of health facilities throughout the different phases of the COVID-19 pandemic. *(1)* The suite consists of two sets of modules that can be used to inform the prioritization of actions and decision-making at health facility, subnational and national levels:

1. **Hospital readiness and case management capacity for COVID-19**
   This set of modules can be used to assess health facility readiness and case management capacities for COVID-19.
2. **Continuity of essential health services in the context of the COVID-19 pandemic**
   This set of modules can be used to assess health facility capacities to maintain delivery of essential health services. It can also be used to assess community needs and access to services during the COVID-19 outbreak.

The modules are listed in Table 1.

Table 1. Suite of health service capacity assessment modules

Hospital readiness and case management capacity for COVID-19	
Module	**Purpose**
Rapid hospital readiness checklist	To assess the overall readiness of hospitals and to identify a set of priority actions to prepare for, be ready for and respond to COVID-19
COVID-19 case management capacities: diagnostics, therapeutics, vaccine readiness, and other health products	To assess present and surge capacities for the treatment of COVID-19 in health facilities with a focus on availability of diagnostics, therapeutics and other health products as well as vaccine readiness, availability of beds and space capacities
Biomedical equipment for COVID-19 case management – inventory tool	To conduct a facility inventory of biomedical equipment re-allocation, procurement and planning measures for COVID-19 case management
Ensuring a safe environment for patients and staff in COVID-19 health-care facilities	To assess the structural capacities of hospitals to allow safe COVID-19 case management, maintain the delivery of essential services and enable surge capacity planning
Infection prevention and control health-care facility response for COVID-19	To assess infection prevention and control capacities to respond to COVID-19 in health facilities

Continuity of essential health services in the context of the COVID-19 pandemic	
Module	**Purpose**
Continuity of essential health services: Facility assessment tool	• To assess the capacity of health facilities to maintain the provision of essential health services during the COVID-19 outbreak • To assess workforce capacity during the outbreak, including availability, absences, COVID-19 infections, support and training
Continuity of essential health services: Community demand side tool	To conduct a rapid pulse survey on community needs and perceptions around access to essential health services and community resilience during the COVID-19 outbreak

Countries may select different combinations of modules according to context and the need for one-time or recurrent use throughout the pandemic.

Annex 2. Data Sharing

Policy on use and sharing of data collected in Member States by the World Health Organization (WHO) outside the context of public health emergencies

Data are the basis for all sound public health actions and the benefits of data sharing are widely recognized, including scientific and public health benefits. Whenever possible, WHO wishes to promote the sharing of health data, including but not restricted to surveillance and epidemiological data.

In this connection, and without prejudice to information sharing and publication pursuant to legally binding instruments, by providing data to WHO, the Ministry of Health of your Country confirms that all data to be supplied to WHO have been collected in accordance with applicable national laws, including data protection laws aimed at protecting the confidentiality of identifiable persons;

Agrees that WHO shall be entitled, subject always to measures to ensure the ethical and secure use of the data, and subject always to an appropriate acknowledgement of your Country:

- to publish the data, stripped of any personal identifiers (such data without personal identifiers being hereinafter referred to as “the Data”) and make the Data available to any interested party on request (to the extent they have not, or not yet, been published by WHO) on terms that allow non-commercial, not-for-profit use of the Data for public health purposes (provided always that publication of the Data shall remain under the control of WHO);

- to use, compile, aggregate, evaluate and analyse the Data and publish and disseminate the results thereof in conjunction with WHO’s work and in accordance with the Organization’s policies and practices.

- Except where data sharing and publication is required under legally binding instruments (IHR, WHO Nomenclature Regulations 1967, etc.), the Ministry of Health of your Country may in respect of certain data opt out of (any part of) the above, by notifying WHO thereof, provided that any such notification shall clearly identify the data in question and clearly indicate the scope of the opt-out (in reference to the above), and provided that specific reasons shall be given for the opt out.