

# COVID-19 Secondary Care Hospital Preparedness Checklist

Version 5: 22 April 2020

Evaluation date	/ / (DD/MM/YY)	
Name(s) of evaluator		
Name(s), position(s), and contact info of the people interviewed		
<b>HEALTHCARE FACILITY INFORMATION</b>		
Name of facility		
Location of facility	Town Coordinates	
Region/Province		
District		
Approximate size of the catchment population the facility serves		
Type of facility	Referral hospital District hospital	
Managing authority	Government / public NGO/not-for-profit Private-for-profit Mission/faith-based Other (please specify)	
Setting (please circle)	Rural / Peri-urban / Urban	
Laboratory with capability to diagnose COVID-19	YES / NO	
Name and location of nearest reference laboratory		
Number of consultation rooms		
Number of inpatient beds	Total number of beds Critical care beds <sup>1</sup>	
Number of staff	Doctors (all specialisms)	
	Nurses	
	Midwives	

<sup>1</sup> “Critical care bed” here refers to beds for which there is capacity to provide oxygen to patients (i.e. including via nasal prongs, low-flow masks, high-flow masks, rebreathing or anaesthetic type oxygen masks and non-invasive assisted ventilation methods like continuous positive airway pressure masks).

Number of staff (continued)	Paramedics	
	Healthcare assistants	
	Laboratory technicians	
	Pharmacists	
	Community health workers	
	Other, specify	
Total number of general outpatient consultations in last 3 months	Month 1: Month 2: Month 3:	Monthly average:
Total number of inpatient admissions in the last 3 months	Month 1: Month 2: Month 3:	Monthly average:
Average length of stay for hospitalised patients	Average length of stay for elective admissions (days):  Average length of stay for emergency admission (days):	

	Completed	Partially completed	Not completed
<b>1: PLANNING AND DECISION-MAKING</b>			
There is a hospital emergency response plan for COVID-19			
Set up and activate a hospital incident management group (IMG) <sup>2</sup>			
Identify a designated lead for each domain in this checklist			
Circulate a list of domain leads and their details to staff (or display this in a visible area in the facility)			
Identify deputies for each domain			
Develop a surveillance protocol for identifying, monitoring and reporting COVID-19 cases (suspected OR confirmed) among patients, staff and volunteers at the hospital			
Identify a data focal point to ensure surveillance data are reported to national/coordinating levels in a timely way, and liaise with public health authorities			
Implement hospital-based contact tracing for every confirmed case in hospitals <sup>3</sup>			
	Completed	Partially completed	Not completed
<b>2: COMMUNICATION</b>			
Appoint a spokesperson to liaise with health authorities, the public and other significant local actors			
Draft key messages for key external audiences (patients, staff, public), or adapt national communications materials where these are available			
Brief hospital staff on roles and responsibilities within the emergency response plan			
Identify key external public health points of contact during a COVID-19 outbreak			
Plan in place to test key lines of communication (phones etc) to ensure they are working on a weekly basis			
	Completed	Partially completed	Not completed
<b>3: SAFETY AND SECURITY</b>			
Appoint a hospital security team			
Establish control of access points to the facility			
Develop clear method for identifying authorised hospital personnel, patients and visitors			
	Completed	Partially completed	Not completed
<b>4: TRIAGE AND CASE MANAGEMENT</b>			
Designate an experienced triage officer/health worker to oversee triage operations			

<sup>2</sup> If there are no known COVID-19 in the locality at the time the IMG is established it should be held in readiness mode to respond when first cases emerge.

<sup>3</sup> Contact tracing involves identifying all individuals likely to have been in contact with the case, contacting them to explain what they should do, and follow-up to monitor for development of symptoms.

Designate a single, dedicated triage area for receiving patients and screening for COVID-19 symptoms (this should be in close proximity to key hospital facilities e.g. the emergency department) <sup>4</sup>			
Establish a triage protocol, with a mechanism for labelling patients (triage tags) and early isolation for suspected cases of COVID-19			
Establish a COVID-19 diagnosis and management algorithm, or adapt national guidance (where this exists) to the local service context			
Communicate triage and admission criteria to staff involved in assessment care of suspected COVID-19 cases			
Designate defined areas for clinical management of suspected or confirmed COVID-19 cases, with appropriate signage and equipment			
Designate defined high dependency/critical care areas for clinical management of suspected or confirmed COVID-19 cases who need specialist respiratory support <sup>5</sup> , with appropriate signage and equipment			
Specify and test procedures for safe transfer within the facility of patients with suspected or confirmed COVID-19 from triage areas to areas where definitive clinical management will be delivered <sup>4</sup>			
	Completed	Partially completed	Not completed
<b>5: SURGE CAPACITY</b>			
Calculate the maximum care capacity of the hospital based on the total number of beds, available staff and accessory resources, and length of hospital stay			
Identify methods for expanding inpatient bed capacity to accommodate additional cases if this becomes necessary			
Designate defined patient overflow areas in the facility			
Develop adapted admission and discharge criteria for periods when demand for hospital services is highest			
Designate an area for use as temporary morgue and ensure adequate supply of body bags (or equivalent)			
Formulate a plan for post-mortem care and management to reduce the risk of transmission			
Develop bereavement counselling/support guidelines in consultation with local community/religious leaders			
	Completed	Partially completed	Not completed
<b>6: INFECTION PREVENTION AND CONTROL (IPC)</b>			
Identify a trained IPC focal point to oversee IPC provision, training and monitoring			
Ensure all healthcare workers, ancillary staff (e.g. cleaners, porters), patients and visitors are aware of respiratory and hand hygiene measures <sup>6</sup>			
Ensure access to:			
(i) Safe and sufficient supplies of water for all IPC measures, clinical procedures and for drinking;			

<sup>4</sup> Guidance on appropriate organisation and management of facilities to support triage and minimise the risk of infection from cases of severe acute respiratory infection (SARI) is available from WHO [here](#).

<sup>5</sup> This could encompass anything from low-flow oxygen delivery via nasal prongs in a regular ward setting, through high-flow oxygen delivery, to invasive mechanical ventilation in an intensive care setting.

<sup>6</sup> Guidance on appropriate IPC measures including respiratory and hand hygiene measures are given by WHO [here](#).

(ii)	Minimum of two functional, improved sanitation facilities for outpatient wards, and 1 per 20 beds for inpatient wards;			
(iii)	Functional hand hygiene facilities at points of care, toilets and service areas;			
(iv)	Appropriately labelled bins for safe management of clinical waste, and facilities for safe disposal			
Ensure appropriate distancing as follows:				
(i)	At least 1.5 m distance between beds regardless of whether patients have suspected COVID-19 or not			
(ii)	No more than 1 patient per bed space;			
(iii)	Access to either single isolation room(s) or at a minimum one ward for safe cohorting of patients with suspected COVID-19			
Ensure, for appropriate cleaning and decontamination that:				
(i)	Surfaces with which suspected COVID-19 patients are in contact are routinely cleaned and disinfected;			
(ii)	There is a dedicated area/facility for performing decontamination of medical devices.			
Ensure there is a dedicated team of healthcare workers to care for suspected or confirmed positive COVID-19 cases.				
Ensure adequate supply of personal protective equipment (PPE) to staff, prioritising those providing care to suspected or confirmed COVID-19 cases <sup>7</sup> .				
Limit visitors to those essential for patient support <sup>8</sup> and ensure those that do apply droplet and contact precautions.				
Record (name and contacts) maintained of all persons (staff, visitors) entering COVID-19 patient wards or rooms.				
		Completed	Partially completed	Not completed

7: CONTINUITY OF ESSENTIAL SERVICES				
A list of all current hospital services in order of priority is available to:				
	Identify those that need to be maintained at all times			
	Identify (“non-essential”) services that could potentially be stopped or outsourced to alternative treatment sites <sup>9</sup>			
	Identify minimum set of resources required to maintain essential services			
	Coordinate with neighbouring hospitals and health facilities to define the responsibilities of each in maintaining essential service delivery during peak demand			
	Catalogue stocks of essential medicines and ensure adequacy to meet clinical service needs			
	Identify backup supplies of water, power, oxygen and other essential lifelines			

<sup>7</sup> Guidance on rational use of PPE and definitions of adequate allocation to staff are given by WHO [here](#).

<sup>8</sup> Functions that are “essential for patient support” will depend on the nature of the facility and other factors including the availability of nursing staff.

<sup>9</sup> This item should be reviewed according to the context in which the checklist is being used. In some countries, hospital management may have discretion to make decisions on de-prioritisation of services; in others decisions of this nature may be coordinated at regional or even national level.

Make backup plans to anticipate potential effects on supplies of food and water to the hospital			
Ensure contingency plans for disposal of human and hazardous waste			
	Completed	Partially completed	Not completed
<b>8: HUMAN RESOURCES</b>			
Develop and implement training materials for staff spanning:			
(i) Respiratory and hand hygiene;			
(ii) Appropriate circumstances for use of PPE, and how to don/doff materials;			
(iii) Triage procedures;			
(iv) How to safely take and handle biological samples (with appropriate biosafety measures)			
(v) How to safely transport biological samples (e.g. to reference laboratory)			
(vi) Facility organisation, placement and movement of patients			
Ensure staff who would likely need to use PPE have received training to understand when it is needed, and how to put it on/remove it			
Cross-train providers in likely high demand services (triage, emergency medical care)			
Provide additional training in areas/specialties of likely high additional demand to help impact absorption			
Implement daily staff presence list (to assist with contact tracing in the event of infection)			
Develop and implement a staff rota to ensure safe staffing levels and help identify when to request additional staff and volunteers			
Develop and issue a guidance note for all staff and volunteers on steps to take if they or any other member of their household develops COVID-19 symptoms <sup>10</sup>			
	Completed	Partially completed	Not completed
<b>9: LOGISTICS AND SUPPLY CHAIN MANAGEMENT</b>			
Using the guidance in Annex 1, identify the types and numbers of all required equipment and consumables to support care for COVID-19 patients, by ward, and including the triage area			
Develop and maintain an inventory of all equipment, supplies and pharmaceuticals, and assess quality of contingency items (focusing on PPE, disinfection materials, materials for respiratory and hand hygiene)			
Establish, or update a stock shortage-alert mechanism			
Estimate likely consumption of key consumables under different caseload scenarios <sup>11</sup>			
Consult with regional/provincial authorities to ensure continuous supply of essential materials			

<sup>10</sup> WHO has produced [occupational health guidance](#) for healthcare professionals involved in management of COVID-19 patients, and [summarised steps all individuals should take](#) if they develop symptoms suggestive of COVID infection.

<sup>11</sup> The WHO [COVID-19 Critical Items List](#) specifies key consumables for management of suspected or confirmed COVID-19 patient. The WHO [Essential Supplies Forecasting Tool \(ESFT\)](#) provides guidance on how to estimate likely critical item needs during a COVID-19 outbreak (see Annex 1 below for further detail on how to use this tool in your facility).

Establish contingency agreements with local vendors for key supplies to ensure prompt delivery if/when exhausted in the context of an outbreak			
Identify physical space within the hospital for storage and stockpiling of essential supplies (considering ease of access, temperature, ventilation etc)			
Laboratory capacity:			
(i) Establish whether the facility has laboratory capacity			
(ii) If there is no facility for testing patient samples on-site, identify a laboratory to which samples can be sent			
(iii) Establish plan for safe shipment of samples to the nearest referral laboratory for testing			
(iv) Establish a clear results communication plan with the referral lab to reduce the turn around time for test results			
(v) Establish a sample tracking mechanism to monitor the efficacy of sample shipment, processing and reporting of results			
	Completed	Partially completed	Not completed
<b>10: RECOVERY</b>			
Establish essential criteria for determining when to demobilise, and the process for drawing down			
Compile a post-action report covering incident summary, an assessment of the response, expenses, and early recommendations to bolster services			
Carry out a debriefing for staff 24-72 hours after the final case to assist with coping and recovery			

**COMMENTS: Please enter any additional notes on any of the sections above, here.**

## ACKNOWLEDGEMENTS

This tool was lead by:

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## ANNEX 1: GUIDANCE NOTES

This tool comprises two elements:

- The secondary care facility checklist (above); and
- The WHO COVID-19 Essential Supplies Forecasting Tool (COVID-ESFT) v1.2 – adapted for use at facility level.

These guidance notes outline how to use item 2 above to generate estimates of likely equipment needs and costs over time, drawing on WHO recommendations for essential supplies for COVID-19. The Essential Supplies Forecasting Tool (ESFT) has been developed for national policymakers, but can be adapted to give estimates at facility level if the following steps are performed (each is described in the text and shown in the relevant screenshot):

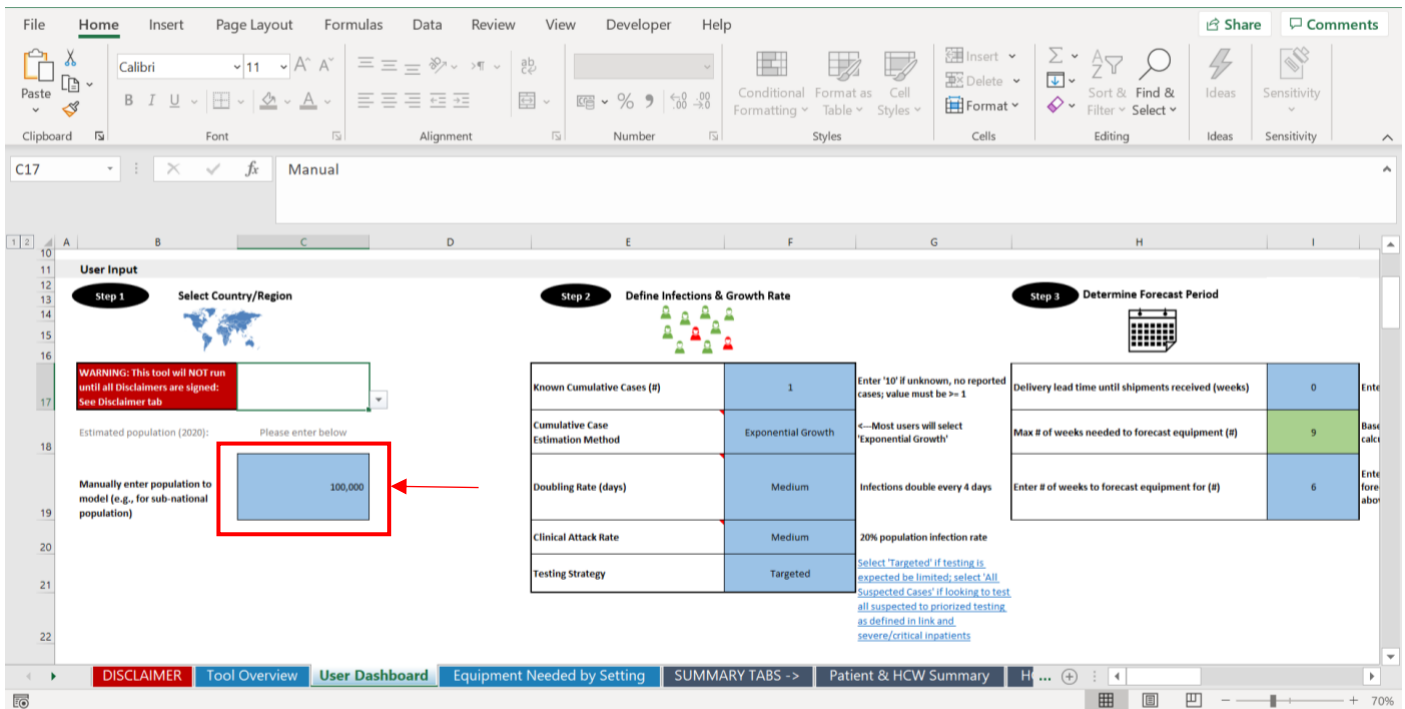
1. Open the ESFT from the [link](#) at the WHO website.
2. Go to the third tab in the spread (“User Dashboard”), to cell C17 under Step 1. Here, click the drop-down icon to the right of the box and scroll down the list of countries until the bottom entry, which is called “Manual”. Select this option.

The screenshot displays the WHO COVID-19 Essential Supplies Forecasting Tool (COVID-ESFT) v1.2 spreadsheet. The interface is divided into several sections:

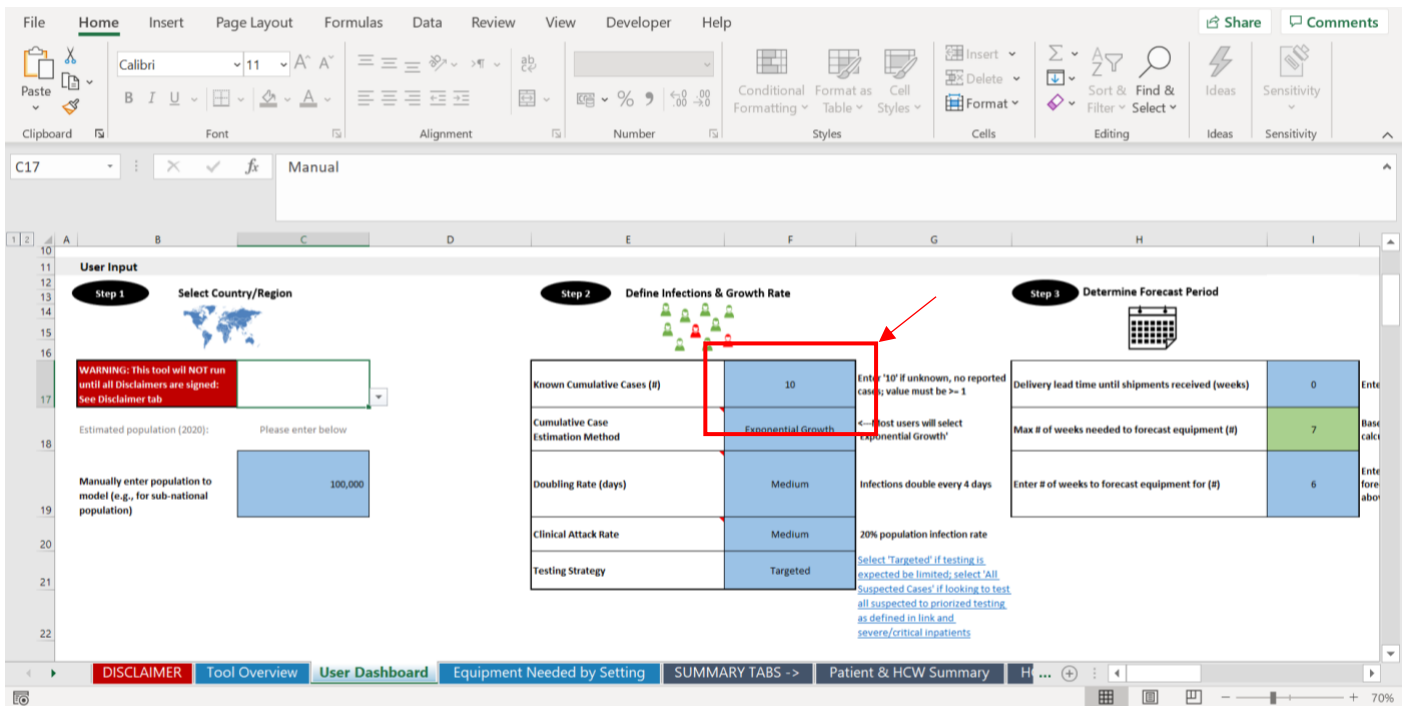
- Key:** User input cell (green), Calculation (blue).
- User Input:** Step 1: Select Country/Region. A dropdown menu in cell C17 is highlighted with a red box and a red arrow. The dropdown menu is currently showing 'Algeria'. Below the dropdown, the estimated population (2020) is 43,851,000.
- Step 2: Define Infections & Growth Rate:** Known Cumulative Cases (#) is 1. Cumulative Case Estimation Method is Exponential Growth.
- Step 3: Determine Forecast Period:** Delivery lead time until shipments received (weeks) is 0. Max # of weeks needed to forecast equipment (#) is 14.

The spreadsheet also includes a 'WARNING' box: "WARNING: This tool will NOT run until all Disclaimers are signed: See Disclaimer tab". The bottom of the spreadsheet shows several tabs: DISCLAIMER, Tool Overview, User Dashboard, Equipment Needed by Setting, SUMMARY TABS ->, and Patient & HCW Summary.

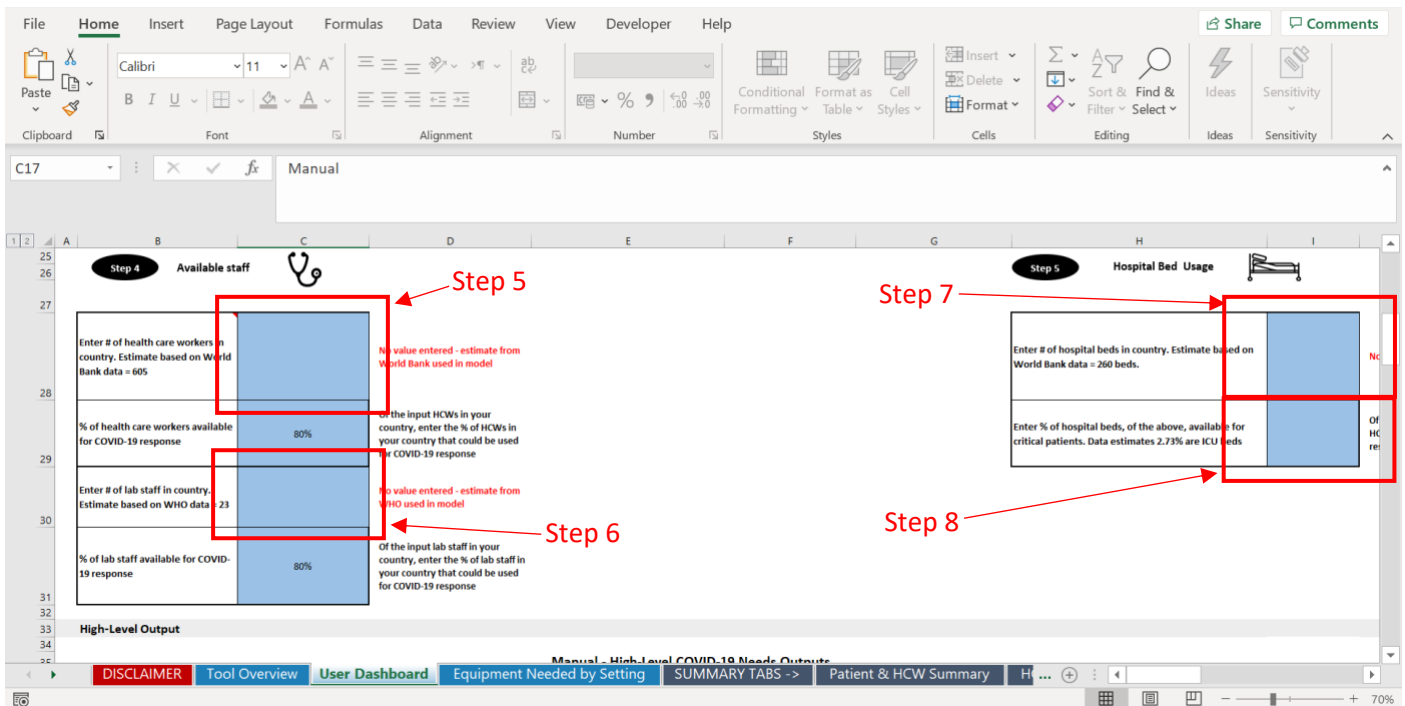
3. Go down to cell C19 in the same worksheet (“Manually enter population to model”). **Please note that this box will only appear if you select “Manual” in cell C17 as outlined in step 2 above.** You can now enter the catchment population size for your facility. Enter the total size of the catchment population for your secondary care facility (e.g. 50,000, 100,000 etc), as recorded on page 1 of this checklist.



4. Now go to cell F17 (“Known cumulative cases”), under Step 3. Enter the number 10 in cell F17.



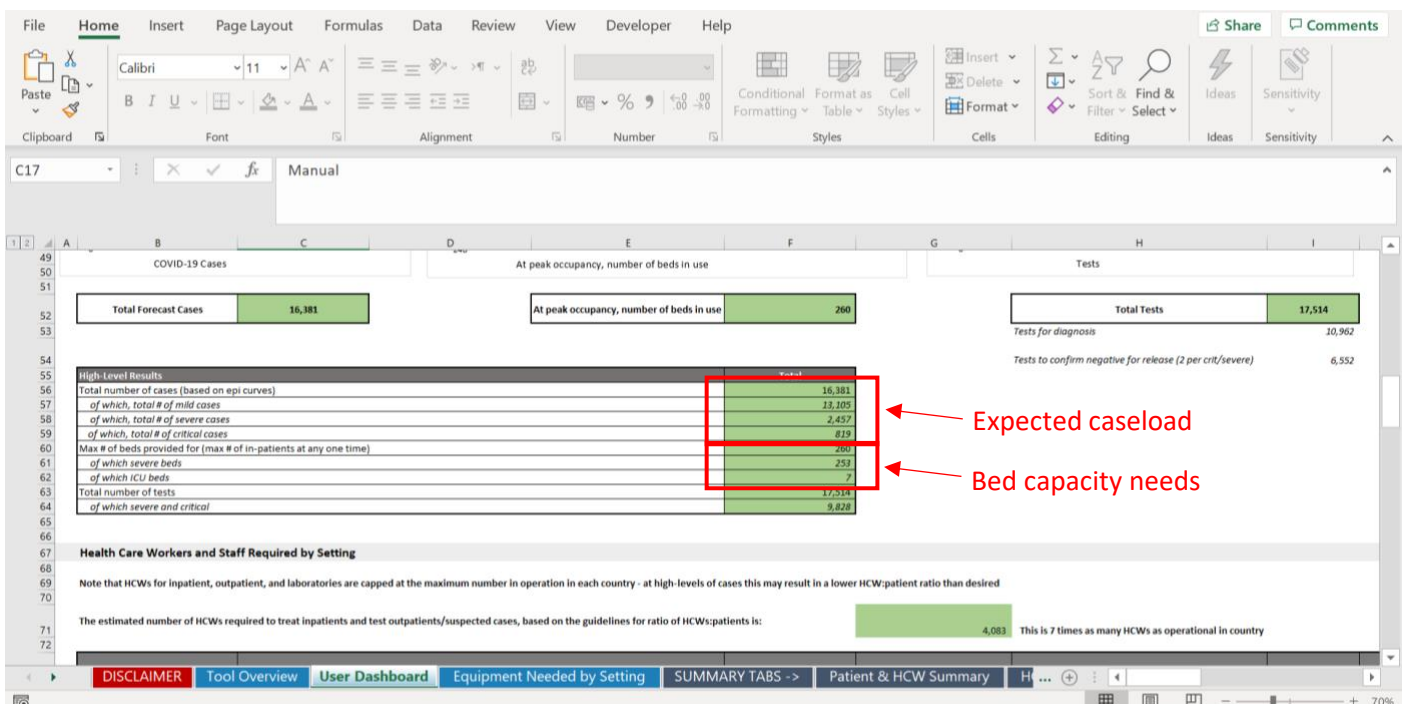
5. The next three steps are all shown in order in the screenshot below. Go to cell C28 (“Enter # of healthcare workers in country”) under the “Available staff” section. Enter the total number of healthcare workers in your facility.



6. Now go to cell C30 (“Enter # of lab staff in country”). Enter the total number of lab staff working in your facility.
7. Now you will need to complete two fields in the “Hospital Bed Usage” section. Go to cell I28 (“Enter # of hospital beds in country”) – and here enter the total number of beds in your facility.
8. Finally, go to cell I29 (“Enter % of hospital beds, of the above, available for critical patients”). Enter here the percentage of beds in your facility that are intensive care beds (working assumption = 0%).

Having completed steps 1-8 above, you can scroll down the user dashboard to view the implications for your facility:

- Cells F56-F59 will give estimates for the number of cases that can be expected over the following 6 weeks, broken down by severity.



- Cell F61 will give an estimate of the total number of beds that will be needed for patients with severe or critical disease – i.e. requiring oxygen support or intensive care-grade treatment if it is available.
- Row 97 onwards provides estimated equipment needs for that period given.

## ANNEX 2: ASSUMPTIONS AND METHOD OF DEVELOPMENT

This checklist is addressed to secondary care, district referral centres from primary care clinics in low-income countries (LICs), not to tertiary care facilities or specialised hospitals. It is assumed that a typical facility of this kind might have perhaps 50-100 beds and serve a catchment population of 100,000-250,000. It will have at most facilities for delivery of concentrated oxygen (tanks) not invasive mechanical ventilation (IMV) and will not have an intensive care unit (ITU). It would also likely not have an on-site microbiology/virology laboratory facilities.

Other background assumptions on which this draft checklist was developed were that:

- The focus of the checklist is on processes and procedures, not equipment requirements in detail;
- Transportation to/from hospitals is not incorporated within service planning because it is either (i) at the discretion of patients, or (ii) covered by charitable or private services not directly linked to the facility;
- The target audience is hospital managers, service planners, and emergency preparedness/response managers (facility or care organisation level).

Source material reviewed in preparing this document spanned hospital readiness and preparedness assessment from international agencies, ministries of health and other national-level bodies, with a focus on documents pertaining to the following:

- Hospital COVID-19 preparedness;
- Hospital pandemic influenza preparedness (because of analogous mode and dynamics of transmission);
- Hospital disaster preparedness and response in general (for information on general processes and procedures);
- Minimum standards for infection prevention and control (IPC) in secondary care settings;
- Some country-based essential hospital service packages for information on likely operating context (for Afghanistan, Liberia).

Documents on hospital preparedness for other epidemic-potential diseases (notably Ebola) produced in recent years were not considered here because the characteristics and transmission dynamics of these infections were considered too different to be meaningfully applied for COVID-19.

### ANNEX 3: KEY SOURCES (either directly cited above or used to cross-check/corroborate items included)

Afghanistan Essential Package of Hospital Services (2005):

<https://apps.who.int/medicinedocs/en/m/abstract/Js16169e/>

Ayebare RR, Flick R, Okware S, Bodo B, Lamorde M (2020). Adoption of COVID-19 triage strategies for low-income settings. *The Lancet Respiratory Medicine*, March 11<sup>th</sup>.

CDC checklist for COVID preparedness at hospital level: [https://www.cdc.gov/coronavirus/2019-ncov/downloads/HCW\\_Checklist\\_508.pdf](https://www.cdc.gov/coronavirus/2019-ncov/downloads/HCW_Checklist_508.pdf)

CDC hospital pandemic influenza preparedness checklist: <https://www.cdc.gov/flu/pandemic-resources/pdf/hospitalchecklist.pdf>

Chinese COVID manual: <https://video-intl.alicdn.com/Handbook%20of%20COVID-19%20Prevention%20and%20Treatment.pdf> (although not much in here on hospital preparedness at macro level; more about patient level management and micro-level practices to support response work)

ECDC checklist for hospital preparedness for receiving COVID-19 patients:

<https://www.ecdc.europa.eu/sites/default/files/documents/covid-19-checklist-hospitals-preparing-reception-care-coronavirus-patients.pdf>

ICRC Hospitals for War-wounded manual (2005 ed):

[https://www.icrc.org/en/doc/assets/files/other/icrc\\_002\\_0714.pdf](https://www.icrc.org/en/doc/assets/files/other/icrc_002_0714.pdf)

Liberia Essential Package of Health Services, Secondary and Tertiary care (2011):

<https://www.resilientinstitutionsafrica.org/sites/default/files/2018-09/%5BLIBERIA%5D%20Essential%20Package%20of%20Health%20Services%20%282011%29.pdf>

UK (DHSC) pandemic preparedness planning document at system level – 2012:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/213696/dh\\_133656.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/213696/dh_133656.pdf)

WHO EURO hospital emergency response checklist (2011): <http://www.euro.who.int/en/health-topics/health-emergencies/from-disaster-preparedness-and-response/publications/2011/hospital-emergency-response-checklist-2011>

WHO EURO hospital readiness checklist for COVID-19 (2020):

[http://www.euro.who.int/\\_data/assets/pdf\\_file/0010/430210/Hospital-Readiness-Checklist.pdf?ua=1](http://www.euro.who.int/_data/assets/pdf_file/0010/430210/Hospital-Readiness-Checklist.pdf?ua=1)

WHO Guidelines on Core Components for Infection Prevention and Control (facility level):

<https://apps.who.int/iris/bitstream/handle/10665/251730/1/9789241549929-eng.pdf?ua=1>

WHO Hospital Readiness for Pandemic Influenza manual (WHO EURO): <https://www.who.int/publications-detail/hospital-preparedness-checklist-for-pandemic-influenza>

WHO Minimum Requirements for infection prevention and control (IPC) programmes:

<https://www.who.int/infection-prevention/publications/core-components/en/>

WHO PAHO Hospital Readiness Checklist for COVID:

<https://www.paho.org/en/file/59292/download?token=GtCXXKZWT>

WHO SARA manual:

[https://apps.who.int/iris/bitstream/handle/10665/149025/WHO\\_HIS\\_HSI\\_2014.5\\_eng.pdf;jsessionid=9FDCE46EF44BBA0780E3B719DDC7AE8B?sequence=1](https://apps.who.int/iris/bitstream/handle/10665/149025/WHO_HIS_HSI_2014.5_eng.pdf;jsessionid=9FDCE46EF44BBA0780E3B719DDC7AE8B?sequence=1)