This manual is to be used with the ESFT Dynamic Costing Tool version 1.2.

World Health Organization

COVID-19 Partners Platform

Manual for the ESFT Dynamic Costing Tool v1.2

(September 2020)

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Contents

Introduction

The ESFT Dynamic Costing Tool is a resource to help countries undertake a costing exercise to estimate the resources needed to effectively respond to COVID-19. This tool builds on the "WHO COVID-19 Essential Supplies Forecasting Tool (ESFT)". The ESFT is meant to help countries forecast the quantities and costs of essential supplies for their COVID-19 response, including personal protective equipment (e.g., masks and gloves), biomedical equipment for case management (e.g., ventilators and oxygen concentrators), diagnostic reagents and equipment, essential drugs for supportive care, and consumable medical supplies. The ESFT Dynamic Costing Tool adds to the ESFT the possibility for countries to calculate resource needs for essential capabilities that are necessary for the COVID-19 response, as well as the costs of ensuring the delivery of essential services, as outlined in the 9 pillars of the Strategic Preparedness Response Plan (SPRP). An explanation of the SPRP and the 9 pillars can be found here. The part of the tool that calculates the health system/essential service delivery costs is named the "PLUS" component in the tool.[1]

In order to obtain an estimate of resource needs for COVID-19 response planning with the ESFT Dynamic Costing Tool, the user **MUST** complete both the ESFT and the PLUS components. This requires becoming familiar with the ESFT tool and working to fill, check and validate its necessary inputs, followed by validating suggested defaults of inputs used by the PLUS

[1] Note that the ESFT costs are still included in the PLUS component of the ESFT Dynamic Costing Tool and these for the most part fall into Pillar 4 for Case Management.

components. Only once all of the components of the tool (ESFT and PLUS) have been completed and the user is satisfied with the results, should the complete tool be uploaded to the COVID-19 platform.

ESFT component

The ESFT (v.2.0) comprises the first sheets in the tool (on the far left, after the 'DISCLAIMER' sheet). The 'Tool Overview' sheet provides a general description of the sheets that are part of the ESFT tool and what it covers. The 'Input' and the 'User Dashboard' sheets bring together the variables that are used as inputs to the calculations in the ESFT. Both require careful review and input by the user to ensure that the tool estimates results that accurately portray the needs in the country of the user. The 'Equipment List & Usage' sheet also contains cells where inputs can be changed if prices of various commodities, or the quantities used (per COVID case or per health worker), are different in a country and need to be changed by the user. For more information about the ESFT, please refer to the specific technical documentation and FAQs put together for that tool.

Furthermore, the 'User Dashboard' sheet provides a critical link between the ESFT and the PLUS components, as it is where a forecast of the number of COVID-19 cases in-country can be inserted. For this reason, it is important to make sure that everything on this sheet is set-up correctly.

Once a user is familiarized with the tool and has gone through and checked the ESFT inputs (although one can return at any time to revisit those inputs), an important step is to obtain an estimate of the forecasted COVID-19 cases in one's country. The image below shows the 'User Dashboard' sheet, and the pop-up bubbles show the key settings that should be set up for this purpose.

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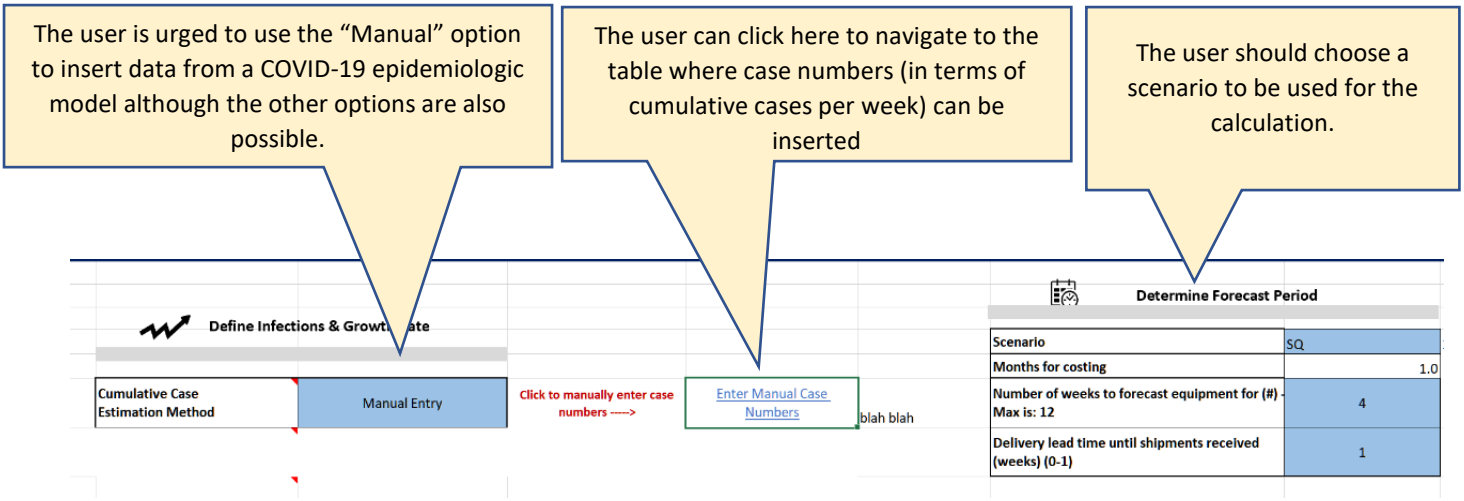

In the section called '***Define Infections and Growth Rate'***, you will need to select which forecasting methodology will be used to predict the number of COVID-19 cases in the next month(s) in your setting. The options are listed below.

a. *Manual Entry*. The manual entry option is the preferred option if one wants to enter their own epidemiologic data. The data to be entered must be in terms of cumulative weekly case numbers. The user may have his or her own country projected case numbers but can also use the numbers from the Imperial College Covid-19 model. Further models that can be considered come from the CMMID group at the London School of Hygiene and Tropical Medicine (LSHTM) and from the Institute for Health Metrics and Evaluation (IHME). Several others exist, and this is an ever-developing area, however, a description for how to enter data from the Imperial College model is in the last section of this manual. This section gives a detailed description on how to download data from the imperial web site and how to insert this data in the table in the ESFT Dynamic Costing Tool.

b. *SIR Model* – This option uses a built-in "SIR" model, which is a basic epidemiological model for predicting the number of cases in an outbreak of communicable disease. More information about the SIR model, and the parameters used in the calculations of this tool can be found in the ESFT documentation.

c. *Exponential Growth* – This option uses a built-in exponential model, which produces a prediction of forecasted number of cases under a period of exponential growth. More

information on this model, and its calculations, can be found in the ESFT documentation.

*Note that for the *SIR Model* and the *Exponential Growth* models, the user will need to enter additional information, but it is not necessary to manually enter the number of cumulative cases, as is needed in the *Manual Entry* mode.

PLUS Component

*(*Note, only complete this component after executing the ESFT Component described in the previous section)*

After reviewing the ESFT sheets, the PLUS component of the ESFT Dynamic Costing Tool can be found as a series of sheets that need to be reviewed. The first two are described below and should be reviewed thoroughly before moving to the following three sheets.

a. *Introduction* – This sheet shows the steps that have to be taken by the user to use the PLUS costing feature of the ESFT dynamic costing tool.

After reviewing these two initial sheets, there are three main input sheets for the PLUS component of the tool. While the PLUS component uses many inputs from the ESFT, there are other inputs that are used that go beyond those used by the ESFT. These sheets asks the user to validate or generate various of these additional inputs that are used as part of the wider costing exercise. These are presented below.

b. *PLUS inputs 1* – This first sheet puts together the "building blocks" used in the costing exercise.. Building blocks are groupings of inputs or products that are used in the calculations of the resource requirements for an effective COVID-19 response. Each building block is a combination of smaller items that in total make up a final 'product' or cost item. For instance, an incident management team contains various cadres of workers as well as some equipment (e.g. phone credits and office space). The tool has

defaults for these building blocks, in terms of both the pieces used and the quantities of each piece, which should be reviewed for validity by the user and if necessary, changed.

The building blocks are effectively used in the "PLUS Inputs 3" sheet. This sheet, which is described in more detail below, pulls from pre-assembled building blocks for various actions. For example, in pillar 9, action 1. “Establish a simplified purpose-designed governance and coordination mechanisms” is assumed to be implemented by a coordination team, and a building block defined as “team 1” is used as a default. This building block is that of a team, with a certain number of staff with particular salaries, a rented vehicle, fuel and driver costs for the vehicle, cellular phone credit and rented office space. The user is, in this example, urged to assess if a team with such a composition is relevant for several types of actions in the country, or if the typical composition, both of pieces or quantities, should be changed. Similarly, the user should review all of the building blocks in sheet 1, for their composition and the quantities of each piece.

Screenshot of ‘PLUS Inputs 1heet’:

Frequently used combinations of items or activities

Name	Items	Quantity	Price	Frecuency	Total (1 months)	Comments
	National Staff	5	$ 451	Monthly	$ 2,256	Team with very little driving
	Cars	1	$ 3,000	Monthly	$ 3,000	
	Driver	1	$ 209	Monthly	$ 209	
	Fuel	15	$ 1	Daily	$ 28	KM, then * by fuel economy * price per liter
	Mobile phone (credit)	5	$ 10	Monthly	$ 50	
	Office space	1	$ 181	Monthly	$ 181	
Team 1	**Total**				**$ 5,724**	
	National Staff	5	$ 451	Monthly	$ 2,256	Team with very little driving
	Cars	1	$ 3,000	Monthly	$ 3,000	
	Driver	1	$ 209	Monthly	$ 209	
	Fuel	47	$ 4	Daily	$ 91	KM, then * by fuel economy * price per liter
	Mobile phone (credit)	5	$ 10	Monthly	$ 50	
	Office space	1	$ 181	Monthly	$ 181	
Team 2	**Total**				**$ 5,787**	
	National Staff	4	$ 451	Monthly	$ 1,805	

c. *PLUS Inputs 2* - This sheet asks the user to validate/update prices/costs of the various items used in the costing. These include both the resulting cost value of the building blocks, outlined in the PLUS inputs 1 sheet, but also other specific items that respond to

specific actions of the SPRP. The tool has country-specific default costs and prices for both of these items, but the user should validate and change them if necessary. To accept the costs and prices suggested, the user should check the box for "Accept all defaults". If this box is not selected, the user will be able to enter costs for any specific components as needed.

Some of the items in this sheet also feed into the building blocks that are in the "PLUS Inputs 1" sheet. The tool estimates country-specific values for each item, but the user is urged to check and validate these, particularly as these can be used in several building blocks, and many building blocks are used to cost many activities.

Cost types	Cost	Cost types	Cost
Team 1	$ 5,724	Ambulances	$ 5,277
Team 2	$ 5,787	Training online	$ 20
International consultant	$ 15,735	Print media	$ 1,299
Consultant -normal task	$ 451	Radio media	$ 270
Consultant -large task	$ 10,000	TV media	$ 1,504
None		RRT team	$ 8,590
Training - in person	$ 799	Media campaign	$ 10,000
Material development 1	$ 1,000	Contact tracer team-phone	$ 83
Material development 2	$ 3,000	Posters	$ 6
HR cat 1	$ 722	Hazard Pay HR cat 1	$ 181
HR cat 2	$ 587	Hazard Pay HR cat 2	$ 147
HR cat 3	$ 451	Hazard Pay HR cat 3	$ 113
HR cat 4	$ 350	Hazard Pay HR cat 4	$ -
HR cat 5	$ 209	Hazard Pay HR cat 5	$ 52
HR cat 6	$ 536	Hazard Pay HR cat 6	$ 134
HR cat 7	$ 330	Hazard Pay HR cat 7	$ 83
HR cat 8	$ 451	Hazard Pay HR cat 8	$ 113
HR cat 9	$ 536	Hazard Pay HR cat 9	$ 134
HR cat 10	$ 587	Hazard Pay HR cat 11	$ -
HR cat 11	$ 451	Hazard Pay HR cat 12	$ 134
HR cat 12	$ 536	Safe Burial Team	$ 9,609

PLUS Inputs 3 - This sheet lists the pillars of an effective COVID-19 response, the actions that are needed as part of each pillar, and the items that are needed to implement each of those actions. The items are the units that the tool is costing, and which added up come together to form the estimate of total resource needs for a country's COVID-19 response. . The sheet uses the cost/price information gathered and calculated in the Inputs 1 and Inputs 2 sheets, and combines these with the required quantities of each item **A detailed listing of all the costed items from this sheet is provided in the Annex**. Each item thus has a building block it is made up of and a suggested quantity of that building block required for that item. This quantity is often linked to the numbers of infections and patients from the ESFT, but in many cases is a product of country-specific parameters, such as the number of subnational administrative

units, or Points of Entry. The combination of price and quantity yields an estimated cost for each item. In addition, this sheet also has some qualitative descriptors of the item, such as whether it is a one-time or a recurrent item, among others. These are used as part of a results sheet, described in a subsequent section of the manual. If the user accepted all of the default values in the previous sheets, these will be used in this sheet. Updates to costs in previous sheets will also filter to this sheet.

Pillar (for more information on pillars click the hyperlink)	Section	Item Name	Recurrence	Cost type	Total Unit Cost	Default quantity used for 55810 cases	Quantity used in stead of default	Total Cost	Domestic gov funding (%)	Domestic private funding (%)
1. Country-level coordination		Satellite comms	Setup (once)	None	1,200	35		42,000		
1. Country-level coordination		Incident management and coordination team	Monthly (recurring)	Team 2	6,000	35		210,000		
1. Country-level coordination		Incident management training	Monthly (recurring)	Training - in person	799	433		346,054		
1. Country-level coordination		Incident management international	Monthly (recurring)	International consultant	15,735	1		15,735		
1. Country-level coordination		Incident management national	Monthly (recurring)	Consultant -normal task	451	35		15,792		
1. Country-level coordination		Partner operating costs	Monthly (recurring)							
2. Risk comms and community engagement		Risk communications team	Monthly (recurring)	Team 2	5,787	433		2,505,972		
2. Risk comms and community engagement		Communications cost	Monthly (recurring)	TV media	1,504	240		360,840		
2. Risk comms and community engagement		Communications cost	Monthly (recurring)	Radio media	270	960		259,185		

There are several steps that the user should follow on this sheet. These are as follows:

1. Check that each item within each pillar is relevant for the country of the user . If all items for a given pillar are not necessary, the user can uncheck the “Accept all defaults” box. All items will be allocated a 0 cost. (If an item is deemed to be unnecessary, if the ‘reject defaults’ box is checked, the user can insert a 0 as the quantity needed to give the unnecessary item a cost of 0).
2. If all items for the pillar are present, validate if the default unit costs/prices for each item is correct. If these are not correct, deselect the ‘accept defaults box’ overwrite the suggested unit cost/price in the corresponding cell.
3. For each item, review that the quantities suggested are correct. If the quantity is not correct, but the unit costs/prices were, deselect the ‘accept defaults box’ fill in the correct quantity in the “Quantity used instead of default” column.

Next, if the user finds that an item that is necessary to effectively deliver an action of the pillars of the PSRP is not listed on this sheet, they should add it by inserting a row to the entire sheet. Adding extra rows to the *PLUS Inputs 3* sheet is easy because it is no

more complicated than inserting an empty row as normal in Excel. To do so the user should select a cell above which the user wants to insert a row, right click the mouse to show the context menu of Excel, and click “insert row” from the context menu. The user can select the cells from the row above and copy those into the new row After adding an item, the user should insert the relevant unit cost and information, using either an existing building block or manually inserting a unit cost, and the required quantity of each unit, in the ‘quantity used instead of default’ column..

If "CHECK" appears anywhere in the column that estimates the cost total for each item, the user should look for an error in the prices and quantities used, found in the M,T and/or U columns (cell will be red).

As a last step in this sheet, the user should insert the availability of funding for each item from public and private funding sources. These should be inserted as a % (from 0 to 100) and by inserting an expected share of financing, this will automatically update the share of the cost that would need future funding, possibly by by development partners.

A detailed picture of this sheet, and its steps, with pop-up descriptions is shown below.

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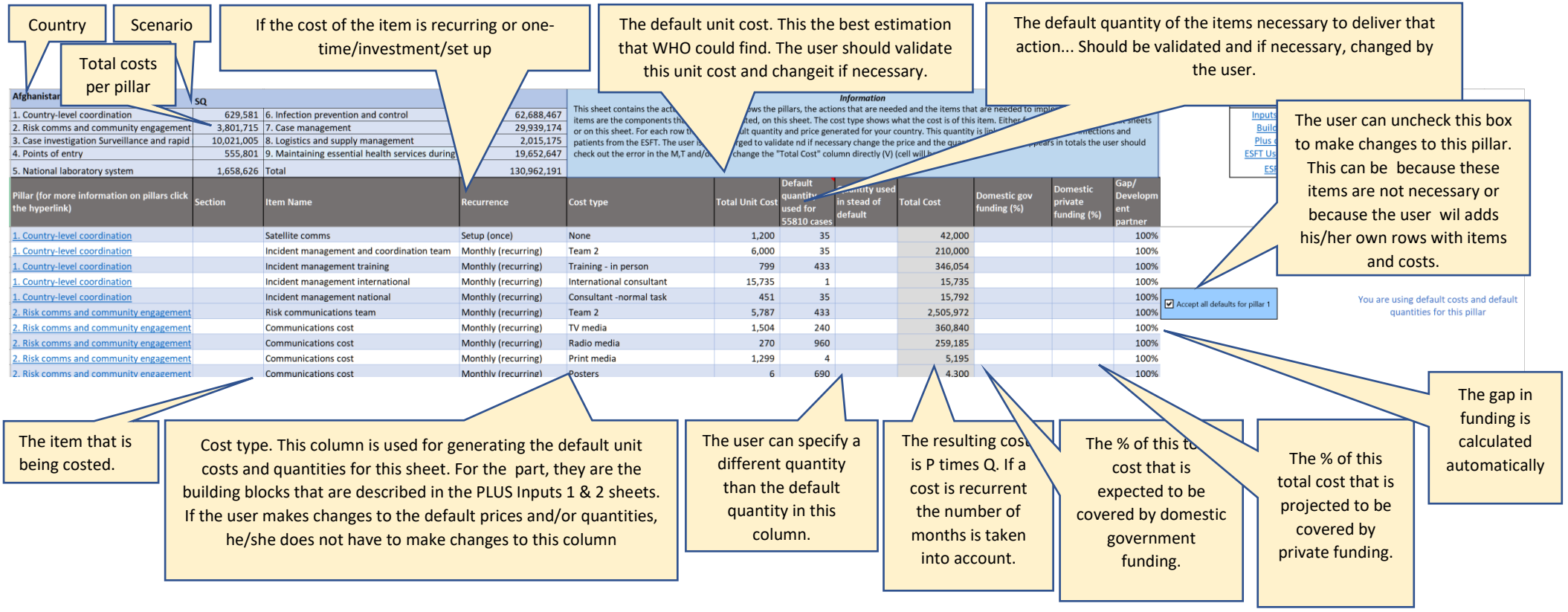
PLUS Inputs 3 (detailed description).



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After all inputs have been validated and/or inserted, the model will generate costing results. The *PLUS cost results* sheet shows these results. A further sheet, *Outcomes for COVID - 19 Platform.* shows the results of the calculation that will be uploaded to the partners' platform.

Inputting Epidemiologic Data into the ESFT (from the Imperial College Model)[2]

NOTE: These instructions were developed using the Google Chrome browser. Steps may vary with different browsers and variations when using Microsoft Explorer and Edge are described below.

Projections of 1 and 3 months are available for use (if desired) from the Imperial College COVID-19 model for the vast majority of low-income and middle-income countries. The following steps make it possible for users to download and insert the latest Imperial College epidemiological projections for COVID-19The Imperial College Model estimates projected COVID-19 cases based on three scenarios, which reflect maintaining the type of infection prevention measures currently in place (status quo), relaxing the measures currently in place so that infection transmission increases by 50 %(50% increase in transmission) or tightening the measures currently in place so that infection transmission is reduced by 50% (50% decrease in transmission), which the user will select as part of the data input process.

1. Visit the Imperial College MRC Modelling Group's LMIC Reports page: https://github.com/mrc-ide/global-lmic-reports
2. Find your country based on the appropriate ISO code and click it's respective folder (E.g. AFG for Afghanistan).
3. A list of modelling results folders are shown by date. Select the latest projection by opening the folder at the bottom of the list.
4. After clicking on this folder, with the most recent date, select the *projections* file. Right-click on the download button on the right hand side of the screen (shown below, in the red circle) and save it to your desired location.

[2] Other models can be used as needed, however, the Imperial College model instructions are provided here.

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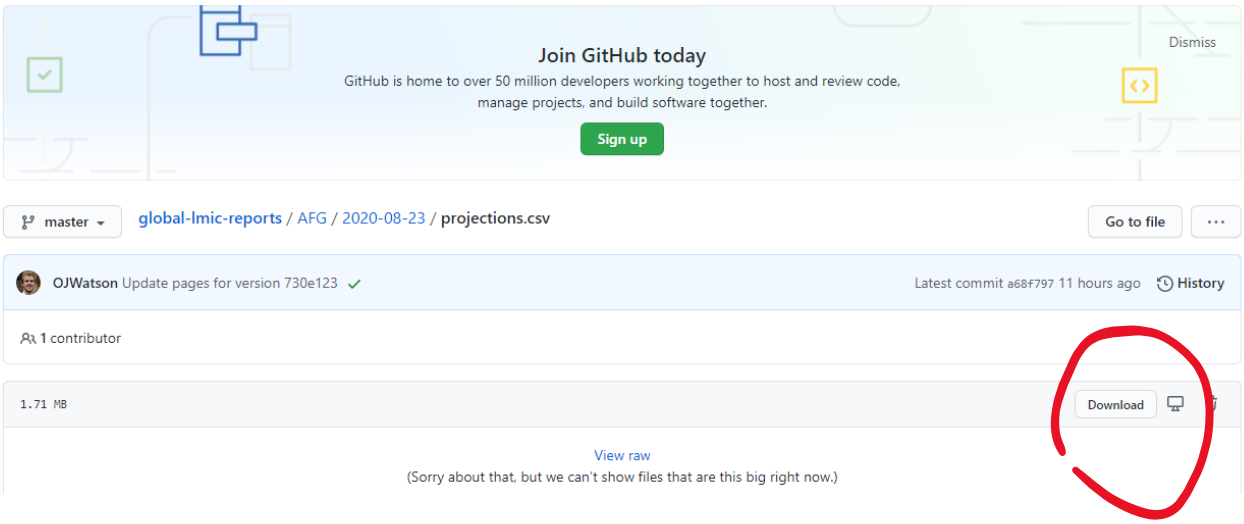
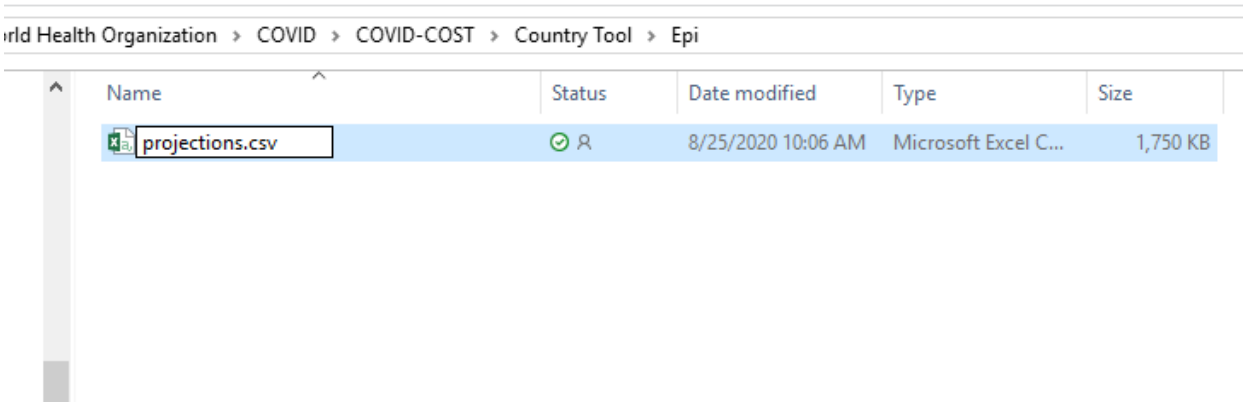


5. The file will be downloaded as a *.txt* file, and you will need to convert this this to a *.csv or .xlsx,* or similar file to be able to work with it in Excel. You can convert the .txt file by using the 'import from .txt' functionality in Excel, or by clicking the filename itself and simply changing the extension to .csv. (NOTE: that this may work differently for different people, so please convert the file in a manner that works for you.)



6. Once you have the file in the right format, please open the file in Excel and inspect the data. Filtering some of the variables will help in finding the right information. To do this, select the full dataset (CTRL + A), and click on the filter button under the DATA tab.

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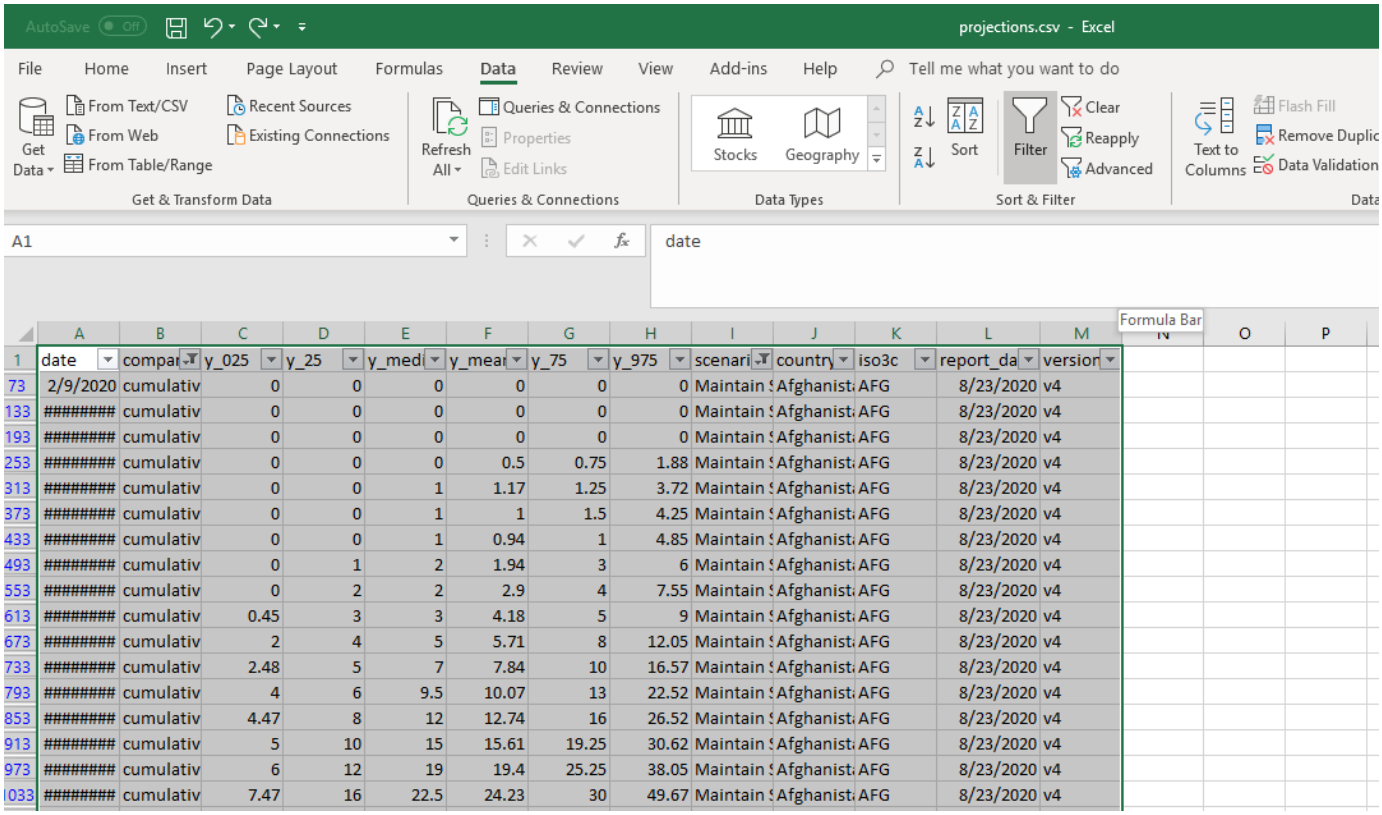

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	date	compar	y_025	y_25	y_med	y_mea	y_75	y_975	scenari	country	iso3c	report_da	version
73	2/9/2020	cumulativ	0	0	0	0	0	0	Maintain S	Afghanist	AFG	8/23/2020	v4
133	########	cumulativ	0	0	0	0	0	0	Maintain S	Afghanist	AFG	8/23/2020	v4
193	########	cumulativ	0	0	0	0	0	0	Maintain S	Afghanist	AFG	8/23/2020	v4
253	########	cumulativ	0	0	0	0.5	0.75	1.88	Maintain S	Afghanist	AFG	8/23/2020	v4
313	########	cumulativ	0	0	1	1.17	1.25	3.72	Maintain S	Afghanist	AFG	8/23/2020	v4
373	########	cumulativ	0	0	1	1	1.5	4.25	Maintain S	Afghanist	AFG	8/23/2020	v4
433	########	cumulativ	0	0	1	0.94	1	4.85	Maintain S	Afghanist	AFG	8/23/2020	v4
493	########	cumulativ	0	1	2	1.94	3	6	Maintain S	Afghanist	AFG	8/23/2020	v4
553	########	cumulativ	0	2	2	2.9	4	7.55	Maintain S	Afghanist	AFG	8/23/2020	v4
613	########	cumulativ	0.45	3	3	4.18	5	9	Maintain S	Afghanist	AFG	8/23/2020	v4
673	########	cumulativ	2	4	5	5.71	8	12.05	Maintain S	Afghanist	AFG	8/23/2020	v4
733	########	cumulativ	2.48	5	7	7.84	10	16.57	Maintain S	Afghanist	AFG	8/23/2020	v4
793	########	cumulativ	4	6	9.5	10.07	13	22.52	Maintain S	Afghanist	AFG	8/23/2020	v4
853	########	cumulativ	4.47	8	12	12.74	16	26.52	Maintain S	Afghanist	AFG	8/23/2020	v4
913	########	cumulativ	5	10	15	15.61	19.25	30.62	Maintain S	Afghanist	AFG	8/23/2020	v4
973	########	cumulativ	6	12	19	19.4	25.25	38.05	Maintain S	Afghanist	AFG	8/23/2020	v4
1033	########	cumulativ	7.47	16	22.5	24.23	30	49.67	Maintain S	Afghanist	AFG	8/23/2020	v4

7. You need to select the dates that are relevant for your costing (i.e. if you are doing a 12 week analysis, you can filter the dates that you need in column A) . Under column B, the variable for 'compartment' contains various epidemiologic parameters. Select *cumulative infections*, and then in column I ('scenario'), select *Maintain Status Quo*.[3] In column F, one should select the *y_mean* variable to obtain the mean number of cumulative cases for a given day and scenario. Selecting other variables such as y_median or y_25 will give the median, 25th percentile, etc.
8. Since the variable calculated by the Imperial College model is cumulative cases, you will only need to select the variable at a single point in the week of interest. However, **NOTE** that since the model uses a 2-week initialization period, you actually need to extract estimates for 2 weeks in the past from your start date of interest. For the 12-week scenario, you will need to extract 14 estimates (2 weeks previous to the start date + 12 weeks into the future). NOTE: you will need to take only <u>one estimate of</u> cumulative_infections for each seven-day period, and it is suggested that this be the same day in each week. Therefore, if one uses the estimate from Monday, August 3rd in the first week, they should then take Monday August 10th as the second week's estimate, and so on. This can be done manually, although advanced users may develop a formula to automate this step. It is suggested that you extract the estimates by copying and pasting the row for each week's estimate in a new sheet. This will then make it easy to copy and paste these into the model in the next step.
9. Once you have your estimates extracted, you can then insert them into the ESFT PLUS dynamic costing tool. Open the tool and in the 'User Dashboard' sheet, ensure that the Cumulative Case Estimation Method is set to *Manual Entry.* Then click on the link (cell E11 "Enter Manual Case Numbers") to enter the cumulative cases manually in the 'Patient Calcs' sheet.

[3] For other scenarios of interest, please select the appropriate scenario in column I. The PLUS tool is set up to cost 3 scenarios in total. These are the 'Maintain Status Quo', 'Additional 50% Reduction', and 'Relax Interventions 50%' scenarios.

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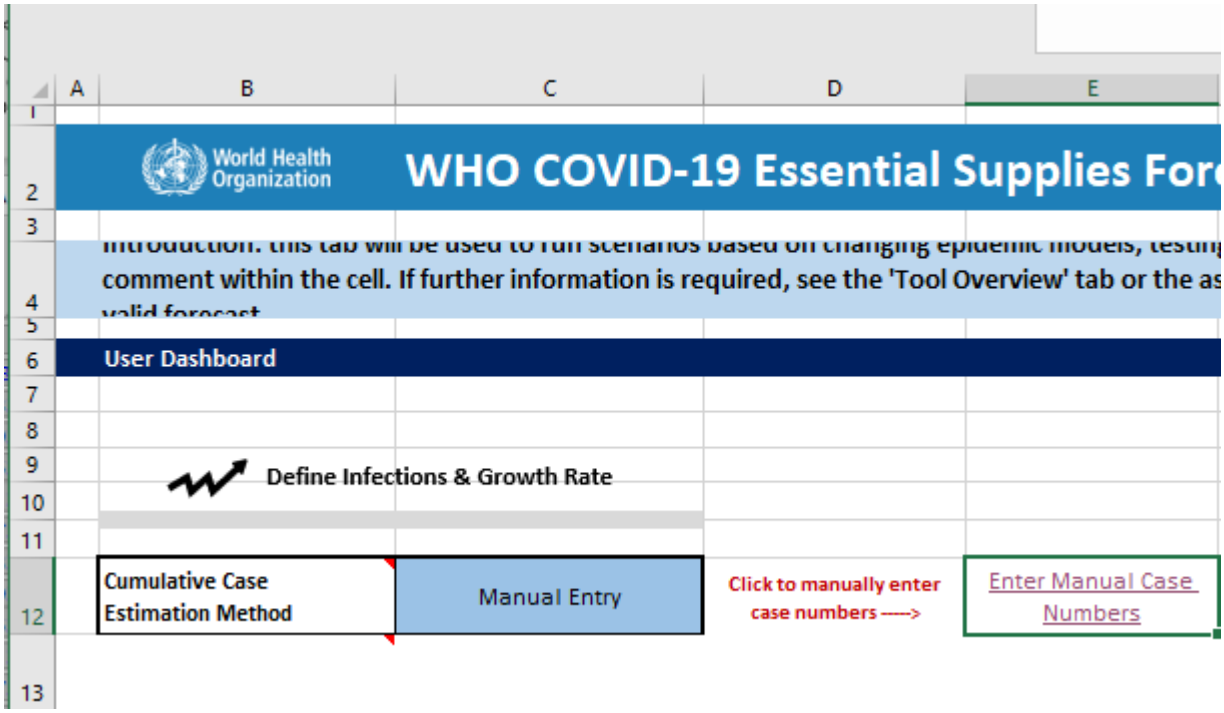
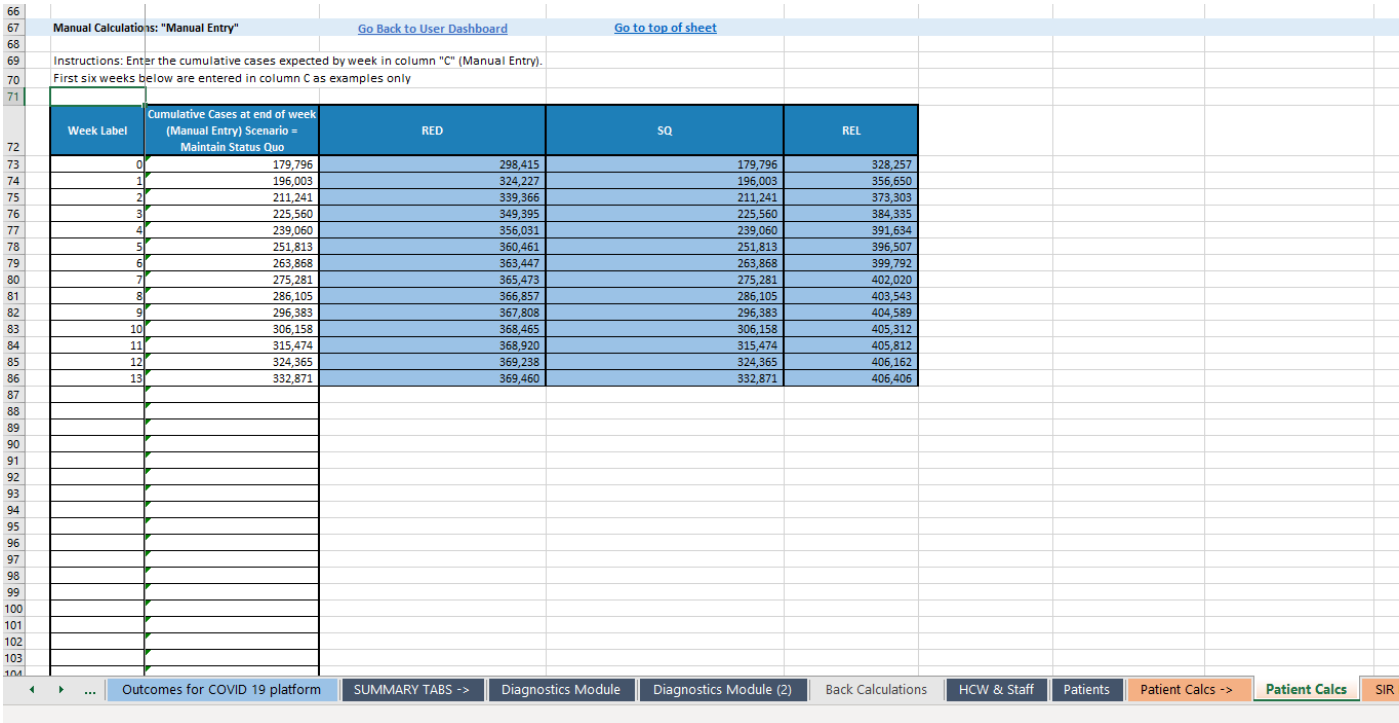


10. The cases should be put into the first 14 rows (remember there are 2 + 12 weeks) in the SQ (Status Quo) column. Please only change the values in blue cells in the columns to the right. If you have used a formula for extracting the values, you may need to paste the forecasted number of cases as values.



Steps in Microsoft Edge and Explorer.

In Microsoft Edge and Explorer, steps 4 and 5 can be somewhat different.

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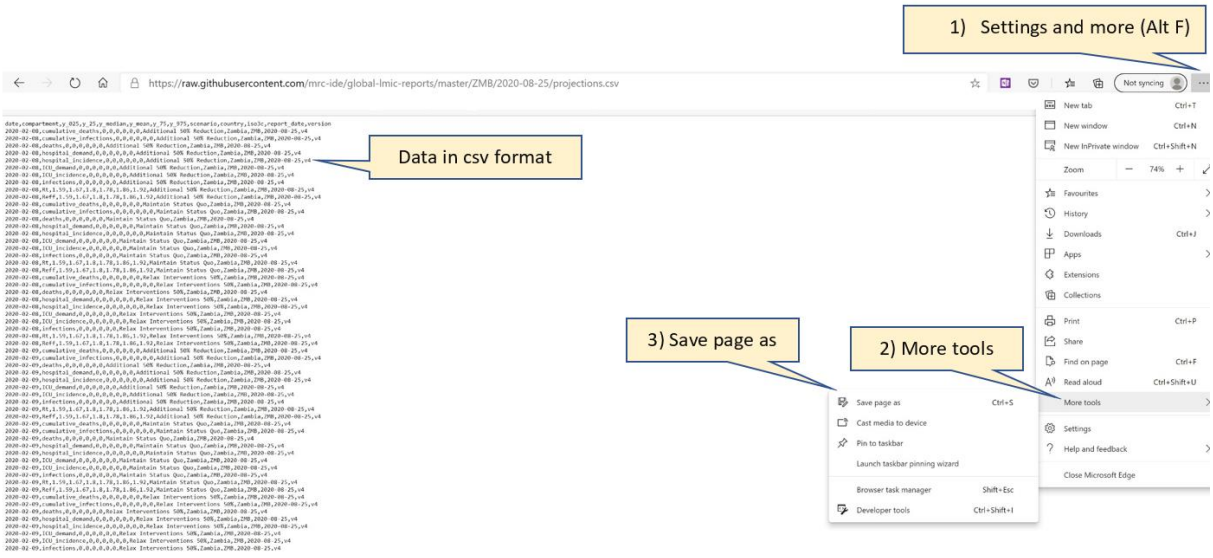
When in step 4, the “download” button is clicked, the file opens in a new tab. The user then has to download/save this web page to your computer, as in the figure below. The user clicks the 3 dots item on the right hand top side of the browser. Then the user chooses the “More tools” option followed by the “Save page as” option. The location can be chosen by the user and the file will be downloaded/saved as a csv file. The file can be opened in excel and the following steps are the same as in the above option.



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Annex: Detailed description of Costed Items of the ESFT Dynamic Costing Tool in the PLUS Inputs 3 Worksheet

In the 'Plus Inputs 3' sheet, the tool presents, as a result of a consultative process, each costed item that countries should require to establish the capabilities for responding to COVID-19, as part of Pillars 1-8 of the PSRP, and for the capabilities of mainainting the delivery of essential services, as part of Pillar 9 of the PSRP. As noted earlier, users can add items within each pillar, if a country/user finds the need for other components not covered by the items noted in this sheet.

This sheet brings together the inputs from the 'PLUS inputs 1' and 'PLUS inputs 2' sheets to populate a column with unit costs (or prices) as well as the required quantity of each unit. Users are encouraged to adjust the quantities required, inserting new values in column R, and if the unit cost/price values in column J need to be changed, these should be changed directly in this column. The tool will then calculate total costs in column S, which will then populate the next sheet that displays results, and the final sheet that will be uploaded to the COVID-19 Partners Platform.

To better understand what each item in the PLUS Inputs 3 sheet covers, the following table lists each item, as they appear for each pillar in the tool, and provides more detailed explanation of their content.

Table A1. Costed Items of the ESFT Dynamic Costing Tool

Satellite comms	Satellite communications equipment for coordination teams involved in the COVID-19 response. This includes a video wall and satellite phones.
Incident management and coordination team	These are the coordination teams activated as part of COVID-19 response, and includes salary costs for team members, a 4x4 vehicle, a driver, monthly fuel costs, phone credit for team members and the cost of renting an office for each team
Incident management training	In-person training workshops for local focal points on incident management and coordination, which includes the cost of the meeting room, fee for the trainer, per diems for participants and the trainer, and optional lines for course materials and catering.
Incident management international	The cost of an international consultant specializing in incident management, covering their salary, per diems, travel and additional fees for managing or coordinating incident management training nationally.
Incident management national	A local incident management consultant, to support and complement the work of the international consultant.
Risk communications team	A team entrusted with managing and delivering essential communications related to COVID-19 and its risks, which includes salary costs, mobile phone credit costs, a vehicle with

	a driver, and its related fuel costs, as well as renting an office for the team
Communications cost 1	Cost to broadcast COVID-19 messaging on national TV channels
Communications cost 2	Cost to broadcast COVID19 messaging on national and local radio stations
Communications cost 3	Cost to broadcast COVID-19 messaging in national and local print media (newspapers)
Communications cost 4	Cost to print large posters with COVID-19 messaging, to be placed in locations such as public health centers
Communications cost 5	Cost to print smaller flyers with COVID-19 messaging to be placed in locations such as public health centers
Risk communication local media	Cost of hiring a local public relations firm to design, implement and manage a media campaign on COVID-19 and safe care-seeking
Social media team to distribute safe care messaging	Salary costs for a social media team to share COVID-19 and safe care seeking messaging
Mapping of 'influencers' in the public health community, and creation of mechanism (with workshop) for channelling key information to these individuals	Cost to hire a local consultant to identify and help the social media team to work with national social media personalities to spread essential COVID-19 and safe care-seeking messaging,
Risk communication national	Costs to hire a local consultant specializing in risk communications
Risk communication international	Costs for an international expert on risk communication, including a salary, per diems, travel costs, and coordination of workshops with local social media representatives
Contact tracing team-phone	Costs for a contract tracing team working out of a mobile phone-bank, which includes salaries for the team and a supervisor, training and mobile phone credit
Contact tracing team- in person-capital	Motorcycle purchase for contact tracing teams that need to make home visits to trace suspected COVID-19 cases
Contact tracing CHWs -phone	Costs for a mobile phone bank-based contract tracing team, manned by community health workers currently part of the public health system, including costs of a supervisor, training and mobile phone credit
Contact tracing team- in person-rec	Costs for contact tracing teams that need to make home visits, including salaries and hazard pay for staff and supervisor, training costs, fuel, maintenance and operations costs for motorcycles, and masks, gloves and hand hygiene (hand sanitizer) .
Contact tracing CHW team- in person-rec	Costs for contact tracing teams that need to make home visits, as above, but which do not include salary costs, as contract tracers will be community health workers already part of the public health system
RRTs	Costs for a rapid response team, which includes salaries, two cars with drivers, large monthly fuel costs, mobile phone credit, and the cost of renting an office, but excludes any specific medical equipment required by rapid response teams
RRT and Surveillance international	Cost of an international consultant to support the coordination and training of rapid response teams and of additional surveillance functions activated as part of the COVID-19 response
RRT and Surveillance national	National expert on rapid response teams and epidemiological surveillance, to support the subnational efforts to establish RRT and surveillance capabilities necessary for COVID-19 response
Surveillance team	Teams to carry out additional epidemiological surveillance related to COVID-19, which include salaries, cars with drivers,

	fuel costs reflecting extensive daily travel, mobile phone credit and the cost of renting an office for the team
Surveillance and RR training	In-person training sessions for surveillance and rapid response teams on the particular requirements imposed by COVID-19
Training on POE duties (all coordination levels)	Remote training for staff at Points of Entry related to additional duties required as a result of COVID-19, including screening, isolating and specimen/suspected case transportation
Technical support - Workshops to develop SOPs, guidelines, public emergency plans	A national consultant entrusted with the task of creating planning documents for Points of Entry in new COVID-19 related tasks, such as screening and isolation
POE team	Additional staff to carry out new tasks at Points of Entry, including salary costs, a car with a driver, fuel costs, mobile phone credit and the cost of renting an office
POE international	An international consultant to coordinate the strengthening of Points of Entry, including salary costs, per diems, travel costs and costs of coordinating training of POE staff
PPE equipment for POE staff	Basic daily/weekly personal protective equipment for all staff at Points of Entry, including aprons, gloves, face shields, masks, and goggles
Testing equipment for POE staff	Extraction and transportation equipment for specimen collection at Points of Entry, including an extraction kit, triple packaging boxes, swabs and a viral transport medium, and a safety box.
Lab equipment	Additional diagnostic equipment that is necessary to be purchased to process the necessary COVID tests predicted by the ESFT, including near-patient PCR machines, manual PCR machines and thermocyclers for RT-PCR.
Additional automated extractors	Purchase of automated extractors to increase the number of diagnostic tests manual PCR machines can process in a day
Laboratories international	An international consultant to support the re-distribution of diagnostic capacity, or the purchase and implementation of additional diagnostic capacity to process COVID-19 diagnostic tests, as well as support the national plan for creating or increasing COVID-19 testing
Laboratory consumables	Consumables and reagents for all additional diagnostic testing related to COVID-19, including specimen transfer, and PCR cartridges and reaction kits. This is a product of the testing strategy employed and the estimated number of COVID-19 cases in a country during the period of estimation.
IPC team	A team to focus on Infection Prevention and Control, both within health facilities and in the community
PPE equipment for COVID-19 Response	Personal protective equipment for health workers (and patients) in the delivery of COVID-19 care. This includes gowns, gloves, masks, goggles, face shields, respirators, and others, and is a product of specific PPE profiles for different types of health workers, and the respective number of COVID-19 cases that a country is expected to provide care for during the period of estimation, and the number of health workers involved in the delivery of essential health services.
IPC Training	In-person training workshops at the local level on infection prevention and control strategies, covering the cost of room rental, trainer fees, per diems and optional costs of materials and catering.
IPC international	International expert on infection prevention and control, to coordinate IPC messaging and training on IPC nationally. Costs cover salary, per diems, travel and training expenses.
IPC national	Local consultant to support with IPC messaging and the implementation of IPC measures.

Hygiene Commodities	Goods and supplies used to ensure hand hygiene in health facilities as part of COVID-19 care. This includes disinfectant, soap and hand sanitizing gel. These costs are a product of the number of health care workers delivering COVID-19 care, as well as the number of patients receiving care, and the number of health care workers hired delivering essential health services.
Handwashing stations piped	Costs to operate a handwashing station that is able to connect to a potable water source. These would be for new handwashing stations in health facilities or in the community, depending on the forecasted number of COVID-19 cases. Costs include water, soap, maintenance of the HWS and masks and gloves for volunteer attendants of the HWSs.
Handwashing stations trucked	Operating costs for handwashing stations that is unable to connect to a potable water source, being identical to that of the above, but with a significantly higher cost of water.
Water storage tank	Cost of a plastic tank to store water to be used by 2 handwashing stations for a week, in situations where these cannot be connected to a potable water source.
Handwashing station capital	Costs to install a temporary handwashing station, which include a small water tank, a tap, a basin and a stand.
Cloth Masks	Cost of multi-use cloth masks for the general public. These are costs attributed to the health sector and distributed as part of efforts undertaken to undertake contact tracing visits to homes without an active cell phone line. This excludes the costs of cloth masks for the rest of the population who need them and are able to afford them.
20 beds field hospital facilities & furniture module	Costs to set up the spine (infrastructure, furniture and non-specialized medical equipment) of a 20-bed field hospital for the delivery of COVID-care
20 beds field hospital energy module	Costs of equipment to provide energy/electricity to the medical/lighting and other equipment in a 20-bed field hospital
20 beds field hospital Wash module	Water and sanitation equipment and operation costs for a 20-bed field hospital
Drugs & consumables	Drugs, pharmaceuticals and medical supplies as part of delivering COVID-19 care. This is a product of the number of COVID-19 cases estimated, and the severity of these, and the capacity of each country to treat these, depending on the number of health facilities, health workers or diagnostic capacity.
Biomedical equipment	Costs of additional biomedical equipment required as part of delivering COVID-19 care. This is a product of the number of COVID-19 cases that are estimated as being treated in a country.
Consumables and accessories for biomedical equipment	Costs for the consumables and accessories of the biomedical equipment needs estimated above.
Incentives for health workers prioritized for delivery of COVID-19 care	Incentives given to health workers who will be part of delivering COVID-19 care. These include supplemental health insurance, food, lodging and transportation, in addition to cash incentives, and amount to an equivalent of 50% of the usual salary of each cadre of health worker
Hazard Pay for health workers delivering care during COVID-19	As part of health care during COVID-19, health care workers are entitled to receive hazard pay to compensate the additional hazards or risks they are taking, in interacting with confirmed/possible and suspected COVID-19 cases without being able to practice social distancing. This is proportional to 25% of each health worker cadre's normal wage.

Case management international	International consultant on case management and the organization of delivery of COVID-19 care, including costs of wages, per diems, travel and training workshops
Case management national	National consultant supporting the local coordination and management of COVID-19 care
Body Bags	Body bags to properly dispose of COVID-19 fatalities, in line with IPC guidelines.
Safe Burial Team	Costs of a team to carry out safe burials of those who pass away as a cause of COVID-19, covering wages, personal protective equipment, digging equipment, rental of a truck, fuel costs and wages for a driver.
Logistics - setup equipment	Additional logistics and supply chain equipment to help manage the procurement, distribution, storage and delivery of pharmaceuticals and medical goods required for COVID-19 care
Logistics team	A team to coordinate the logistics of COVID-19 supplies and medical goods over an area of interest, covering wages, a car with a driver and related fuel costs, mobile phone credit, and rental of an office.
Warehousing recurrent costs	Additional costs beyond the rental of warehouses, in the supply chain of COVID-19 goods and supplies, including the security of these during their transportation and distribution.
Rental of 2000 pallet warehouses	Cost to rent additional warehouses to store the goods and supplies necessary in delivering COVID-19 care.
Logs national consultant	Local consultant to support in the processes to effectively manage the additional logistics requirement of handling COVID-19 goods and supplies, and the subnational level.
Logs international consultant	International consultant to help manage and coordinate the national logistics capabilities needed to handle the additional goods and supplies required for delivering COVID-19 care. Costs include wages, per diems, travel and fees to direct and coordinate training workshops.
Logistics management workshops	Training workshops on the exceptional needs that will be placed on logistics systems as a result of large needs of medical goods and supplies as part of delivering COVID-19 care, and the additional processes workers need to take as part of COVID-19 infection prevention and control.
Package of services including online validation by consultant for protocols governing EHS delivery, assessing delivery of EHS to map referral pathways	Local consultant entrusted with the task of how an essential set of health services will be delivered during a COVID-19 pandemic, including validation workshops for these.
Package of services including online validation by consultant for activating phased protocols	Local consultant tasked with created protocols and guidance on when to activate the transition of health services to a more restricted essential health service package, and the transition of services to different facilities of levels of care.
Team for monitoring EHS, health facilities, health workforce and supplies/logistics to deliver essential services	Costs for a central coordinating team for the continued delivery of essential services, which comprises management of services, health facilities, the health workforce to deliver the identifies health services in specific health facilities, and the delivery of pharmaceuticals and other health goods to ensure the continuation of these services
Development of a training package on EHS and triggering their activation	A local consultant tasked with creating training materials on the new essential health services package, and the steps to follow when a shift to this package has been announced
Training of each EHS focal point in each Incident management team	Remote training for at least one member of each incident management team on the activation of the EHS and the transition to the delivery of these services and a cease or re-distribution of current health services

Package of services by consultation generating a list of EHS and identifying services that can be delayed or relocated, progressive phased reduction of services, including online validation,	Local consultant entrusted with identifying the list of essential health services, by identifying currently delivered services that can be dropped or delayed, and those that can be delivered at other levels of care. This also includes the staging and sequencing of the transition from the current delivery of care to the new EHS package. A validation workshop and incorporating feedback from stakeholders is a key part of this work as well.
Survey of existing datasets, database and functional mapping including on-line consultation	Consultant entrusted with creating a database and geospatial mapping of health facilities and the services they do (and could) deliver, based on a survey of existing databases and information on health facilities. This also includes a remote valuation of the results of this consolidated database and mapping.
Simple ambulance rental for transfer of patients from designated COVID-care facilities to other health facilities, according to functional mapping	Rental of basic ambulances to transfer patients requiring complex care from facilities designated as only delivering COVID-19 care to facilities that will continue delivering essential services
Subnational support team for management of first level hospital emergency care units	Salaries of a team to help the operation of consolidated first level hospital emergency care units as the facilities that will continue to deliver the essential care delivered in all hospital levels that can no longer continue as before, due to the designation of certain facilities as delivering COVID-19 care
Subnational hotline for first level emergency care units to seek assistance in managing complex care	Salaries for a team of specialists in complex care to remotely support and answer questions and inquiries of health care workers staffing the emergency care units in first level facilities that will be delivering complex care for (possibly) the first time
Biomedical equipment to re-purpose/bring to capacity existing facilities into first level emergency units	Cost of additional biomedical equipment to strengthen existing health facilities to create first level emergency units that can deliver all the essential services noted in the EHS.
Development of training materials for outreach-based delivery of essential health services, for previously facility-based health workers	Consultant entrusted with developing training materials (a course) on how to deliver essential health services in the community, particularly aimed at health care workers who have always delivered care in facilities.
Training for facility-based health worker to being outreach-based delivery of essential health services	Remote training sessions for health care workers on delivering a package of essential services directly in the community
Training for re-distributed health workers in managing acute care	Remote training sessions for health care workers who have been re-assigned to deliver the EHS in first level emergency care units in managing acute care
Development of training materials for first-level facility health workers in managing acute care	A consultant entrusted to develop a training course for health workers who will deliver the EHS in the consolidated first level emergency care units in acute care
Wages for observers to enforce social distancing at health facilities	As part of promoting social distancing, health facilities will be encouraged to hire observers to ensure social distancing amongst patients, and their wages or salaries are included here
Preparation of communications materials on safe care-seeking and which facilities to visit for which type of needs	Consultant entrusted with the task of developing communications materials on the changes to the services delivered at health facilities, and which facilities users should visit in order to receive which services
Develop protocol for screening of all patients, management patient screening program	Consultant entrusted with the task of identifying the steps or protocols for screening patients in all health facilities, including those who deliver only non-COVID-19 care
Development of training materials for screening and triage in non-COVID care facilities	Consultant entrusted with creating communication materials for health care workers to become familiar with screening and triage procedures for COVID-19 in non COVID care facilities.
Traning on screening and triage for staff at non-COVID facilities	Training for screening and triage of COVID-19 care for health care workers at non-COVID 19 facilities

Development of mechanisms for patient isolation and criteria/protocols for referral pathways, including on-line consultation or telehealth	Consultant entrusted with the task of identifying the mechanisms that can be implemented locally to continue to deliver essential health services for those who have tested positive for COVID-19 (or suspected cases) and the respective referral pathways for such cases
Consultant to map health worker requirements, set up database of existing health workforce, and run an online validation workshop	Consultant entrusted with the task of estimating the demands of health workers, by cadre, for both COVID-19 and essential health care, create a database of the existing size of the health workforce by cadre, and then present and validate the resulting gaps in a remote workshop with local stakeholders
Counsellor on occupational safety for health care workers	Wages for hiring occupational safety counsellors to provide support to health care workers during the pandemic, and to serve as a place for health workers to report PPE shortages or other failures to ensure IPC
National consultant to support infection prevention and control in non COVID-care facilities	Consultant entrusted with guiding health facilities not directly involved in delivering COVID-19 care to implement IPC protocols and help minimize the chance of transmission of communicable disease, particularly COVID-19, between patients and staff
Development/contextualization of training materials on IPC and PPE for health care workers in non COVID-care facilities	Consultant entrusted with creating communication materials and a training course for local health care workers on infection prevention and control, and the use of personal protective equipment and good hygiene as essential to preventing the spread of COVID-19, either as an adaptation or contextualization of existing global material or training courses, or creating something separate that is most relevant to the local context
IPC and PPE Training for health care workers in non COVID-care facilities	Remote training for all health care workers in non-COVID-19 facilities on infection prevention and control and the proper use of personal protective equipment and good sanitation
Consultant to map out necessary re-distributions of the health workforce	Consultant entrusted to work with the results of the consultant identified above who created the database of existing health workers and the map of health worker requirements to create a map of how the health workforce should be redistributed to meet the needs of continuing the delivery of essential health services, including in alternate health facilities.
Rapid training mechanisms and job aids for staff (mostly online) before entering or re-entering the health system	A consultant entrusted with creating materials for a remote learning course for health workers to be able to deliver the essential package of health services, with a separate module aimed at health workers who are no longer part of the public health system and will be re-entering to help meet the demands of delivering care during COVID-19
Administrator to manage HW need and numbers for essential HS delivery	Salary of an administrator to update the numbers of health workers needed to deliver the EHS within each administrative area, as the situation changes with the evolution of the COVID-19 pandemic locally
Team to coordinate health care workers who have shifted into delivering outreach-based essential health services	Costs for a team to assist and support health care workers who will be delivering health care as part of the EHS in the community, instead of in facilities, and changes in the quantities of these and responsibilities these may have as the COVID-19 pandemic evolves
Rapid review of possible mechanisms for surge capacity within the national logistics system, with on-line consultation with national authorities and stakeholders	A consultant entrusted with reviewing the possibilities of the logistics system to surge in order to continue to deliver the medical goods and supplies for the delivery of essential health services, while it has to manage and deliver the medical goods and supplies for the delivery of COVID-19 care. This includes a remote validation workshop with stakeholders in the health

	national logistics system, for the resulting proposed surge mechanisms.
Survey of existing datasets, to create database and map of stockpiles and providers of essential medicines and supplies, with on-line consultation of resulting map	A consultant entrusted with creating a database, that also creates a geospatial map of providers and stockpiles or warehouses of the medical goods and supplies required for the delivery of the EHS package, based on existing databases or active investigation. This also includes a remote workshop to validate the resulting map with stakeholders and participants of the national health logistics system.
Creation/programming of central communication platform between facilities/care providers and warehouses/distribution centers/ coordinator of logistics management system	In order to minimize the risk of facilities running out of essential medical goods and supplies, a consultant is entrusted with the task of creating a digital platform that allows communication between those who will be delivering essential health services, and the key points of the health logistics system
Plan and quantification for stockpile of essential goods	In anticipation of localized breaks in transportation, a consultant is entrusted with creating plans that specify the size of an emergency stockpile of medical goods and supplies to ensure the delivery of essential health services for a limited period of time
Develop a mechanism to allow for more rapid financing for essential services, as well as changes in allocations at the service delivery level, possibly outside the standard health financing mechanism and its standard procedures	Faced with the possibility of existing health financing becoming stretched in order to deliver COVID-19 care in addition to essential health services, a consultant will be entrusted to propose the creation of a mechanism to ensure financing for the continuation of essential health service delivery, possibly using emergency financing mechanisms, outside the traditional health financing system
Provide compensation to health facilities to compensate for loss of revenues from lost user fees (optional)	Given the impetus to eliminate user fees at the point of care as part of improving equity as part of responding to COVID-19, health financing of health facilities will be stretched. If a country decides to eliminate user fees as part of the COVID-19 response, a compensation by facility (proportional to its size/mean financing raised in the past) should be accounted for
Cash transfers for vulnerable population (optional)	Where the elimination of user fees is not contemplated, to ensure that people forego essential health care because they cannot afford it, a cash transfer program should be implemented, in line with the size/beneficiaries of existing cash transfers in the country/region
Staff to manage cash transfer program (if in operation)	In addition to the cash transfers itself, a team will be required to administer the cash transfer program, in order to set up the mechanisms for registration/eligibility and payment/distribution, among others
Train members of the community in initiatives for health and supporting isolated and vulnerable communities	Given the likely impact of COVID-19 on reducing the health care that individuals can receive, additional efforts should be made to support the most vulnerable communities, as well as isolated communities that already relied on non-traditional delivery mechanisms for receiving care. In line with minimizing in person care, a suggested first line approach is remote training for members of the community to be able to support and deliver non-complex care to the most vulernable and isolated.
Salaries of additional health workers hired	Accepting the fact that as many health workers will be prioritized to be part of delivering COVID-19 care, and while the demand for health workers to deliver the EHS package will be less than their traditional responsibilities, it is expected that there will be a health worker shortage for the delivery of essential health services. It is therefore anticipated that for every two health workers prioritized for COVID-19 care, 1

	additional health worker would need to be recruited to replace those who are now devoted to COVID-19 care.