SMALL & SICK NEWBORN CARE COSTING TOOL

User Manual

October 2024

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INTRODUCTION & OVERVIEW

Welcome to the User Guide of the **Small and Sick Newborn Costing Tool** commissioned by the Global Financing Facility to support planning & budgeting for scaling-up inpatient care for small and sick newborns at district level units.

To aid a 'whole system' approach for planning & budgeting, the tool builds on the 10 scale-up components of the model of care outlined in a recent WHO-UNICEF Expert and Country Consultation publication. (1)

The tool has six facility-level planning & budgeting modules covering the facility-level requirements for the following components: infrastructure, equipment & commodities, human resources, functioning referral systems, robust data systems, linkage of maternal and newborn care, family & community involvement and support, and post-discharge follow-up.

A national and regional planning & budgeting module focuses on the higher-level strategies including those related to the vision, political commitment, leadership & national plan component.

The financing component is addressed through two modules providing cost analytics to aid examining the strategic and financing implications of the scale-up.

The user guide provides instructions on how to work with the costing tool. Although it offers some practical recommendations about issues to consider when setting country standards and developing system strategies for the various components of the model of care, the focus remains on the steps involved in using the costing tool and not on the broader technical issues, which are out of scope.

The tool is available as a Microsoft Excel file that works with Office Version 365. Supporting resources include the Haryana case study and the reports on Costing the Scale-up of Level 2 Small and Sick Newborn Care Units in Zambia and Ghana, which were also commissioned by the Global Financing Facility.

BACKGROUND

Achieving the Sustainable Development Goal of less than 12 neonatal deaths per 1,000 live births by 2030 requires urgent action to scale-up facility care for small and sick newborns. This is reflected in Every Newborn Action Plan 2020-2025, which set a target of a functional Level 2 inpatient newborn unit to care for small and sick newborns in at least 80% of districts.

Achieving this target requires a comprehensive model of care that includes all the critical components of the scale-up, as well as the content of care, documented by the WHO-UNICEF Expert and Country Consultation paper. (1)

Many countries around the world have or are in the process of adopting standards and guidelines to ensure the scale-up delivers content of care that is of good quality. However, many face the challenge of unpacking 'what it takes' and how much it would cost to fulfill the system requirements of those standards and the proposed 10 components of scaling-up the model of care.

To support this exercise, the Global Financing Facility commissioned the development of an Excel-based costing tool that aids countries to plan & budget for a simultaneous scale-up of those 10 components.

Our work on the tool started in 2021, when the first round of consultations for the model of care for small and/or sick newborn care took place. (2) These consultations along with other global evidence on best-

practice (3 - 9) informed the tool development. To aid this process and provide a reality check for default assumptions and parameters, the Global Financing Facility commissioned a case study of Haryana, India (10), a setting where the scale-up was directly managed by the government.

The original tool was piloted in Zambia during the second half of 2022 and involved assembling and validating country standards for delivering small and sick newborn care at district facilities; collecting and validating cost data; and modeling costs across various facility typologies. The tool estimates were used to allocate one million dollars of funding and informed the analysis of 'what it takes' and how much it costs to implement the system requirements of good quality of care standards for small and sick newborns.

After the Zambia pilot, we produced a draft manual and a Beta version of the tool that were internally peer reviewed and shared with global partners at various points in time, including at a hybrid meeting hosted by USAID in June 2023 in Washington DC.

The articulation of the 10 components of scaling-up the model of care for small and/or sick newborns at district level (1), led us to further engagement with UNICEF, WHO and other global partners to ensure a closer alignment between the tool and the proposed model of care. As a result of these consultations, we produced a new version of the costing tool, restructured around the 10 components of the scale-up of the model of care, which we tested in Ghana during the first half of 2024. This exercise resulted in an updated version of the costing tool and the accompanying user manual.

THE TOOL STRUCTURE & THE 10 COMPONENTS OF SCALING-UP THE MODEL OF CARE FOR SMALL AND SICK NEWBORNS

The current tool consists of a single Excel file (.xlsm) with 11 worksheets, including one with general information. The information worksheet describes the tool version and date of release; presents the primary objective, which is to support planning & budgeting for scaling-up the model of care for small and sick newborns while ensure quality of services; and gives basic tips for using the tool.

Small and/or Sick Newborn Care Costing Tool

Tool Version: Version 2.0
Date of release: July 2024

Commissioned by the Global Financing Facility to support country planning & budgeting for the scale-up of Level-2 inpatient care for small and sick newborns

Disclaimers

This is an open-source tool. Any changes in the structure or formulas may result in errors.
The GFF is not responsible for the use of the tool or the results produced. These are entirely the responsibility of the user.

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General Information and tips

The primary objective of the tool is to support planning & budgeting for scaling-up good quality of care at Level II district facilities for small and sick newborns.
The tool covers all the components of the model of care proposed by the WHO-UNICEF Expert and Country Consultation and helps users to unpack 'what it takes' and how much it costs to implement country standards for each component.
Similar to a planning guide, the tool has been organised step-by-step. Users should go through worksheets and their steps sequentially.
A user manual with troubleshooting tips as well as additional information to support the use of the tool are available from the GFF
The tool operates step-by-step, so users should start with the first tab and go through each step, before moving to the following tab.
It is optimized for Excel 365. Using older versions may result in reduced functionality or errors
Before using the tool as a Microsoft Excel file make sure that all Macros are enabled.
To enable macros, go to the Excel menu and select the following:
File -- Options -- Trust Center -- Trust center settings -- Macro Settings -- Enable all macros.
Or select "Enable content" at the prompt when first opening the file.
Some office versions block by default all macros from files downloaded from the web
If this happens, close the file and before opening the file select:
Properties -- General -- Unblock
Due to compatibility issues, please do not use Google Drive to store or share this Excel file.
Doing so may corrupt the file or disable essential VBA functions, causing errors in calculations and overall functionality
Many cells are formatted with special styles and this will occasionally cause Excel to display a "Slow Workbook" message, which should be ignored.
Cells with formulae and worksheets have been protected. However users are able to transfer data to other workbooks for further analysis.
This workbook contains many named cells. When transferring data with the copy/paste commands, use "Paste special: Values and numbers format"
Graphs can be edited and copy/paste to other workbooks

There is also a navigation menu (shown below), which takes the user to the worksheets/tabs linking to each of the 10 components of the scale-up of the model of care for small and/or sick newborn care. The core of the tool consists of:

A blue colored tab for general inputs including basic system parameters and unit costs; seven green colored tabs for planning & budgeting for the first nine components of the scale-up of the model of care; and two dark teal tabs for the financing component, which include analytics of facility typology costs and scaling-up scenarios.

The green colored tabs for planning & budgeting start with the facility-level requirements for **infrastructure, equipment & commodities,** and **human resources**.

- ✓ We start with these components because they are cross-cutting, that is, they are also 'inputs' for establishing other components of the model of care. For example, a robust referral system requires facilities with adequate spaces, neonatal transport equipment and staff. The same can be said of the remaining components. Without a data clerk, office space and equipment, robust data systems cannot be implemented.

- ✓ So, when setting facility standards for infrastructure, equipment, and human resources the tool asks users to adopt a 'whole model of care' approach encompassing all the components of the scale-up of the model of care. For example, under the equipment module there are specific steps asking users to consider the equipment requirements of various components, including transport equipment for safe referrals and office equipment for data systems. And to ensure that this is indeed the case, there are probing questions in subsequent modules to remind users of the need to consider the equipment requirements of each component.

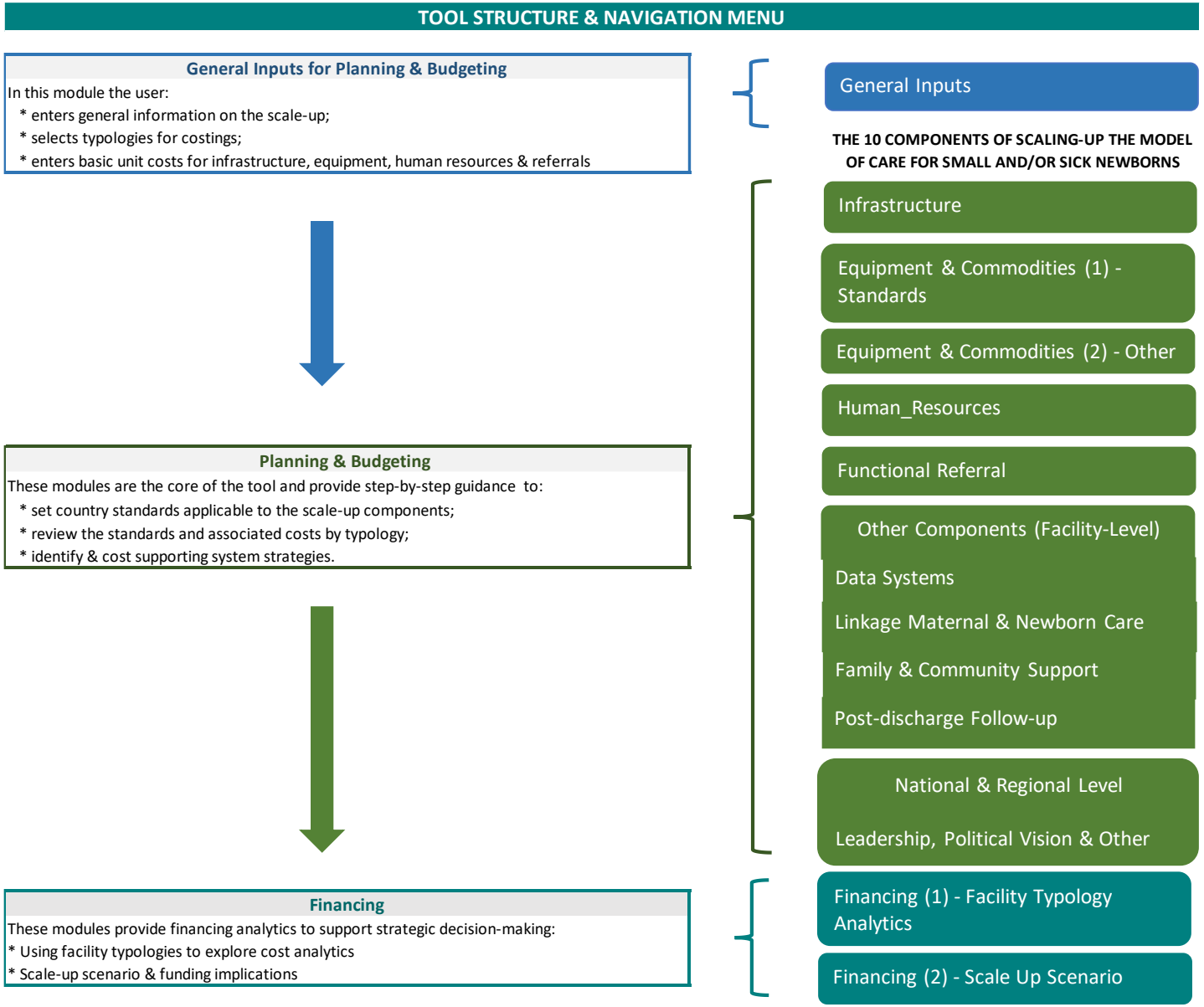
We have also included a separate facility-level planning & budgeting tab for **functioning referral systems**. The complexities surrounding their design and implementation, involve consideration of many variables, such as the requirements for setting up safe transport networks operating round-the-clock as well as systems for timely communication and effective coordination of care amongst various facility levels.

There are also planning & budgeting steps for each of the remaining facility-level components, that is, **robust data systems, linkage of maternal and newborn care; family and community involvement and support;** and **post-discharge follow-up systems**.

However, since they involve many inputs that are likely to have been covered under previous modules (e.g., staff time) or that relate to context-specific strategies that need to be costed at the outset, we did not build individual tabs. Instead, those components are listed under one single facility-level planning & budgeting tab (Other_Facility_Plan&Budget), which aids the use of the tool, while ensuring the system requirements of these components are given due consideration during the costing exercise.

Note that the national and regional planning & budgeting module covers the high-level system support needs of individual components, such as the development of national templates for facility guidelines and protocols, as well as high-level oversight and management of the scale-up. This will aid users to examine the strategies and associated costs for higher levels of governments to deliver their **vision, political commitment, leadership, and national plan** component of the model of care for small and sick newborns.

Finally, in line with the **financing** component, we have included two modules with cost analytics to aid country planners and budgeting officials to unpack the funding implications of the scale-up. The first module shows how capital and recurrent costs vary across typical facilities in the country. The second one can be used to estimate the costs of alternative scale-up scenarios over several years.


TOOL STRUCTURE & NAVIGATION MENU
General Inputs for Planning & Budgeting
In this module the user:
* enters general information on the scale-up;
* selects typologies for costings;
* enters basic unit costs for infrastructure, equipment, human resources & referrals
Planning & Budgeting
These modules are the core of the tool and provide step-by-step guidance to:
* set country standards applicable to the scale-up components;
* review the standards and associated costs by typology;
* identify & cost supporting system strategies.
Financing
These modules provide financing analytics to support strategic decision-making:
* Using facility typologies to explore cost analytics
* Scale-up scenario & funding implications
General Inputs
THE 10 COMPONENTS OF SCALING-UP THE MODEL OF CARE FOR SMALL AND/OR SICK NEWBORNS
Infrastructure
Equipment & Commodities (1) - Standards
Equipment & Commodities (2) - Other
Human_Resources
Functional Referral
Other Components (Facility-Level)
Data Systems
Linkage Maternal & Newborn Care
Family & Community Support
Post-discharge Follow-up
National & Regional Level
Leadership, Political Vision & Other
Financing (1) - Facility Typology Analytics
Financing (2) - Scale Up Scenario

APPROACH

The main purpose of the tool is to support planning & budgeting for the scale-up of small and sick newborn care delivered according to national standards and in alignment with the WHO/UNICEF model of care. It was thus important that the tool covered all the 10 components and that costings captured the system parameters set by country standards, while also accounting for variations in facility characteristics and costs across the country.

To cover all components, without overburdening users with a large data collection exercise for cost inputs, the tool uses rules-based costing and provides users with the opportunity to revise modelled estimates as required.

A systematic step-by-step process

The costing tool is organized along the lines of a planning guide, providing a systematic framework to help users identify and cost the system requirements for facilities to fulfill country standards of care for small and sick newborns.

All modules start with an overview and are organized in logical sequential steps that take the user through the system requirements under each component of the model of care. To facilitate the use of the tool, under each step there are brief explanatory notes (See example below for infrastructure)

This step-by-step approach in the planning and budgeting modules imply that first, an important number of user inputs such as setting country standards and identifying supporting implementation strategies are included in the corresponding planning & budgeting modules.

Second, relevant cost calculations also happen in these modules and there are review steps to sense-check results as you go along. These review steps make the tool's calculations transparent and can significantly aid the planning & budgeting process as they help you understand the impact of system parameters and what drives the results.

PLANNING AND BUDGETING FOR BUILDING/INFRASTRUCTURE

MODULE OVERVIEW

Enter country infrastructure standards, including:

*The required parameters to estimate the number of beds at each facility size

* Minimum floor space per bed

* Minimum floor space per facility area & facility circulation areas

If detailed country standards are not available, to initiate discussions in country, they can be sourced from the GFF case study or international guidelines

Review required floor space & associated costings for each type of facility, including building maintenance.

Remember:

Light blue cells are user inputs.

Yellow cells are tool calculations not to be manually changed

1.2. Enter formula parameters to estimate number of required beds based on population need:

Based on international guidelines & the GFF case study, approx. 15% of live births require special care & 7 days of ALoS ~ 3 beds per 1,000 live births

QoC strategies, inc. protocols and criteria for admission & discharge should be in place to ensure bed strength is adequate

In some instances UNICEF recommended 80% occupancy bed rate

Leave target occupancy bed rate blank if 100%

% of live births requiring special care	15%	**User Notes**
Target average length of stay (days)	7	Parameters based on UNICEF Guidelines &
Target occupancy bed rate	80%	GFF Case study

Costings are thus tailored to the system parameters of each country, which need to be set by the user. And users can take advantage of the fact that the costing tool algorithms, similar to implementation, require information on the 'specifics' of those system parameters to ground planning and budgeting discussions. Going through those 'specifics' in a systematic way can also focus discussions on 'what it takes' to set up a district level facility complying with country standards.

For example, to collect accurate cost data for equipment devices, detailed technical specifications for each device are needed. And to estimate the number of devices required at each facility, the user needs to specify the type of inpatient beds, the facility ancillary areas and the corresponding equipment-to-bed or equipment-to-facility ratios for each device, as well as any equipment requirements for providing safe transport to newborns.

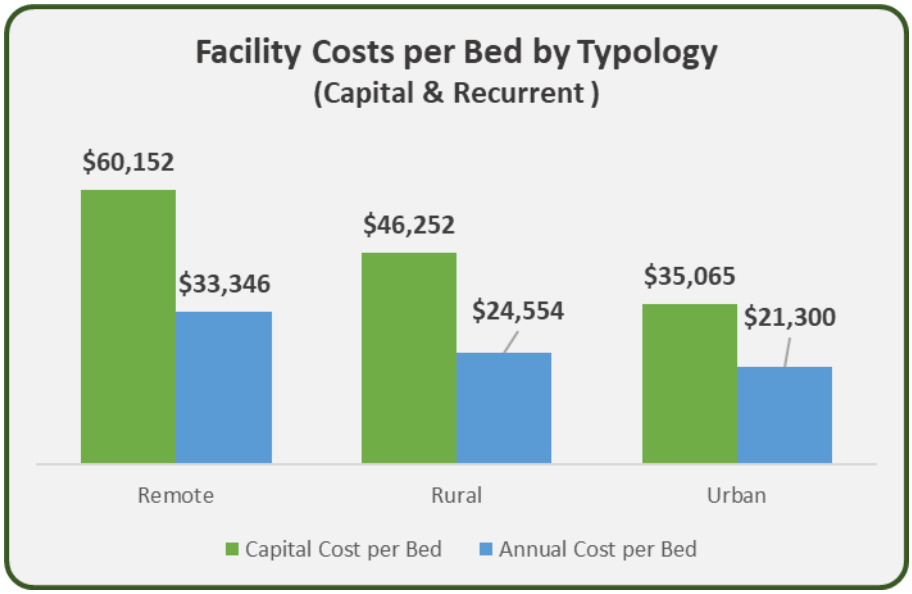
The use of facility typologies

Estimating detailed costings for each facility in a country would require extensive data collection, including Health Facility Assessments, and cost modeling for individual facilities, which might be impractical. On the other hand, facility characteristics and costs are likely to vary across the country. For example, facilities are likely to serve populations of different sizes and other factors such as location might affect the cost of service delivery. Estimating one single set of facility costs will fail to account for such diversity.

So, to capture cost variation across facilities in a country and to aid in producing more realistic scale-up budgets without the need for a massive data collection exercise, the tool allows you to simultaneously cost various typologies with minimal additional inputs. These typologies include Size (small, medium & large); cost/location (mid, high & very high cost); construction type (new construction & rehabilitation); equipment needs (major, partial & limited) and recruitment challenges (standard, hard-to-recruit & most challenging).

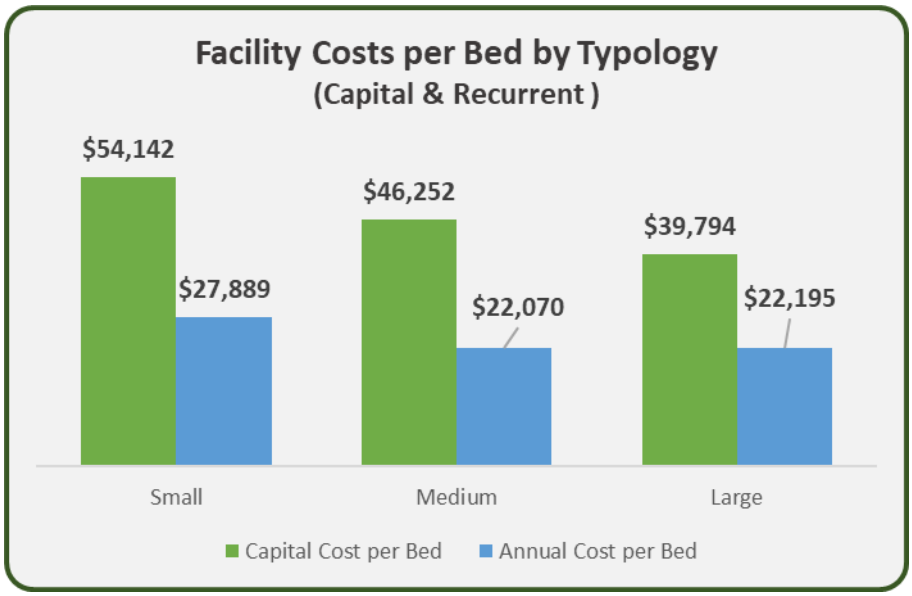
As you can see, the mix and match can produce many unique combinations of facility characteristics for which system parameters and costs can be simultaneously estimated. See for example a potential mix of typologies and expected costs per bed in a hypothetical scenario that typifies remote, rural, and urban facilities in a country.

Typical Facility Name/Description:	Remote	Rural	Urban
SIZE	Small	Medium	Large
COST/LOCATION	Very High Cost	High Cost	Mid Cost
CONSTRUCTION TYPE	New Construction	New Construction	New Construction
EQUIPMENT NEEDS	Major need	Major need	Major need
RECRUITMENT CHALLENGES	Most Challenging	Hard-to-Recruit	Standard area



The simultaneous costing of typologies in the tool allows you to examine the impact that individual facility characteristics have on costs and implementation, for example by showing what it takes and how much it costs to deliver services for the mix of the typologies shown above. And you can rapidly cost other mix and match of typologies such as the one below, where the only characteristic that changes across facilities is the size.

Typical Facility Name/Description:	Small	Medium	Large
SIZE	Small	Medium	Large
COST/LOCATION	High Cost	High Cost	High Cost
CONSTRUCTION TYPE	New Construction	New Construction	New Construction
EQUIPMENT NEEDS	Major need	Major need	Major need
RECRUITMENT CHALLENGES	Standard area	Standard area	Standard area



As discussed under the various planning & budgeting modules, you can also take advantage of the tool typologies to estimate a range of values rather than a single point estimate (e.g. mid-cost, high-cost and very high cost), which give you a more realistic picture of the expected facility costs as it captures some of the inherent uncertainty in this type of modeling exercise.

Normative costings

The tool's costings are normative, that is, the model estimates the financial resources needed to deliver the model of small and sick newborn care in compliance with national standards and the associated system parameters set under each planning & budgeting module. So, the first step under each module is to identify the specific system requirements for delivering good quality of care according to country standards, which drive cost estimates.

Balancing accuracy and model complexity

In producing a comprehensive set of costings for the scale-up it was important to balance accuracy of cost estimates versus a data-hungry and complex model that would risk overburdening users. The following guiding principles informed the overall costing approach:

First, more detailed costings are produced for large items or when greater level of detail supports more effective planning, as is the case with human resources and equipment devices.

Second, to prevent users spending a disproportionate amount of time and effort collecting data for less strategic items, such as those representing minor costs, alternatives to the ingredient costing approach are used. For example, for items like supervision or coaching visits, rather than detailing costs for individual 'ingredients' such as travelling, per diems and allowances, users are asked to provide an average cost per person, which is usually available in various planning and budgeting documents. For other relatively minor items such as building maintenance a rules-based approach (e.g., the percentage of a new building value) is used.

Third, even for larger items, rules-based costing is used if we judged that data were not readily available in many settings or if collecting such information would have involved a considerably large data collection exercise.

For example, as discussed under the relevant equipment module, detailed costings for consumables and renewables would need estimating the number required every year for each device and collecting unit price data. This would have substantially increased the data requirements of the model. So, in this case we also opted for a rules-based approach to facilitate obtaining cost estimates during the planning and budgeting phase. However, the tool allows users with access to more detailed information or historical data to override rules-based calculations.

Limitations

The tool objective is to cost the delivery of small and sick newborn care at district hospitals and so it includes a detailed planning & budgeting module for functioning referrals, which costs associated with Level 2 facilities, including the provision of safe transport. However, the system requirements for pre-referral stabilization services at lower level facilities are not costed within the tool.

Facilities, not individual health interventions, are the main unit of analysis. The tool does not include epidemiological modeling to estimate the expected intervention coverage and associated health benefits of

scaling up Level 2 facilities in a country. All costs are estimated at facility or higher levels (i.e. national or regional), without allocation to individual interventions.

Since the tool aims at supporting planning & budgeting processes, the focus is on estimating the 'cash flow' associated with the scale-up. All costings are based on available direct market prices without further adjustments. This needs to be taken into consideration if the tool estimates are used to inform economic evaluations.

Users should also note that although the tool could potentially be used to cost individual components of the model of care (e.g., equipment or human resources), there are important linkages between those components that call for an all-around costing exercise that includes all of them. For example, the required number of equipment devices is influenced by the distribution of inpatient beds within each facility. Likewise, if the purchase of a vehicle for referral transport is included, this might also have implications for human resource costs as drivers might be needed.

THE COUNTRY PROCESS

Before discussing each of the tool modules, it is important to understand what the country process entails, from setting the objectives and scope of the exercise to assembling the necessary input data required by the tool.

Since the primary objective is to support planning & budgeting for the scale-up of small and sick newborn care, we will also examine how the process of using the costing tool can contribute to developing more realistic plans & budgets.

DEFINING THE OBJECTIVE & SCOPE

The objectives of the planning & budgeting exercise for the scale-up need to be identified at the outset of the tool application. These objectives can include for example supporting further detailing of country standards for small and sick newborn care; identifying how many facilities complying with those standards could be funded within a given resource envelope; unpacking 'what it takes' to set up those facilities with a view to define a strategic roadmap for the scale-up; or estimating the expected costs to achieve the Every Newborn Action Plan target of 80% of districts with a functional facility delivering care for small and sick newborns.

The application of the costing tool can serve any of these objectives. For example, in the planning and budgeting modules we discuss how the intermediate system and costing results can be used to inform stakeholder discussions on 'what it takes' to implement country standards across each component of the model of care. In the last two modules we discuss how the tool data analytics can be used to inform the strategic direction and financing implications of the scale-up.

The scope of the costing tool application will however be dictated by the extent to which detailed country standards and guidelines for each component of the small and sick newborn care model are available. This scope will define the various ways in which you can use the costing tool to support planning & budgeting as well as the level of involvement required from stakeholders during the exercise. We have thus identified the following two scenarios:

Scenario One: Detailed country standards and guidelines are available

This scenario represents a country that has already developed some detailed guidelines and standards to establish a district level facility (i.e., Level 2) delivering care to small and sick newborns.

In this scenario, a light involvement of stakeholders might be feasible, at least regarding reviewing the country standards applicable to infrastructure, equipment, and human resources. However, they might still need to devote their efforts to the development of the less easily standardized strategies for delivering each component of the model of care. On the other hand, since this is a rapidly evolving field, further engagement of stakeholders might be required to validate country standards against best-practice, including upcoming WHO & UNICEF global norms for small and sick newborn care.

Scenario Two: No detailed country standards and guidelines are available

This scenario represents a country that has perhaps adopted broad international standards but is yet to develop detailed standards and guidelines. In this scenario the tool can be used to support their development.

For example, you could first draw on international evidence to undertake a rapid modeling exercise of a scenario that adapts suitable international standards to the local context and cost them. You could then use the results of this exercise, including the system parameters modeled under each component of the model of care to bring stakeholders together to unpack those results. The purpose of the exercise is not to use modeling to supersede the country process of developing country standards, but rather to use the modeling results to initiate those discussions.

Stakeholders can then identify the next steps for detailing country standards and draw on the costing tool to help ground those discussions. As we discussed earlier, the costing tool, like implementation, requires 'specifics' on the system requirements to fulfill standards of care, so it can provide a reality check for stakeholders to ensure that standards are detailed enough for costing and for providing guidance during implementation.

We will revisit these two country scenarios when discussing the tasks involved in assembling the information required for the costing tool application.

GETTING STARTED

Reading the user manual and going through each of the worksheets in the costing tool will help you become familiar with how the tool works and the type of information required. The reports for Zambia and Ghana, available as annexes, will be useful to illustrate the level of detail required for this exercise (i.e. in terms of system parameters for infrastructure, human resources and equipment), as well as the types of analytical work that the use of the tool facilitate in country.

Setting up a team

The composition of the team leading the tool application will vary, but would generally consist of a team leader, a technical advisor, and a research assistant/data collector. Broadly speaking, the following mix of skills would be recommended: knowledge and experience of small and sick newborn care; a good understanding of the country health delivery system; familiarity with the relevant standards of care at national and/or international level; a basic understanding of Microsoft Excel; experience in engaging stakeholders and facilitating workshops; and some experience in costing, budgeting and data collection and validation.

In addition to leadership from the Ministry of Health, the group of stakeholders supporting the tool application might include nurses and doctors working with small and sick newborns, academics as well as relevant representatives from government agencies and development partners.

Environmental scanning

Once you are familiar with the type of information needed to use the costing tool, the first step is to undertake an environmental scanning with focus on country standards and guidelines for each component of the model of care for small and sick newborns at Level 2 facilities. This should be done even before developing a plan for data collection, validation, and analytical work, as this will depend on the results of the environmental scanning.

Even for countries in Scenario One, it is likely that there are gaps in the available information. And the less detailed the country guidelines, the more time will be required to identify the system parameters that are applicable in the local context and the more time stakeholders will need to invest in validating those

parameters. This is true not only for the tool application, but for developing a realistic plan and budget for the scale-up.

The objective of the environmental scanning is to provide context for the exercise and, more importantly, to examine the information provided by the country standards and guidelines, which are the primary source for the tool system parameters, such as the floor space requirements per bed or the number of nurses per facility.

Generally, available documentation on strategies related to each component (e.g., development of facility referral protocols) will be useful to inform the modeling of scale-up costs. This information might be available from recent project reports and evaluations and should be included in the environmental scanning. However, it is likely that this information is best identified at later stages of the project during the stakeholders' engagement and discussions.

The environmental scanning should also include relevant policy and planning documents, such as plans, investment cases and situational analysis covering newborn care. These documents are useful to provide context and could also aid identifying system strategies related to the various components of care.

Country guidelines and standards

Once the country guidelines and standards have been sourced, it is advisable to validate this information against WHO & UNICEF global norms (likely to be available in the second half of 2024) and discuss any discrepancies with stakeholders. After this validation, you need to identify the level of detailed parameters available, such as the list of devices, their specification and the number of devices required per bed and/or per facility. Then you extract the relevant data, clearly identify gaps, use international evidence to fill them in, and validate system parameters with stakeholders.

There are some added benefits of this process. First, information gaps in country standards can hamper implementation if expectations are not clear and facility managers need to reinvent the wheel every time a facility is set up. Second, the process of validating country standards and guidelines provides stakeholders with the opportunity to examine if the required standards are adequate to deliver quality of care and realistic given the current system constraints.

In an ideal world, detailed information on all the system parameters is already available in country standards and guidelines. However, if this is not the case, the question then becomes: what is the minimum information that you need to get started with this exercise?

The minimum information in terms of system parameters has been included under the General Inputs sheet as shown below. This includes the type of inpatient beds; the list of facility areas; the list of essential equipment devices and staff categories.

Note that the corresponding planning & budgeting modules are built upon these lists, so securing this information is a crucial first step to get started with the exercise and plan the data collection, validation, stakeholder consultations and analytical work required.

STEP 3 -ENTER BASIC INFRASTRUCTURE STANDARDS & UNIT COSTS FOR CONSTRUCTION

3.1 Infrastructure Standards - Enter type of inpatient beds required at SNCUs

Enter only inpatient beds. Beds for family members not staying with the newborn should not be included here.

	User Notes
Type of Inpatient Beds	
High Dependency	
Low Dependency	
Transitioning	

3.2. Infrastructure Standards - Enter the other facility areas, such as outpatient care, ancillary and support services

Remember to account for space requirements of all components of the model of care, including post-discharge follow-up and family and community inv
This also includes office space requirements for management, data systemts & liaision with with other facilities regarding linkages and referrals
Any areas for accommodation of family members not staying with the newborn should be included here.

	User Notes
Type of Facility Service Areas	
Counselling area	
Family facilities, inc. for mothers	
Nursing station	
Nursing office	
Staff Rest Areas	
Staff washrooms	

STEP 4. ENTER LIST OF ESSENTIAL EQUIPMENT (as per standards) & UNIT COSTS

4.1. Enter list of essential equipment and unit price (inclusive of warranty) for each device

Equipment list to be sourced from country standards & guidelines.
The list should include all essential devicesto deliver quality of care inc. those required for mothers and referral transport
If standards are not available, as a starting point for discussions, the list can be sourced from the GFF case study or international guidelines
Do not enter office furniture or equipment here
Note: you can enter data manually or to facilitate data entry you can also copy/paste into these cells

LIST OF ESSENTIAL EQUIPMENT	Unit price inc. warranty	User Notes
Bassinet with trolleys	$269	All equipment @ lowest price available
Beds (rooming in)	$462	
Radiant warmers	$1,923	
Incubator	$1,692	
Thermal blankets (reusable)	$115	
Fluid warmers	$269	
Pulse oximeter (hand held not portable)	$62	
Without oxygen - with electric -CPAP with accessories	$1,220	Consider availability of oxygen and power
Without electric -CPAP with accessories	$1,220	
Infusion pump	$369	
Suction machine	$192	
Intensive phototherapy unit	$385	
Syringe pump	$577	
Bilirubinometer	$650	
Oxygen concentrator	$846	
Oxygen Analyzer	$200	
Oxygen Cylinder, Medical Use-Type H with Valve and Cap	$292	
Oxygen Cylinder, Medical Use-Type D	$92	
Oxygen blender (where medical air available)	$769	
Multipara monitor Patient monitors at least 3 of NIBP, HR, Sp0, ECG, RR, Temp	$654	
Spot Vital signs monitor with trolley	$2,154	
Apnoea monitor	$200	
Vein finder	$846	
Autoclave Sterilizer	$692	
Crash Cart (Emergency Cart)	$423	

STEP 5. ENTER HUMAN RESOURCES -CLINICAL & SUPPORT- (As per standards) AND UNIT COSTS

5.1 Enter categories of facility staff and annual cost per FTE for facility typologies included

Categories should include clinical & support staff needed. To be sourced from country standards & guidelines.

Make sure the list includes human resources required for all components, such as drivers for ambulance referrals, data officers for information systems or support staff for post-discharge follow-up

If not available, the list can be sourced from the GFF case study or international guidelines as a starting point for discussions in country.

Note: Column headings will be blank if a typology was not included

List of Human Resources Required & Annual Costs per FTE				
	STAFF RECRUITMENT FACILITY TYPOLOGIES			
	Standard area			User Notes
Staff Category (Clinical & Support)	Annual costs inc. salaries, allowances, etc.			
Neonatologists	$10,596			
Paediatricians	$10,596			
Medical officers	$8,000			
Specialist neonatal/paediatric nurse	$8,183			
Neonatal/Paediatric Nurses	$6,426			
General nurses	$4,829			
Enrolled nurses	$2,327			
Biomedical engineers	$6,426			
Medical laboratory scientists	$6,426			
Respiratory therapists	$4,829			
Receptionist/Call centre staff	$1,705			
Orderlies	$1,459			
Ambulance drivers	$3,627			
Paramedics	$2,994			
Security guards	$2,414			

ASSEMBLING THE REQUIRED INFORMATION & OTHER ANALYTICAL WORK

Once the scope of the exercise has been set, the stakeholders engaged, and the environmental scanning undertaken the next steps focus on assembling and validating inputs; estimating costs and undertaking other analytical work as required to support the objectives of the exercise.

These processes will vary from setting to setting, depending on the level of engagement of stakeholders, and whether there are on-going mechanisms to support the planning & budgeting for the scale-up. However, to illustrate what these processes might entail, we describe some of the tasks involved, which take into consideration the two country scenarios earlier discussed.

Scenario One: Detailed country standards and guidelines are available

In this scenario, detailed facility guidelines covering an important number of components of the model of care are available, so the minimum information to get started can be sourced from available country documentation. It is also highly probable that at least some of the additional parameters required, such as number of equipment devices and staff-bed ratios for nurses and doctors, is also documented. So, a considerable amount of work and modeling can be undertaken with relatively light inputs from stakeholders.

With a view to assemble the required information and undertake the analytical work, tasks might be organized as follows:

1. Identify system parameters requested in the General Inputs Sheet and extract the relevant information from available country documentation.
2. Wherever possible, triangulate country parameters and standards against the upcoming WHO & UNICEF global norms for small and sick newborn care, which are expected to be released after the publication of this manual.

3. Identify and address gaps in the extracted information drawing on global norms and other international evidence, as required. For example, if country guidelines only mention clinical staff, you will need to include the ancillary staff required to deliver other components of the model of care such as a data clerk officer (robust data system) and a paramedic and ambulance driver (functional referral system).
4. Validate & finalize the list of parameters to be entered in the General Inputs Sheet.
5. Confirm the scope of the exercise, including facility typologies to be costed.
6. Start data collection of cost inputs included in the General Inputs sheet. This will allow you to undertake rapid modeling exercises to support the work of stakeholders when validating system parameters.
7. Identify additional information on system parameters requested in Planning & Budgeting Sheets for Infrastructure, Equipment & Commodities, Human Resources and Referrals.
8. Extract from country documentation the additional information required for those parameters as applicable to the facility typologies included in the exercise.
9. Review the extracted information and address gaps.
10. Collect additional cost data inputs required in Planning & Budgeting Sheets for Infrastructure, Equipment & Commodities, Human Resources and Referrals.
11. Use the costing tool to model expected costs of implementing country standards and document system parameters used.
12. Organize the first country workshop with the larger group of stakeholders to: (a) review and validate system and cost parameters for Infrastructure, Equipment & Commodities, Human Resources and Referrals considering the costing estimates produced, and (b) review the tool reminder menus for the remaining components of the model of care to identify those potentially applicable in the country.
13. Identify additional strategies required for those remaining components and undertake further data collection and triangulation to ensure strategies are detailed and costed.
14. Organize second country workshop with the larger group of stakeholders to (a) present estimates with the revised system parameters and (b) validate the strategies included for other components and their costs.
15. Undertake further analytical work, including revised costs and final country costing report.
16. Disseminate results and identify required steps to continue supporting the planning & budgeting of the scale-up.

Scenario Two: No detailed country standards and guidelines are available

As earlier discussed, under Scenario Two there are no available country standards and guidelines, or the existing documents provide only very generic information. As a result, it is not possible, for example, to identify the lists of types of beds, facility areas, equipment and human resources required, which for the purposes of modeling would need to be adapted from available international evidence, including the upcoming WHO & UNICEF global norms.

If stakeholders decide to draw on available international evidence to undertake a rapid modeling exercise to support the development of facility standards and guidelines, the following process and tasks might be advisable:

1. In the absence of detailed WHO & UNICEF global norms, identify in the international literature a setting with detailed standards and guidelines that are appropriate to inform the choice of initial parameters in the local context.
2. Select a facility size typology for the exercise and decide which other typologies (e.g., cost/location) would be useful.

3. For the selected facility size typology extract information on system parameters required by the costing tool. Include those in the General Inputs Sheet, as well as Planning & Budgeting Sheets for Infrastructure, Equipment & Commodities, Human Resources and Referrals. Make sure that the basic requirements of the remaining components have also been considered.
4. Collect basic cost input data requested in the Inputs Sheet. Additional cost inputs in other planning & budgeting sheets might be collected if considered important to support discussions of stakeholders.
5. Country workshop to discuss the results of the modeling exercise and develop a plan of work for the country to develop country standards and guidelines with the level of detail required to effectively inform the scale-up of Level 2 facility care delivered to small and sick newborns.
6. Undertake further analytical work, including report writing.
7. Disseminate results and identify required steps to continue supporting the development of country guidelines and the future planning & budgeting of the scale-up.

In this scenario, a rapid modeling exercise is undertaken to provide an order of magnitude for the cost estimates and illustrate the level of detailed information required in terms of system parameters to provide guidance to those managing the scale-up and implementation.

While detailed WHO & UNICEF global norms are released, it is important to remember that there are important variations across available guidelines in terms of the required standards for delivering small and sick newborn care, including for example, staff and equipment facility ratios. A few considerations are thus warranted when examining the available international evidence and the suitability of those standards in the local context.

First, it is important to consider that there are linkages between the various components of the model of care, for example the number and distribution of the types of beds (e.g., high care vs. standard care) will have an impact on equipment and human resource requirements. So, there needs to be consistency in the source of system parameters when drawing on international evidence to undertake the modeling exercise.

Second, for facility parameters related to infrastructure and human resources, developing, and costing alternative standards might not be very time consuming, since the lists are relatively short and cost data relatively easy to secure. So, in some instances you might consider modeling alternative infrastructure and/or human resource standards to aid the discussions. This can include for example, floor space per bed or number of nurses per facility.

However, modeling alternative equipment standards might require substantial work. There are significant differences in the devices listed in international guides available; and collecting data on costs might be more time consuming as you might need to source it from more than one vendor. It is thus advisable to take these issues into consideration when deciding whether to estimate costs for alternative international equipment standards.

GETTING READY TO USE THE TOOL & TROUBLESHOOTING

You need a basic understanding of Microsoft Excel to use the tool. At a minimum, you need to be comfortable opening and saving your work, entering information into cells, and clicking on the tabs to move from one worksheet to the next one. No knowledge of functions, formulae or any advanced features is required.

We are making the tool available as a Microsoft Excel file (Version Office 365). Note however that unlike a web application, there are software compatibility issues when working with Excel files. Versions 2019 and earlier are not fully compatible and should not be used as some commands will not work.

Due to compatibility issues, please do not use Google Drive to store or share this Excel file. Doing so may corrupt the file or disable essential VBA functions, causing errors in calculations and overall functionality. When sharing this file, ensure recipients have compatible Excel versions and necessary permissions to run macros.

If using OneDrive, please be aware that syncing while the file is open may cause conflicts. Close the file after use.

When using a Microsoft Excel file, for the tool to operate correctly all macros need to be enabled. To enable macros, go to the Excel menu and select the following:

> File -- Options -- Trust Center -- Trust center settings -- Macro Settings -- Enable all macros.
>
> Or select “Enable content” at the prompt when first opening the file.

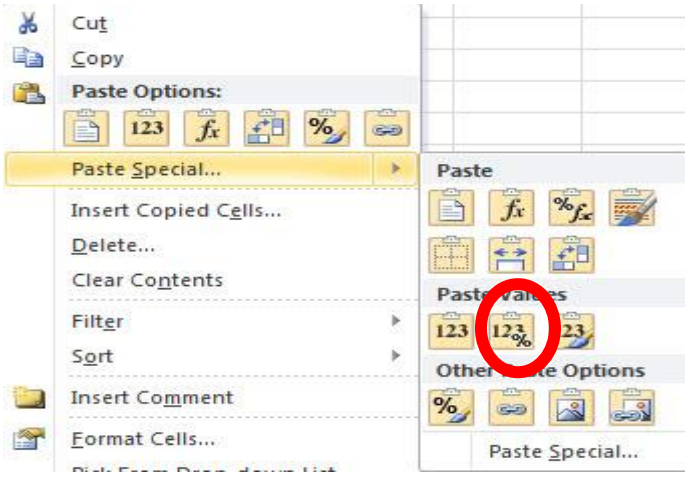
Some office versions by default block all macros from files downloaded from the internet. If this happens, close the file and before opening the file, right click on the file and select: Properties -- General – Unblock.

Additionally, some antivirus software may flag macros. In some instances, you may need to add this file to your security software’s exception list.

For best performance, use the tool from a local drive rather than a network location. Also remember to always save the file as a macro-enabled workbook and check that non-essential Excel add-ins are disabled as they might interfere with the tool functionality.

If you are working with the Microsoft Excel file and want to copy a table or cell from the costing tool and paste it in another workbook to undertake further analysis, this can be easily done through the usual Excel commands. However, special care should be given to avoid errors. Do not simply copy the cells and paste them. Use only Paste Values & Number formatting as follows:

- ✓ Open the file where you want the data to be transferred.
- ✓ Then go to the costing too and select the corresponding cells you want to transfer, right click, and select copy.
- ✓ Go to the file where you are transferring the data and select the corresponding worksheet and cell where you want to paste the data. Then select Paste Special -- Paste Values –Values & Number Formatting, as shown below.



To use the tool, you do not need knowledge of how to build or format charts in Microsoft Excel. In case you want to copy a chart and paste it into a PowerPoint or Word document, you just need to select the chart, right click, select copy and paste it. Experienced users are also able to change the title and other selected features of each chart.

NAVIGATING THE TOOL

As noted earlier, the tool has been designed to support planning & budgeting through an intuitive step-by-step approach. Steps under each module have been organized in sequential order. It is recommended that users first get familiar with the tool structure and modules before using it.

Each module in the tool starts with a brief overview describing what users are expected to do and a few important issues to consider when working through a particular module. To facilitate using the tool there are explanatory notes under each step.

Once you are familiar with the tool and the country process described above, start filling in the General Inputs sheet. Then it is advisable to proceed with the other planning & budgeting sheets in sequential order starting with the infrastructure component. For each planning & budgeting module go step by step and do not skip any steps.

Make sure you sense-check preliminary results under the review steps. Once you are satisfied with those estimates, take the time to explore the summary of results by facility typology shown in the Facility Typology Costs module. You can then proceed to the Scale-up Costing Scenario module if it is of added value for stakeholders.

To facilitate navigating each module the following coloring standards are used: All the major steps are named in light green-colored cells. All user inputs are in blue colored cells. To facilitate the documentation of the modeling, there are specifically designed cells for users to enter comments or notes. Cells with darker blue indicate user inputs that override tool calculations. Calculations and 'reminder' menus for strategies related to various components of the model of care are in yellow-colored cells. Some cells will become red colored if potential errors are identified.

Light blue cells are user inputs.
Yellow cells are tool calculations or contain reminder menus for strategies. They cannot be manually changed by the user
Cells in dark blue are suggested sub-categories of strategies. They can be changed by the user.

WHY THERE IS NO AUTOMATIC DEFAULT DATA & OPTIONS TO FILL-IN GAPS

In some countries undertaking this exercise, there might be gaps related to country standards for the various components of the small and sick newborn care model. And sometimes filling in some of those gaps and showing some preliminary results to key stakeholders will help ground country discussions.

In these instances, the use of automatic default data can considerably speed up modeling and calculations. However, from a planning & budgeting perspective, this entails major risks, particularly when detailed global norms are yet to be released. It is easy to produce numbers with automatic default data and on the surface, they might look reasonable, but the automatization of the process discourages a careful assessment of the default indicators, their applicability in the local context and the implications for the scale-up.

Since the emphasis of the tool is on supporting planning & budgeting to guide the implementation of the scale-up to ensure good quality of care, we have decided not to include automatic default data.

SOME ADDITIONAL TIPS

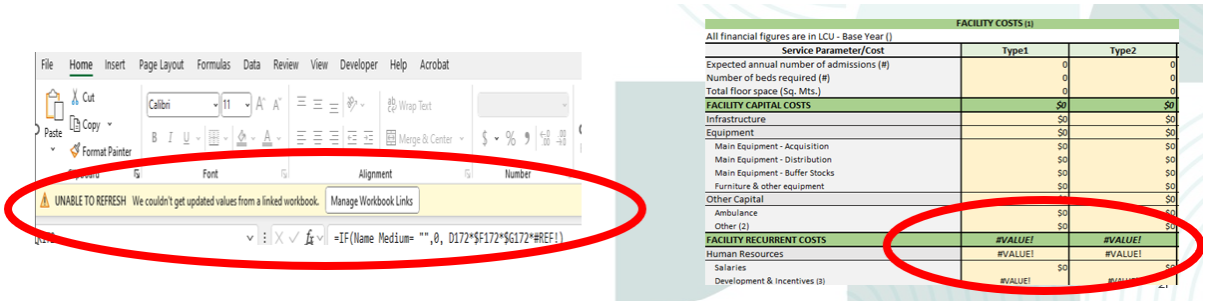
The workbook structure, coding, and worksheets, as well as cells with formulae are **password protected**. This has been done to prevent users inadvertently modifying or deleting built-in formulas, which would lead to errors in the tool calculations.

Enter data into the blue cells and use the user comment cells (also in blue) to document your decisions. It is easy to forget the source of some inputs or the rationale behind them! This will save you lots of time when drafting the report or the PowerPoint presentations.

If you have **entered a value and want to change it**, just delete it, and enter the new value.

Remember that as with any costing exercise, **all cost inputs in the tool should be entered using the same currency and base year**.

Do not use 'cut and paste' or 'copy and paste' commands to enter data in the light-blue cells. For validation purposes, data entry cells have validation and conditional formatting that will give you a warning if an inappropriate value has been entered. Unfortunately, this formatting gets overridden if information is pasted into a cell. Additionally, you might be transferring hidden code or links that could conflict with the tool formulae, as shown below.

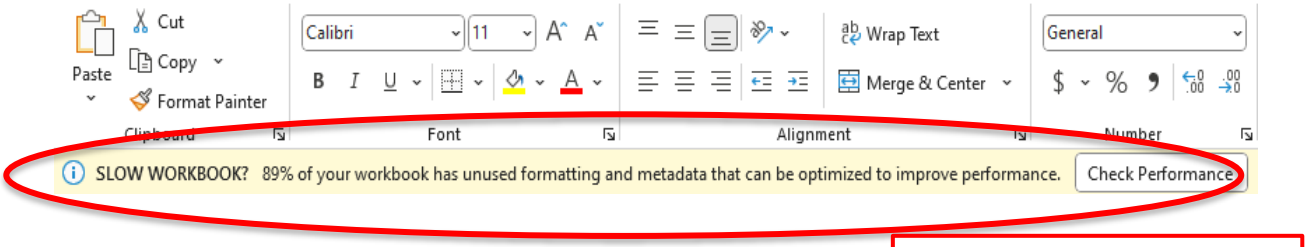


To ensure the tool functions properly, always enter data manually. Avoid copying and pasting into cells with dropdown menus. However, if you must copy and paste data into blue cells that do not contain dropdown menus, and you are confident in using both Excel and the tool, be sure to use "Paste Values" only. Exercise extreme caution, as copying and pasting can remove data validation, potentially leading to the entry of non-numeric or invalid values.

As you work through the various worksheets in the tool, you might decide to **return to earlier steps or earlier worksheets and change a particular value**. If you do so, make sure you double check that any data entries that you have made in subsequent steps and worksheets are still valid and complete.

If you want to adjust the screen view to facilitate for example data entry or review of results, use zoom and the freeze panes feature.

For ease of navigation, many cells in this workbook are formatted with special styles and formatting. Occasionally, this will cause Excel to display a "Slow Workbook" message (shown below), which should be ignored.



Remember, if this message shows up, just ignore it & close it.

Do not skip any steps.

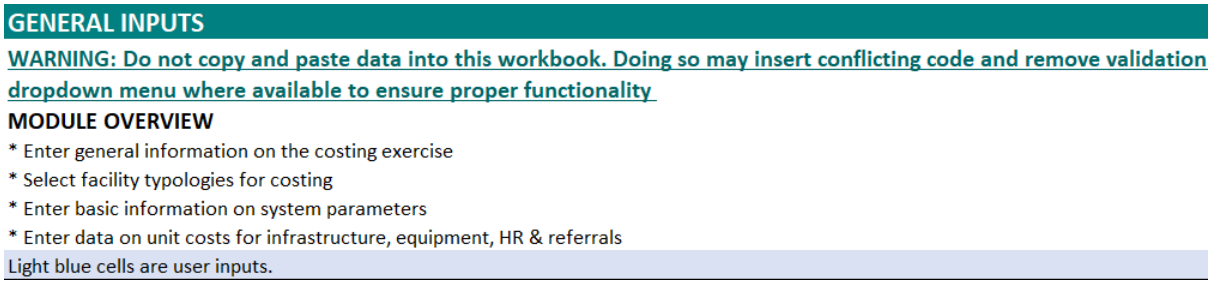
Take time to sense-check preliminary results as suggested in the review steps.

To ensure that results are accurate, review at each step the country specific data that you have entered. Resolve any alerts or error messages before proceeding any further. Pay special attention to the units you use to enter figures. For example, check that all costing data is entered in the same currency and for the same base year. Also check that the percentages you have entered are correct.

While working with the Excel file, remember always to save your work frequently. Also make sure that the file is saved in a safe location that can be easily accessed in the future.

GENERAL INPUTS

As described in the costing tool in this module, you enter basic information on the scope of the exercise, selects the facility typologies to be included and enters general information on system parameters as well as cost inputs.


GENERAL INPUTS

WARNING: Do not copy and paste data into this workbook. Doing so may insert conflicting code and remove validation dropdown menu where available to ensure proper functionality

MODULE OVERVIEW

* Enter general information on the costing exercise
* Select facility typologies for costing
* Enter basic information on system parameters
* Enter data on unit costs for infrastructure, equipment, HR & referrals

Light blue cells are user inputs.

STEP 1 – PROVIDE GENERAL INFORMATION ON THE COSTING EXERCISE

As shown below, the tool includes some basic notes to facilitate inputting data. Here general information on the costing exercise is entered and the user is reminded that all costs should be entered in the same currency and for the same base year. That is, you should not enter some costs in USD and others in local currency. Likewise, all costing data should correspond to the same year. This is a basic principle for any costing exercise to ensure you are comparing apples with apples.

For example, if you collected data on equipment prices from vendors in the year 2023 and staff salaries also for the year 2023 but sourced the cost of construction from a report dating back to 2018, you need to adjust construction costs to account for price increases over time.

So, you need to make sure that all cost inputs correspond to the same currency and year. In most cases you will be able to collect data for the same year, usually the year in which you are undertaking the costing exercise. However, in cases where some of the cost data collected is historical, those costs need to be adjusted by inflation before data entry.

Note that since all costs are entered for the same year and currency, annual costs for the scenario are presented in constant currency (e.g., constant dollars), which allows us to compare costs over the years.

1.1 - Name of the Costing Scenario

Name:	**BASE SCENARIO**

1.2 - Select currency used for cost inputs & document exchange rate used for any conversions.
Remember that all costs should be measured using the same currency.

		User Notes
Currency to be used for all cost inputs:	**USD**	Some costs like construction provided in USD. Others like equipment were converted from Kwacha
Exchange Rate of local currency for conversions of final estimates: 1 USD =	17	

1.3- Select base year for costings and financing
Remember all costs should be measured for the same base year
If different types of costs are collected for different years, the costing results will be incorrect

		User Notes
All the tool costings and financing inputs are for base year:	2022	

STEP 2 – SELECT FACILITY TYPOLOGIES FOR COSTING

To capture the diversity of facilities and variations in costs across the country, the costing tool includes five typologies with up to three different categories each. The mix and match can produce many 'unique' alternative typologies for which costs can be estimated.

You are encouraged to use as many typologies as relevant for the scale-up exercise. These typologies allow you to examine how system parameters and costs vary according to individual facility characteristics, which provides useful insights for the scale-up. As discussed under the planning & budgeting modules, the use of typologies also provides you with the opportunity to estimate a range, rather than a single point, of cost estimates.

In this step you decide the typologies to be included and for which costs will be estimated:

Facility Size:

You can use the costing tool to model system parameters and estimate costs for up to three different facility sizes (small, medium & large). As discussed under the planning & budgeting modules, system parameters, including number of beds, equipment and human resource requirements need to be set for each facility size.

As expected, facility size has a large impact on costs. Observed economies or diseconomies of scale might prompt a reconsideration of the strategic scope of the scale-up. Should resources be invested in fewer, but larger facilities serving larger population catchment areas or higher numbers of smaller facilities serving smaller population catchment areas? So, although it is the only typology that requires detailed modelling of system parameters for each category, there are important benefits of including the three categories (small, medium & large) in the exercise.

Facility Cost/location:

Costs are likely to vary across locations and the tool allows up to three different cost/location typologies (mid, high & very high cost). Note that we use the term mid cost rather than low cost to reflect the fact that even in those areas, the costs associated with establishing district level facilities delivering quality of care to small and sick newborns might be substantial.

In some countries these categories for example might correspond to urban, rural & remote areas. In other instances, including this typology can help you explore the sensitivity of the results to a range of cost estimates.

Facility Construction:

This typology allows you to control for construction costs varying significantly depending on whether setting up the space for the small and sick newborn unit requires new construction or rehabilitation.

Facility equipment needs:

Facilities are likely to vary in the extent to which the required equipment as per country standards is available. However, providing detailed estimates for each facility will require facility surveys and costing the gap between what is required based on the country standards and what is available at each facility. Instead, the tool allows you to identify three categories of need (major, partial & limited), for which to estimate the approximate cost of the equipment needed, with minimum additional inputs.

Facility recruitment:

This facility typology aims at capturing differences in human resource costs due to incentives for recruiting and retaining staff in difficult to recruit areas. The tool allows three categories: standard, hard-to-recruit & most challenging recruitment locations. They could represent for example urban, rural, and remote areas, aligning with the cost/location typology above.

STEP 2 - SELECT FACILITY TYPOLOGIES FOR COSTING

Select facility typologies for costing. Need to select at least one option for each typology

Please make sure you select from the drop down menu ("Yes", "No"). Do not copy/paste, cut/paste into these cell

		User Notes
SIZE	**To be included ?**	As per country discussions and guidelines
Small	Yes	
Medium	Yes	
Large	Yes	
COST/LOCATION		Used to model sensitivity to cost parameters and/or variations across locations
Mid Cost	Yes	
High Cost	Yes	
Very High Cost	Yes	
CONSTRUCTION TYPE		As per country discussions
New Construction	Yes	
Rehabilitation	Yes	
EQUIPMENT NEEDS		Included after country meetings, partly to reflect equipment availability funded by DPs in some areas
Major	Yes	
Partial	Yes	
Limited	Yes	
RECRUITMENT CHALLENGES		Represent urban, rural (~20% hardship allowance) & remote (~25% hardship allowance)
Standard	Yes	
Hard-to-Recruit	Yes	
Most Challenging	Yes	

You need to select at least one category per typology and failing to do so will prompt an error message, as shown below.

RECRUITMENT CHALLENGES		Represent urban, rural (~20% hardship allowance) & remote (~25% hardship allowance)	ERROR, NEED TO SELECT A CATEGORY
Standard	No		
Hard-to-Recruit	No		
Most Challenging	No		

To include or exclude a typology, just use the dropdown menu, and select Yes or No. As noted earlier, try to include as many typologies as relevant. Remember that the benefits of including facility size typologies in the exercise more than outweigh the additional data requirements and that including the other typologies can also provide added insights with minimal additional effort.

Also note that facility typologies included in this step are used as headings to collect additional inputs or produce estimates. The tool has in-built formulae to ensure that final costs are estimated only for typologies that have been included in this step. So, make sure you use the drop-down menu to indicate if the typology is included in this exercise or not. **Do not copy/paste or cut/paste answers into these cells as it removes the cell data validation, which is important to ensure estimates are correct**.

STEP 3 – ENTER BASIC INFRASTRUCTURE STANDARDS & UNIT COSTS FOR CONSTRUCTION

In terms of infrastructure standards, you should first enter the type of inpatient beds (up to four), followed by facility service areas (up to 15). Make sure that only inpatient beds are entered in the former. So do not include beds for family members not staying with the newborn, which should be included under facility service areas.

And remember that when identifying the type of facility service areas, it is critical to consider the requirements of all the components of the model of small and sick newborn care, as well as the needs of the unit staff.

Ideally, this information should be sourced from country standards/guidelines and validated as required against the latest evidence on best-practice.

STEP 3 -ENTER BASIC INFRASTRUCTURE STANDARDS & UNIT COSTS FOR CONSTRUCTION

3.1 Infrastructure Standards - Enter type of inpatient beds required at SNCUs

Enter only inpatient beds. Beds for family members not staying with the newborn should not be included here.

	User Notes
Type of Inpatient Beds	
High Dependency	
Low Dependency	
Transitioning	

3.2. Infrastructure Standards - Enter the other facility areas, such as outpatient care, ancillary and support services

Remember to account for space requirements of all components of the model of care, including post-discharge follow-up and family and community inv
This also includes office space requirements for management, data systemts & liaision with with other facilities regarding linkages and referrals
Any areas for accommodation of family members not staying with the newborn should be included here.

	User Notes
Type of Facility Service Areas	
Counselling area	
Family facilities, inc. for mothers	
Nursing station	
Nursing office	
Staff Rest Areas	
Staff washrooms	

In terms of costs, you are required to enter the average cost per square meter of construction for a district facility (Level 2) delivering inpatient care to small and sick newborns. Several issues should be noted here.

First, this is the average cost of construction for this type of facility, which takes into consideration that some areas such as those for high care beds incur higher costs than other areas such as the utilities room. This average will provide a reasonable ballpark estimate for the purposes of planning & budgeting the scale-up and can be used as an indicative budget for individual facilities.

However, bear in mind that as with any construction project, during implementation those indicative estimates will be revised to account for individual facility floor plans and the associated itemized costings produced by surveyors (e.g., the cost per sq. mt. of drywall, concrete, masonry, and other)

Second, cost input data should reflect the cost of building a facility according to country standards and guidelines. So, if these guidelines include standard floor plans that have been costed, use these costs.

If that information is not available, you can identify a recent project that built such a district level unit for small and sick newborns. Unfortunately, in some countries there might not be such a facility. In those

instances, country experts, such as those managing hospital construction budgets at national, regional or facility level will be able to provide reasonable estimates.

Third, costs will be different for new construction and rehabilitation. If you are only able to secure costs for new construction, a rule of thumb to be validated by country experts is that rehabilitation costs are between 50 to 60% of new construction costs.

Fourth, if you include several facility cost/location typologies (mid, high & very high cost) it is likely that only one set of costs will be available. In that instance, you can consult with local experts about the cost loadings or percentages that should be applied to estimate costs for the other locations.

For example, if you have obtained the cost of construction in an urban area (mid-cost location) as $500 per square meter and have no other data for rural (high cost) and remote (very high cost) consult with local experts the cost loadings that can be applied (e.g., + 20% for high cost and + 30% for very high cost).

3.3. Enter average construction costs per Sq mt of SNCU

If no data on rehabilitation costs, note that based on the GFF case study rehabilitation costs are approximately 50% to 60% of new construction costs

Average Cost per Square Meter of Construction (by Typology)			
	Type of Construction		User Notes
Costing Typology	New Construction	Rehabilitation	
Mid Cost	$480	$290	$600 per sq mt. for new construction validated with DoH. Rehab based on case study. Other costs to model sensitivity to variations.
High Cost	$600	$360	
Very High Cost	$720	$440	

To account for the recurrent annual costs associated with building maintenance, the tool requests entering a percentage of a new building's value. A standard rule of thumb is to use 1%. Since maintenance is estimated as a percentage of a new building's value, new construction needs to be included as one of the typologies to be costed in this exercise. Otherwise, the estimated building maintenance costs will be 0.

3.4. Enter estimated annual cost of building maintenance (as % of the cost of building a new unit)

If country data are not available, a standard rule of thumb such as 1% can be used.

Building Maintenance	As % of new building value	User Notes
Annual building maintenance costs	1%	Based on standard assumptions

STEP 4 – ENTER ESSENTIAL EQUIPMENT & UNIT COSTS

Here you are asked to enter the list of essential equipment required for Level 2 facilities delivering care to small and sick newborns as well as some basic cost inputs. A standardized list of equipment like that required by the costing tool is highly beneficial as it facilitates large-scale purchases and contract negotiations. It also improves integration of equipment within the network of care and facilitates maintenance as well as the network supply of spare parts and consumables.

The equipment list should ideally be sourced from country guidelines and reviewed based on the latest available evidence to ensure all required equipment for sick and small newborns and their mothers providing Kangaroo Mother Care is included. Any additional type of equipment required for the safe transport of small and sick newborns should also be listed here. However, if there is a current government policy to strengthen referral systems that will provide equipment for ambulances, such equipment does not need to be included here, as it will be funded out of a separate budget.

Note that the range of items covered in country guidelines will vary. Some countries might include major equipment as well as consumables and pieces of furniture. In others the list might be restricted to medical equipment for small and sick newborns. In any case, it is advisable to restrict the list to essential items. That is not to include items considered desirable, but not essential.

The tool includes the cost of furniture, office and communications equipment as well as the cost of equipment consumables and spare parts as separate items to be costed in the planning & budgeting module for equipment. You should bear this in mind when deciding which items to include in the equipment list to avoid double counting. Also take into consideration the efficiency of data collection and the purpose of this exercise.

Once you have decided the type of items to be included in the equipment list, they need to be extracted from the country guidelines. During this process, you might need to review not only the list of equipment for inpatient beds and safe transport, but also for other facility areas such as triage. This list will be the starting point for discussions with stakeholders and will also be used for collecting cost data. When making the initial list it is thus advisable to be as comprehensive as possible. Also remember to document in detail any information gaps, such as lack of equipment specification, and make notes of any decisions made (i.e., excluded or added devices).

Changes to the original list are to be expected during stakeholders' discussions as they will need to ensure the list reflects the latest evidence-base and policy developments. Stakeholders will also consider other issues such as the following:

Should equipment devices shared with other hospital units be included here? In some cases, the absence of shared hospital equipment such as mobile x-ray and blood gas analyzer, which has a deleterious effect on the good quality of care provided, is unlikely to be addressed by other hospital budgets in the near future. Stakeholders might decide to include the total cost of those items of shared equipment as part of the scale-up plan and budget for small and sick newborns. So, for shared equipment included in the list enter the total unit cost only if this device will be entirely funded out of the small and sick newborns' budget. Otherwise, apportion the unit cost to reflect the percentage that will be covered by the program. For example, if the unit cost for the shared device was $3,000 but only 20% will be funded by the program, enter $600 ($3,000 x 20%). Alternatively, you can enter the full cost and adjust the number of devices needed in the equipment & commodities module (i.e., enter 0.20 instead of 1).

To identify the best source for equipment cost data, you might need to consult with those in charge of procuring hospital equipment. They might have records of recent tenders or purchases that can be used or might suggest that you need to approach individual vendors.

When detailed technical specifications of equipment are available, they should be used for securing unit costs. This will ensure that any variations in unit costs from alternative sources or vendors does not reflect differences in technical specifications, but other aspects such as brands or market mark-ups. However, this might not always be feasible, in which case it is important to discuss the implications for the data collection exercise.

In this and other instances, collecting equipment unit cost data from alternative sources will provide useful information for planning the scale-up (See for example, the Zambia and Ghana reports). Note however that if alternative equipment prices are collected, different models need to be run to estimate those cost scenarios. That is, unlike costing facility typologies, costing alternative equipment price scenarios cannot be done within the same model. For this reason, only one set of prices is included in inputs.

STEP 4. ENTER LIST OF ESSENTIAL EQUIPMENT (as per standards) & UNIT COSTS

4.1. Enter list of essential equipment and unit price (inclusive of warranty) for each device

Equipment list to be sourced from country standards & guidelines.

The list should include all essential devicesto deliver quality of care inc. those required for mothers and referral transport

If standards are not available, as a starting point for discussions, the list can be sourced from the GFF case study or international guidelines

Do not enter office furniture or equipment here

Note: Exercise caution if you decide to copy/paste into these cells as you might inadvertedly paste formulae from other files

LIST OF ESSENTIAL EQUIPMENT	Unit price inc. warranty	User Notes

When collecting unit cost data for equipment, it is important to note the associated warranty and equipment servicing conditions as this will have implications for the design and cost of equipment maintenance strategies. So, the tool asks for a brief description of the equipment warranty included in unit costs, to ensure this is given consideration when modeling other equipment strategies.

4.2. Provide a brief description of warranty, including number of years

Brief Warranty Description:
Only 1 year warranty available in country

STEP 5 – ENTER HUMAN RESOURCE CATEGORIES & UNIT COSTS

Human resources are the foundation for delivering good quality of care to small and sick newborns, so countries need to ensure that facilities have the right staff, with the right skills, in the right numbers and with the right support systems.

Here you need to enter the initial list of types/categories of human resources required to deliver small and sick newborn care. As noted in the costing tool, when putting together this list, users should consider the human resource requirements for delivering small and sick newborn care 24/7 as well as any additional staff needs related to the 10 components of the scale-up. For example, some questions to ask are: Does the list include trained drivers and paramedics for functioning referrals as well as data officers for robust data systems? And what about additional staff requirements of delivering post-discharge follow-up at the facility?

The list should thus include clinical staff (e.g., medical doctors and nurses) as well as required support staff, such as biomedical technologists, lactation specialists/nutritionists, cleaners, security guards, data officers, ambulance drivers and others.

Unit costs should include the annual salary as well as allowances and other work benefits for a full-time equivalent worker. If facilities in hard-to-recruit or most challenging to recruit areas are included in the costing exercise the corresponding salaries should include any allowances provided as an incentive to recruit staff in those areas.

STEP 5. ENTER HUMAN RESOURCES -CLINICAL & SUPPORT- (As per standards) AND UNIT COSTS

5.1 Enter categories of facility staff and annual cost per FTE for facility typologies included

Categories should include clinical & support staff needed. To be sourced from country standards & guidelines.

Make sure the list includes human resources required for all components, such as drivers for ambulance referrals, data officers for information systems or support staff for post-discharge fol

If not available, the list can be sourced from the GFF case study or international guidelines as a starting point for discussions in country.

Note: Column headings will be blank if a typology was not included

List of Human Resources Required & Annual Costs per FTE				
	STAFF RECRUITMENT FACILITY TYPOLOGIES			
	Standard area	Hard-to-Recruit	Most Challenging	
Staff Category (Clinical & Support)	Annual costs inc. salaries, allowances, etc.	Annual costs inc. salaries, allowances, recruitment area incentives	Annual costs inc. salaries, allowances, & recruitment area incentives	User Notes
Neonatologist	$25,917	$31,100	$32,396	
Medical Officer	$25,917	$31,100	$32,396	
Medical Licentiates	$7,533	$9,040	$9,416	
Clinical Officers	$5,386	$6,463	$6,733	
Registered Paediatric/Neonatal Nurses	$5,897	$7,076	$7,371	
Registered Nurses	$5,386	$6,463	$6,733	
Midwives	$5,897	$7,076	$7,371	

You are also asked to enter the average cost of supervision/mentoring visits from regions to facilities. These costs should be all inclusive. They will be used to estimate facility costs in the Planning & Budgeting module for the various facility cost/location typologies included.

5.2 Enter average costs of supervision/mentoring visits from regions to facilities, including allowances, perdiems, transport

Supervision/Mentoring/Coaching Visits - Unit Costs	$	User Notes
Average cost per supervision, mentoring and coaching visit from regions to SNCUs:	$165	Includes daily susbsistence allowances for 2 provincial officials ($56 each) and a driver ($33) and $20 fuel

STEP 6 – ENTER & VALIDATE COST LOADINGS OR MARK-UPS

Cost loadings or mark-ups are a percentage used to reflect the increased price of service delivery in high or very high cost locations.

So, in this step you are asked to enter the percentage of cost loadings/mark-ups that will be used to adjust the cost of items such as mandatory training and supervision, across various facility locations in the country.

Local managers and budget officials will be able to indicate the appropriate cost loadings to apply based on their experience. In some contexts, it might be appropriate to use similar cost loadings or mark-ups to those used for construction and/or fuel costs, discussed above.

To facilitate estimating cost loadings, the tool uses as reference the costs of supervision entered in the previous step and there are explanatory notes with an example.

We have also included a review step that shows the cost of supervision visits across each location/cost typology after applying the cost loadings. This review step enables you to check that cost loadings or mark-ups have been entered correctly. As noted in the tool if you think there is a mistake, you just need to go back and change the cost loadings entered.

STEP 6. ENTER & VALIDATE COST LOADINGS OR MARK-UPS TO CAPTURE VARIATIONS ACROSS LOCATION/COST TYPOLOGIES

6.1. Enter % of cost loadings/mark-ups to be applied to supervision/mentoring visits and other QoC strategies at facility level. Enter 0 or leave blank if none
If for example, costs entered in step 5.2. reflect a mid-cost location and are likely to be 10% higher in high cost locations and 20% higher in very high cost locations: Enter 0 for mid cost, 10% for high cost and 20% for very high cost
Only cost/location typologies included in the exercise are shown here.

Cost loadings/mark-ups by typology	%	User Notes
Mid Cost	0%	Costs above reflect a mid-cost ~urban location
High Cost	10%	
Very High Cost	20%	

6.2. Review costs of supervision/mentoring visits after applying cost loadings
This table shows unit costs in step 5.2. by facility/cost location typology, after applying cost loadings/mark-ups in Step 6.1.
Here you have the opportunity to review how cost loadings are applied to ensure that percentages entered in Step 6.1. are accurate
If you think there is a mistake in these calculations, go back to Step 6.1. and change the cost loadings entered.

Unit costs of Supervision visits after applying cost loadings	$
Mid Cost	$165
High Cost	$182
Very High Cost	$198

STEP 7 – ENTER COSTS OF REFERRAL VEHICLE/AMBULANCE

Here the user enters unit costs for purchasing ambulance vehicles to be funded out of the scale-up budget as well as the associated annual costs for fuel and maintenance. These costs are easily standardized and so have been included under inputs. However, other referral costs, which are not easily standardized as they relate to referral strategies that can vary substantially across settings are identified and estimated under the Referral Planning & Budgeting sheet.

In Step 7.1. the user enters the cost of acquiring an ambulance vehicle. As noted in the costing tool, remember to include the cost of the Geographical Positioning System (GPS), but do not include the cost of newborn transport equipment, which is costed under the equipment module.

Leave blank if these costs are not applicable in country. This could be the case for example if safe transport for newborns is funded out of the national emergency system budget and does not need additional financing from the scale-up budget for small and sick newborn care.

In Step 7.2. the user is asked to enter the average cost of ambulance fuel and maintenance (per kilometer). These costs can be easily sourced in the country. However, to aid the user if this information is not available, the tool provides some pointers. For example, it notes that a liter of fuel might last 12 to 15 kilometers (for a traditional ambulance vehicle) and that maintenance costs can be estimated as a percentage of fuel costs.

Ambulance fuel and maintenance costs are likely to vary across locations, but here only one point estimate is entered. Bear in mind that calculations of annual costs by facility typology, which include adjustments by cost loadings that vary by location, are made under the Referrals Planning & Budgeting Sheet.

STEP 7. ENTER COSTS OF REFERAL VEHICLE/AMBULANCE

7.1. Enter ambulance vehicle acquisition costs, including any GPS requirements

Do not include newborn transport equipment costs, only the costs of the vehicle & the GPS

	Unit COST
Ambulance vehicle cost inclusive of GPS:	$80,000

7.2. Enter fuel and maintenance costs per kilometer for ambulance vehicles

Remember that ambulance annual costs by facility typologies are estimated using these inputs.

Under the Referrals Plan & Budget tab, adjustments by cost loadings and other factors are made and you can review/modify facility estimates as required

Note: A litre of fuel lasts between 12-15 kmts. In the absence of data, maintenance costs can be set as a percentage of fuel cost (i.e. 40 or 50%)

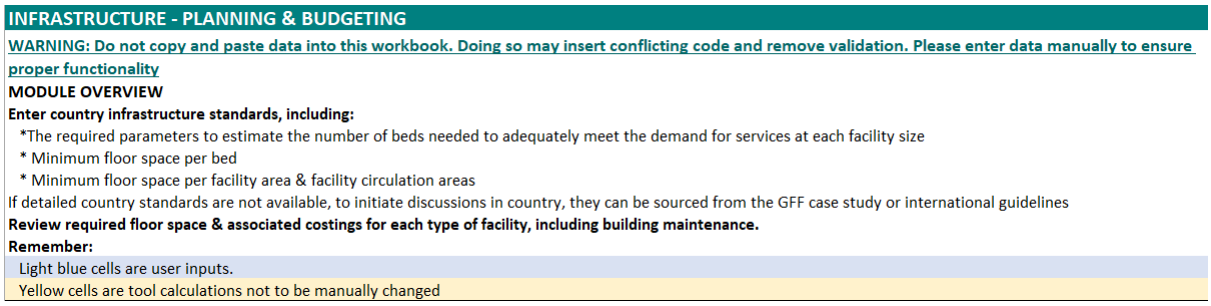
Average cost of vehicle fuel & maintenance	Cost per kilometer
Fuel	$0.080
Maintenance	$0.040

INFRASTRUCTURE PLANNING & BUDGETING

In this module, you need to characterize each facility size typology (small, medium & large) included in General Inputs. The module starts with the formula to calculate the number of beds and then asks the user to enter the types of inpatient beds. The following steps relate to setting the minimum floor space requirements and estimating infrastructure construction costs.

Remember that if not all typologies were included in the exercise some row and column headings for the relevant tables will be blank. That is, for example if you only included small and medium size facilities, those are the only two column headings that you will see. The third column, which would have been for large facilities, will appear with a blank column heading. **Do not enter data in those rows or columns with blank headings**.

If you have not included all typologies, tables summarizing results will also have blank row and/or column headings. The corresponding cells with the tool calculations will be shown as 0.


INFRASTRUCTURE - PLANNING & BUDGETING

WARNING: Do not copy and paste data into this workbook. Doing so may insert conflicting code and remove validation. Please enter data manually to ensure proper functionality

MODULE OVERVIEW

Enter country infrastructure standards, including:

*The required parameters to estimate the number of beds needed to adequately meet the demand for services at each facility size

* Minimum floor space per bed

* Minimum floor space per facility area & facility circulation areas

If detailed country standards are not available, to initiate discussions in country, they can be sourced from the GFF case study or international guidelines

Review required floor space & associated costings for each type of facility, including building maintenance.

Remember:

Light blue cells are user inputs.

Yellow cells are tool calculations not to be manually changed

STEP 1 – ESTIMATE & VALIDATE NUMBER OF INPATIENT BEDS REQUIRED TO MEET DEMAND

In this step, the user calculates the number of required beds for the facility size typologies included (i.e., small, medium & large). The tool calculates the number of required beds based on the expected number of small and sick newborn admissions as well as the expected average length of stay and the target occupancy bed rate for the facility.

As shown below, to estimate the number of admissions, you need to enter the average number of live births in the facility catchment area and the percentage of live births requiring special care. Length of stay and the expected occupancy bed rate are also entered here. The tool provides brief notes to help you identify some of these values, based on international guidance. It also stresses that referral strategies such as those related to protocols and criteria for admission and discharge need to be in place to ensure that bed strength remains adequate.

Population & service parameters

So, in Step 1.1 the user enters the average number of live births in what would be the average catchment area for a small, medium, or large facility.

In Step 1.2 you enter the percentage of those live births that would require special care, the average length of stay and the percentage of bed occupancy rate targeted.

Draft WHO and UNICEF norms for level 2 facilities delivering small and sick newborn care (Version 29 February 2024) suggest that for a population with 10,000 annual live births, approximately 24 small and sick newborn care beds will be needed. Broadly speaking, this is based on the indicative assumptions of 13.46% live births requiring special care and an average length of stay of 6.4 days.

The total number of beds thus estimated is then adjusted by the proposed occupancy rate. To continue with the above example, if a targeted occupancy bed rate of 85% is used to ensure quality of care and efficiency, the total number of beds required for a population with 10,000 annual live births would be 28.

Note that if the occupancy rate parameter is left blank, the tool assumes 100% occupancy rates.

So, unless locally available evidence suggests otherwise, the above indicative parameters can be used and have been included in the costing tool notes.

The following formula is used to estimate the number of beds required at each facility:

- ✓ Expected admissions = Live births in catchment area x Percentage of live births requiring special care
- ✓ Required bed days = Expected admissions x Average Length of Stay
- ✓ Number of beds = Required Bed days ÷ 365 days

The total number of beds thus estimated is then adjusted by the occupancy rates entered.

1.1. Enter the expected average number of live births in the catchment area for what would be a typical small, medium and large f
Leave cells blank if facility typology is not being costed

	Facility Size Typology		
	Small	**Medium**	**Large**
Average number of live births in catchment area	5,000	10,000	15,000

1.2. Enter formula parameters to estimate number of required beds based on population need:
Based on WHO and UNICEF guidelines & the GFF case study, approx. 13.46% of live births require special care & 6.4 days of ALoS
QoC strategies, inc. protocols and criteria for admission & discharge should be in place to ensure bed strength is adequate
~ 80% to 85% occupancy bed rates might be advisable
Leave target occupancy bed rate blank if 100%

% of live births requiring special care	13.46%	**User Notes**
Target average length of stay (days)	6.4	
Target occupancy bed rate	85%	

1.3. Review expected number of admissions and newborn beds required by typology,
These figures are estimated based on expected live births entered in Step 1.1. and other parameters entered in Step 1.2

Service Delivery Parameters	Small	Medium	Large
Expected annual number of admissions (#)	673	1,346	2,019
Number of beds required (#)	14	28	42

Review number of admissions and required inpatient beds

Step 1.3 (shown above) asks you to review the expected number of admissions and inpatient beds calculated as per the above formula. Note that the total number of beds is rounded up. So, whether the

estimated total is 7.2 or 7.8 beds, the model rounds it up to 8 for all calculations such as floor space requirements.

In some instances, country standards for infrastructure, equipment and human resources have already been set for facilities of a predetermined number of beds, as was the case in Zambia. However, it will still be useful to go through these steps to ensure that those facility sizes are adequate to meet the demand of a typical population catchment area. For this reason, we have included in the tool this first step, instead of simply asking directly for the number of required beds for each facility size.

STEP 2 – IDENTIFY THE TYPES OF INPATIENT BEDS

After estimating the total number of facility beds, you need to identify how many inpatient beds of each type (listed under General Inputs) are required at each facility size.

The tool has in-built validation formulae so if the total does not add up to the number of beds for each facility estimated in the previous step, a warning sign will be displayed.

If you see a warning sign as below asking to check bed numbers, just review the numbers for each type of bed that you entered to make sure they add up to the required number of inpatient beds for that typology.

Note that if you decide to proceed notwithstanding the warning sign, all infrastructure calculations (total floor space and cost) will be 0 and there will be another warning sign in the equipment module.

STEP 2 - IDENTIFY NUMBERS FOR EACH TYPE OF INPATIENT BED

Enter here the number of beds for each type of inpatient bed listed under general inputs.

Total Number of Beds should equal number of beds required in Step 1.3 above. Otherwise a warning sign would appear and infrastructure totals will be 0

Inpatient Areas (Type of Beds)	Number of beds			User Notes
	Small	Medium	Large	Based on guidelines, reviewed during discussions
Standard Inpatient Care	3	3	6	
High-Care Beds	2	3	4	
Kangaroo Mother Care Beds	2	6	8	
Total Number of Beds to Check	**Check bed numbers**	**12**	**18**	

STEP 3 – SET COUNTRY FLOOR SPACE REQUIREMENTS

Facility floor standards cover a wide range of unit design and construction aspects beyond the minimum space required. Amongst other issues they include space configuration; electrical, gas and mechanical needs; lighting, temperature, and ventilation; digital infrastructure and fire safety and mitigation systems.

As expected, these floor standards will have an impact on **construction prices** and so should be reflected in the unit cost of construction entered in the General Inputs sheet. For example, based on the GFF case study, it has been estimated that civil works account only for between 45% to 59% of construction costs, with the remaining costs attributed to medical gas management systems, electrical works and fire alarm and firefighting systems.

Here the focus is on measuring the floor space area required to deliver good quality care to small and sick newborns, which will provide us with the total **square meters of construction required** for each of the facility size typologies costed.

Minimum floor space per inpatient bed & facility area

In Step 3.1 you enter the required square meters per inpatient bed, which should take into consideration the zero-separation policy. In Step 3.2 facility totals are reviewed.

Then in Step 3.3 enter the required square meters per individual facility area, which correspond to those listed in General Inputs. As noted in the costing tool, when setting these standards users should take into consideration the space requirements of the various components of the model of care. For example, some questions to ask are: Is the space adequate to provide post-discharge follow-up services at the facility or to facilitate the family's involvement in the delivery of care? Are there any office space requirements associated with data systems and the overall management of the unit? Would facility staff have adequate space to engage in all the tasks required to manage referrals and liaise with other facilities without disturbing newborns and their families?

Note that draft WHO and UNICEF norms for Level 2 facilities delivering small and sick newborn care (Version 29 February 2024) recommend 16 square meters per bed with Continuous Positive Airway Pressure (CPAP) and 12 square meters per bed without CPAP. This accounts for space for the small and sick newborn bed, a chair for KMC, equipment, drug trolley and wash basin. However, the draft norms are yet to define the types of non-inpatient areas such as nursing stations and bathrooms, that level 2 facilities should include.

STEP 3 - SET COUNTRY FLOOR SPACE STANDARDS

3.1 - Set minimum floor space (square meters) per each type of inpatient bed

Floor space standards for inpatient beds should take into consideration zero-separation policies

Sq. Mt. per Type of Bed		User Notes
Inpatient Areas (Type of Beds)	**Sq. Mt per Bed**	Mothers of children in high-care beds staying @ lodger mother beds costed as part of facility areas. Guidelines for standard inpatient care reviewed to include no-separation policy
High Care	10	
Standard Inpatient Care	12	
Kangaroo Mother Care	12	

3.2. Review minimum floor space for inpatient care areas by facility size typology

If Total inpatient care area = 0 the typology has not been costed or there is a mistake in the number of beds entered in Step 2.

Total inpatient care area (Sq. Mt.) by Facility Size			
	Small	**Medium**	**Large**
Type of inpatient care area	**Sq. Mts per facility**	**Sq. Mts per facility**	**Sq. Mts per facility**
High Care	20	30	40
Standard Inpatient Care	36	36	72
Kangaroo Mother Care	48	72	96
Total inpatient care area (Sq. Mt.)	**104**	**138**	**208**

3.3. Set minimum floor space (square meters) for outpatient care, ancillary and support services as applicable

Remember that minimum space standards for the relevant facility areas should take into account any requirements of the 10 components of the small and sick newborn care model

Floor standards for other areas by facility size				
Facility Service Area	**Small**	**Medium**	**Large**	**User Notes**
	Sq. Mts per facility	**Sq. Mts per facility**	**Sq. Mts per facility**	**Based on workshop discussions**
Triage/receiving room	12	12	20	To balance what is realistic & optimal
Counselling area	12	12	12	
Family facilities (exc. Lodger mother bed areas)	12	12	18	
Nursing station	10	10	15	
Nurses & Doctors Rest Areas with attached restroom	10	10	15	
Pantry with dining area	15	15	20	
Storage unit	7	7	10	
Clean utility	7	7	10	
Dirty utility	7	7	10	
Lodger mother bed areas	24	36	48	
Meeting & teaching room	20	20	30	
Unit office	10	10	15	
Total	**146**	**158**	**223**	

Facility circulation areas

There is also allowance for including a minimum percentage of floor space for circulation, such as corridors and entrance (Step 3.4), which in the GFF case study was set at 30%. This percentage is then applied to the total area of the unit. However, only include this extra requirement if the minimum space standards established in the previous steps to do not account for circulation.

The cells' data validation will give you a warning if by mistake negative values have been entered or if the percentage of circulation space is greater than 100%.

3.4. Set floor space standards for circulation areas (i.e. corridors, entrance)

		User Notes
Minimum floor space for circulation as % of SNCU total area	**10%**	No clarity at the meeting, though people thought 30% recommended by case study was probably too high, so modelled at 10%

STEP 4 – REVIEW FLOOR SPACE REQUIREMENTS AND INFRASTRUCTURE COSTS BY TYPOLOGY

The standard formula for costs is *quantity x price*. As noted in the costing tool, the total cost of construction is estimated as square meters of facility construction (i.e., quantity) times the unit cost of construction (i.e., price).

Review floor space

In step 4.1. you will review the total floor space requirements for each facility size typology. The table shows subtotals for inpatient and other facility areas, so you are able to examine their relative contribution to facility space requirements.

4.1. Review total floor space required to deliver good quality of care by facility size typology

Total floor space = 0 if typology not costed or errors in number of beds

Square Meters of Floor Space by SNCU facility size			
Service Areas - Floor Space	**Small**	**Medium**	**Large**
Inpatient care areas (Sq. Mts.)	104	138	208
Other facility areas (Sq. Mts.)	146	158	223
Circulation space (Sq. Mts.)	25	30	43
Total floor space (Sq. Mts.)	**275**	**326**	**474**

Review construction costs

Then in Steps 4.2 and 4.3 you review the total construction costs for each facility typology costed. Note that if you have included all facility size, cost/location, and construction typologies, 18 construction cost values will be estimated. They will range from a minimum value representing a small facility in a mid-cost location and in need of rehabilitation to a maximum value representing a large facility in a very high-cost location and in need of new construction.

4.2. Review infrastructure costs for facilities requiring new construction by size and location/cost typologies

Estimates are based on facility floor space and construction costs per square meter.

Facility Costs by Typology	NEW CONSTRUCTION - Total Costs		
	Small	Medium	Large
Mid Cost	$132,000	$156,288	$227,568
High Cost	$165,000	$195,360	$284,460
Very High Cost	$198,000	$234,432	$341,352

4.3. Review infrastructure costs for facilities requiring rehabilitation by size and location/cost typologies

Estimates are based on facility floor space and construction costs per square meter.

Facility Costs by Typology	REHABILITATION - Total Costs		
	Small	Medium	Large
Mid Cost	$79,750	$94,424	$137,489
High Cost	$99,000	$117,216	$170,676
Very High Cost	$121,000	$143,264	$208,604

There are in-built validation algorithms in the tool to prevent erroneous calculations. So, if there are mistakes in the number of inpatient beds or accidentally some data are entered for facility typologies not included in the exercise, the corresponding estimates will be 0. For example, we show below results for Step 4.1. when the large size facility typology has not been included when selecting typologies in the General Inputs sheet. The heading of column three is blank and total costs are 0.

4.1. Review total floor space required to deliver good quality of care by facility size typology

Total floor space = 0 if typology not costed or errors in number of beds

Square Meters of Floor Space by SNCU facility size			
Service Areas - Floor Space	**Small**	**Medium**	
Inpatient care areas (Sq. Mts.)	166	332	0
Other facility areas (Sq. Mts.)	177	229	0
Circulation space (Sq. Mts.)	0	0	0
Total floor space (Sq. Mts.)	**343**	**561**	**0**

However, as a general rule, whenever results seem odd, review that inputs are correct and take note that as discussed earlier, if by mistake you have copy/pasted values into cells the data validation rules were overridden.

STEP 5 – REVIEW BUILDING MAINTENANCE COSTS

The final step in this module asks you to review the estimated annual costs of building maintenance, which are calculated as a percentage of the value of a new facility building. Remember that this building maintenance percentage is one of the inputs collected in the General Inputs sheet under infrastructure. The percentage is then applied to the new construction values for each typology estimated in the previous step. Also remember that if you have not included new construction in the typologies included, this cost cannot be estimated and will show as 0.

STEP 5 - Review annual cost of building maintenance based on inputs and building values

These costs are estimated as a percentage of new building values

Costs will be 0 if the new construction typology has not been included in costings or if no % of building maintenance was entered in inputs

Annual building maintenance costs by typology	Small	Medium	Large
Mid Cost	$1,320	$1,563	$2,276
High Cost	$1,650	$1,954	$2,845
Very High Cost	$1,980	$2,344	$3,414

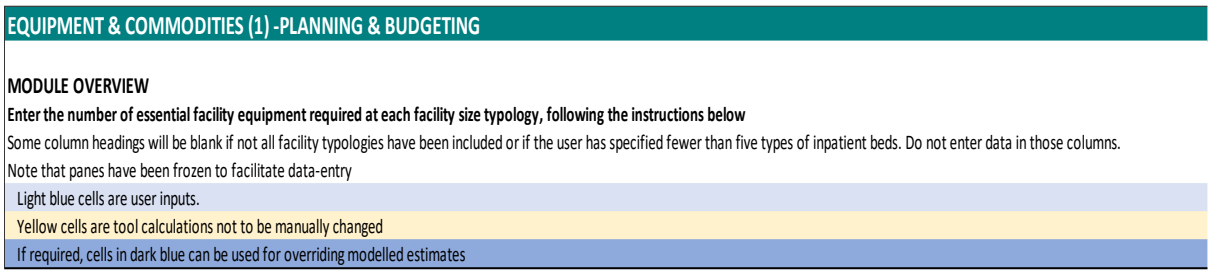
EQUIPMENT & COMMODITIES (1) - PLANNING & BUDGETING

Planning & budgeting for equipment & commodities is organized in two worksheets or modules. The first one focuses on setting equipment standards. The associated costs for equipping a facility are reviewed in the second one, where the user also costs furniture, office and communications equipment, and commodities.

In the first module discussed here, the user sets equipment standards for each of the facility size typologies included in the exercise (small, medium & large).

These standards are set for each equipment device listed in the General Inputs sheet. Remember that if not all typologies were included in the exercise some row and column headings for the relevant tables will be blank. That is, for example if you only included small and medium size facilities, those are the only two column headings that you will see. The third column, which would have been for large facilities, will appear with a blank column heading. Do not enter data in those rows or columns.

Note that if not all typologies have been included, tables summarizing results will also have blank row and/or column headings. The corresponding cells with results will be shown as 0.


EQUIPMENT & COMMODITIES (1) -PLANNING & BUDGETING

MODULE OVERVIEW

Enter the number of essential facility equipment required at each facility size typology, following the instructions below

Some column headings will be blank if not all facility typologies have been included or if the user has specified fewer than five types of inpatient beds. Do not enter data in those columns.

Note that panes have been frozen to facilitate data-entry

Light blue cells are user inputs.

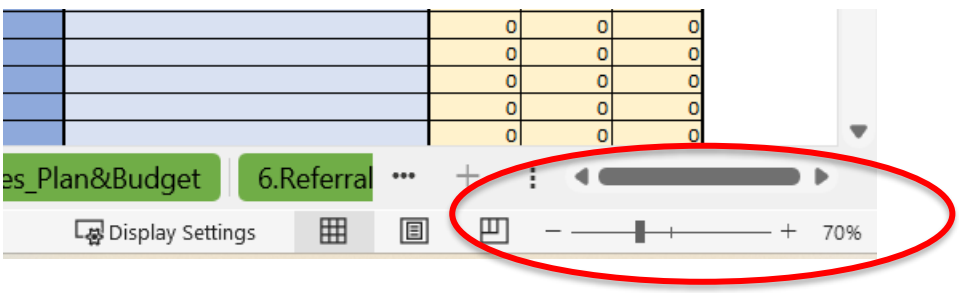
Yellow cells are tool calculations not to be manually changed

If required, cells in dark blue can be used for overriding modelled estimates

As noted in the tool, to facilitate data entry, the panes in the Excel sheet have been frozen. This allows you to always see the row and column headings, making it easier to know where you are entering data.

However, if you are working on a small screen, the frozen panes might limit your ability to scroll down the sheet to enter data. If you encounter this issue decrease the display settings view. Locate the zoom slider in the bottom left corner of the Excel window. Then adjust the zoom level to make the view smaller. This will help you see more of the sheet and allow you to scroll down easily.

By reducing the zoom level, you can navigate the sheet more effectively and ensure that all necessary data can be entered without losing sight of the row and column headings.



STEP 1 – SET NUMBER OF ESSENTIAL DEVICES REQUIRED & REVIEW ESTIMATES

As noted in the tool and explained in detail below, first, for each of the devices listed you should enter the number of items required per type of bed. Then you should enter the additional items of each device required for transport and other facility areas. The resulting number of equipment devices is calculated, and you can review these estimates and modify them, as required.

However, you also have the option of skipping these steps and enter the total number of equipment devices needed at each facility size in the dark blue cells, under the fifth step (Option to enter user-defined estimates) discussed at the end of this section.

Number of devices required per type of bed

First enter the number of equipment devices required per bed. The type of beds listed here correspond to those ones in the General Inputs sheet. So, if less than four types of beds have been included, there will be empty column headings as shown below, which should be left blank.

Any figures entered here represent equipment requirements for that type of bed, which is applicable to all facility size typologies. Make sure you enter data in the right columns.

Note that decimals are allowed. So, if one equipment device is required per three beds, enter 0.33 as shown below.

The data validation in these cells will not allow you to enter negative numbers. However, if you copy/paste or cut/paste information into these cells, the in-built data validation will stop working, which can lead to erroneous calculations.

Equipment Name	First, enter required items per type of inpatient bed			
	Standard Inpatient Care	High-Care Beds	Kangaroo Mother Care Beds	
Closed incubator	0.33	0.33	0.33	
Bassinet (washable)	1	1	1	
Transport incubator				
Overhead servo incubator		1		

Newborn transport requirements

Second, enter the equipment requirements for the safe transport of newborns. That is, enter the number of equipment devices needed for transport at each facility. For example, if the facility standards include one ambulance that needs to be fully equipped and the equipment requirements cover 1 transport incubator, enter 1 here. However, if the facility has two ambulance vehicles, and each need one transport incubator, enter 2.

Second, enter requirements for referrals
Newborn Transport Equipment
2

Additional devices required

Third, enter any additional equipment numbers required at a facility. This should be done separately for each facility size typology and should take into consideration equipment requirements that are applicable to the entire unit or to individual facility areas, such as triage. Shared equipment that is at least partially funded out of the small and sick newborn unit budget should also be included here.

Since requirements are set at facility level, and equipment devices are indivisible, you should only enter decimals for shared equipment devices that are not fully funded out of the small and sick newborn care unit budget. However, these numbers will need to be carefully reviewed in the following steps. As noted below, the tool automatically rounds up the number of pieces of equipment required.

Third, enter additional required items @ facility		
Additional items @Small	Additional items @Medium	Additional items @Large
2	2	2

Review estimated number of devices by facility size

Fourth, review total facility equipment requirements calculated for each facility size typology. The number of required items for each device is calculated as:

> Inpatient beds requirements (number of items required per type of bed x numbers of each type of bed) *plus* requirements for safe transport of newborns *plus* additional items required at each facility.

If the calculation results in numbers with decimals (e.g., 4.20 devices), the costing tool formula rounds up these totals. So, it is very important that you review the estimated number of required equipment devices, which can be modified in the next step.

Equipment Name	First, enter required items per type of inpatient bed				Second, enter requirements for referrals	Third, enter additional required items @ facility			Fourth, review estimated facility requirements		
	Standard Inpatient Care	High-Care Beds	Kangaroo Mother Care Beds		Newborn Transport Equipment	Additional items @Small	Additional items @Medium	Additional items @Large	Small	Medium	Large
Closed incubator	0.33	0.33	0.33						3	4	6
Bassinet (washable)	1	1	1						9	12	18
Transport incubator						2	2	2	2	2	2
Overhead servo incubator		1							2	3	4

Option to enter user-defined estimates

Fifth, if after reviewing the modeled estimate for a particular device, you want to change it, the corresponding figure should be entered here in the dark-blue cells. This could happen for example if the rounding up of estimates needs to be revised down.

In this event, enter the revised estimate in the corresponding cell and leave the rest blank. Make sure you only enter data in dark blue cells for those devices for which you want to override modeled estimates.

If you wish to skip the previous steps because for example country guidance provides the total number of items per facility, you can just go ahead and enter those figures in the dark-blue cells and leave cells in the previous columns blank. However, consider that even in these instances going through the previous steps will provide the opportunity to sense-check equipment standards against the calculations. Additionally working through the steps will make it easier to extrapolate standards for other facility sizes, should that be needed at a later stage.

Final numbers to be used in calculations

Sixth, review the estimates that will be used in the final cost calculations. If you have not entered any data in the dark-blue cells, these numbers will correspond to those in the previous step. However, if you have entered some user-defined numbers in the dark blue cells, these values will be a combination of modeled and user-defined figures.

Fifth, enter user-defined numbers here. Note they override modelled estimates			User Notes	Sixth, review essential equipment numbers to be used in final calculations		
Small	Medium	Large		Small	Medium	Large
				3	4	6
				9	12	18
				2	2	2
				2	3	4

EQUIPMENT & COMMODITIES (2) - PLANNING & BUDGETING

In this module the user reviews the total costs of equipping a facility as per the standards previously set and estimates additional related costs such as equipment distribution and maintenance. There are also steps for costing office furniture and equipment, not previously costed, as well as drugs and other medical supplies. They have been included here to minimize the risk of double counting since an important proportion of medical supplies might be costed as part of equipment consumables, renewables, and supplies.

Remember that if not all typologies were included in the exercise some row and column headings for the relevant tables will be blank. That is, for example if you only included small and medium size facilities, those are the only two column headings that you will see. The third column, which would have been for large facilities, will appear with a blank column heading. Do not enter data in those rows or columns.

EQUIPMENT & COMMODITIES (2)- PLANNING & BUDGETING

MODULE OVERVIEW

Review facility equipment cost calculations for each facility size typology, including:

* Total facility equipment cost & devices accounting for the largest cost share

This review step will help users understand what drives facility equipment costs

Consider, estimate and review other equipment related costs

*Equipment acquisition DOES NOT account for the vast majority of all equipment related costs.

* Equipment related costs to be considered and included in these calculations are:

** Transport and distribution to facilities as well as installation

** Annual costs of consumables, medical supplies and renewables

** One-Off buffer stocks required as part of maintenance strategies

** Annual cost of spare parts required as part of maintenance strategies

** Other preventive and corrective maintenance strategies

Consider, estimate and review costs of fully furnishing a facility and providing adequate office & communications equipment, including eq

Estimate needs of new equipment and furniture by equipment typology

Estimate annual costs of medicines and supplies not included elsewhere

Light blue cells are user inputs.

Yellow cells are tool calculations not to be manually changed

If required, cells in dark blue can be used for overriding modelled estimates

STEP 1 – REVIEW FACILITY EQUIPMENT COSTS BY TYPOLOGY

The first step involves reviewing the equipment acquisition value for each facility size typology included. For transparency purposes and to help you analyze major cost drivers for each typology, the summary table includes:

- Total cost of equipping a facility, which represents the equipment acquisition value for a fully equipped facility as per country standards.
- Facility costs for each device (value and as % of total equipment facility costs)
- A reminder column with the standard number of items required per device, set in the previous module (light gray font).
- A reminder column with the unit price of each device entered in the General Inputs module (light gray font).

Reviewing and validating the total cost of equipping a facility as suggested in this step is critical to ensure the robustness of the results. First, equipment acquisition costs are a significant component of one-off capital investments required to set up a facility. Second, these estimates are also used under the following steps to calculate various equipment-related costs.

In this table you can also identify those devices that account for the largest share of costs (automatically highlighted in the tool), which will be very useful during planning and budgeting discussions.

For example, across various scenarios in Zambia five devices (out of 65 costed) accounted for over half of all equipment costs. This finding does not seem to be an isolated case. A few devices accounting for a large share of equipment costs were also documented in the case study of Haryana and in our exercise in Ghana.

STEP 1. REVIEW TOTAL FACILITY EQUIPMENT COSTS AND IDENTIFY THE TYPE OF EQUIPMENT ACCOUNTING FOR THE LARGEST SHARE OF COSTS

To examine key costing drivers information on the required number of items and unit prices is also included in this table. Devices accounting for the largest share of costs are highlighted.
Note that calculations will be 0 if that facility typology was not costed or the equipment was not included.

Equipment Name	Facility Equipment Costs ($)			Facility Equipment Costs as % of total			Facility Equipment Numbers (as calculated in the 3.Equipment_Numbers worksheet)			Unit price ($) from 1.General Inputs
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	
Closed incubator	$11,735.29	$15,647.06	$23,470.59	7.4%	8.6%	10.1%	3	4	6	$3,912
Bassinet (washable)	$4,658.82	$6,211.76	$9,317.65	2.9%	3.4%	4.0%	9	12	18	$518
Transport incubator	$2,385.88	$2,385.88	$2,385.88	1.5%	1.3%	1.0%	2	2	2	$1,193
Overhead servo incubator	$3,235.62	$4,853.44	$6,471.25	2.0%	2.7%	2.8%	2	3	4	$1,618
Heat shield	$210.35	$315.53	$420.71	0.1%	0.2%	0.2%	2	3	4	$105
Wall suction unit	$2,744.12	$3,658.82	$5,488.24	1.7%	2.0%	2.4%	3	4	6	$915

STEP 2 – ESTIMATE COSTS OF TRANSPORT, DISTRIBUTION & INSTALLATION

In some countries, the unit price of each device is all inclusive, that is, it includes at least a one-year warranty as well as transport, distribution, and installation costs. In these cases, users just need to leave cells blank and comment in the user notes that transport was not costed separately because it was already included in the equipment acquisition value.

In other cases, however, transport, distribution and installation costs are not included in vendors' prices and need to be estimated separately.

Rules-based costing

Detailed costings would require users to enter the costs of transport, distribution, and installation for each device. Instead, and with a view to facilitate data collection, the tool uses rules-based costing and estimates those costs as a percentage of total equipment acquisition value.

To account for cost variations across facility cost/location typologies, different percentages can be used to estimate costs for each typology included. This information can be sourced from recent projects funding facility equipment. For example, in Zambia, UNICEF information suggested that these costs would be equivalent to 20%, 30% and 40% of equipment acquisition value for mid, high & very high-cost locations, respectively.

So, in step 2.1 the user enters the estimated costs as a percentage of equipment acquisition value for each typology and has the opportunity to revise calculated costs as required.

We acknowledge that this basic rules-based approach has limitations. For example, less expensive, but heavier and larger equipment might have higher distribution costs compared to more costly but smaller equipment.

However, in the absence of country asset databases with this type of information, rules-based costing used judiciously can provide a useful approximation of true costs without overburdening users requesting transport cost data for each item. Additionally, by including all three facility cost/location typologies, the

user can obtain a range of estimates for each facility size, which helps to account for the uncertainty of modelled costs.

Also note that if detailed information is available, user-defined figures can be entered in the dark blue cells. These cells can also be used to override the tool rules-based calculations for one or all typologies.

Review final costs by typology

In Step 2.2 the user reviews and verifies estimated costs that will be used for calculating final costs. Note that if you have entered both a percentage and a user-defined value, the latter overrides the former and is used for the final cost calculations. To prevent any misunderstanding that might lead to erroneous calculations, in this step the user has the opportunity to verify the final costs that will be used for each size and location/cost typology.

STEP 2 - ESTIMATE & VALIDATE COSTS OF EQUIPMENT TRANSPORT, DISTRIBUTION AND INSTALLATION

If equipment prices DO NOT include transport, distribution and installation costs, estimate those costs for each facility typology.

Transport, distribution and installation costs can be significant, so if they are not included in equipment acquisition value, they can be calculated here

Note: Leave cells blank if transport, distribution and installation cost sare included in equipment acquisition value

2.1. Estimate costs as a percentage of equipment acquisition value for each typology and revise/modify estimates if required

Enter % of equipment value or user-defined costs. Note that user-defined costs will override any modelled estimates

In Zambia, 20%, 30% & 40% estimates were used based on Unicef experience in country

		Estimated model costs			Enter user-defined costs here. Note they override modelled estimates			User Notes
Equipment Transport, Distribution and Installation Costs as a % of Equipment Acquisition Value, by Location Typology	% of equipment value	Small	Medium	Large	Small	Medium	Large	
Mid Cost	20%	$31,757	$36,550	$46,399				High costs noted at country meetings. Percentages (20%, 30% & 40%) based on Unicef recommendations
High Cost	30%	$47,636	$54,825	$69,599				
Very High Cost	40%	$63,515	$73,100	$92,799				

2.2. Review costs that will be used for final results

Final transport, distribution & installation costs by typolog	Small	Medium	Large
Mid Cost	$31,757	$36,550	$46,399
High Cost	$47,636	$54,825	$69,599
Very High Cost	$63,515	$73,100	$92,799

STEP 3 – ESTIMATE ANNUAL COSTS OF EQUIPMENT CONSUMABLES & RENEWABLES

An adequate supply of equipment, consumables & renewables is essential for quality of care. To ensure availability all year round, annual health budgets need to reflect this important recurrent expenditure.

Rules-based costing

As procurement and supply management systems are strengthened in the country, information will become available on consumables and renewables required for each facility device during the year. This would allow for individual cost estimates by consumables/renewables and aggregated by each device.

However, in many countries this information might not be readily available. Such granular cost estimates would require collecting data on the number of required consumables/renewables for each device and their unit prices. For the purposes of the costing tool and to minimize the data collection burden, we have opted for a rules-based approach: the overall annual cost of equipment consumables and renewables is estimated as a percentage of the equipment acquisition value.

In Step 3.1 the user enters the estimated percentages by facility cost/location typology. Remember that these figures represent what the supply of consumables & renewables would cost on average for a facility

fully equipped as per country standards. This information can be sourced from facility managers or procurement and supply teams from the Ministry of Health or development partners.

For example, in Zambia, we consulted with UNICEF experts who suggested that based on their experience, an estimate of 30% to 40% of equipment acquisition value would be reasonable to account for the required annual costs of equipment consumables and renewables of a fully functional facility.

In Ghana, government officials provided a similar range of estimates. This aligned with the views of USAID experts consulted for the exercise who noted that, in their experience, it is likely that the costs of equipment consumables and renewables (as a percentage of equipment acquisition value) are broadly similar across countries.

When applying this rules-based costing, it is important that you consider the devices included in the list and adjust estimates as required in the dark blue cells.

For example, if the equipment list includes shared items at 100% of their value, this rules-based costing will overestimate the cost of consumables and renewables for the unit as it will include 100% of those costs, even though the unit is not responsible for consumables used by other patients. This will be particularly problematic in instances where those shared items account for a large proportion of the equipment acquisition value.

If this is the case, the estimated consumables and renewables cost would need to be adjusted downwards in the dark-blue cells also included in this step, to reflect the fact that only a proportion of consumable costs for shared equipment will be allocated to the unit budget. This can be easily done, for example by running a separate 'temporary' model with the same parameters, but with costs of shared equipment apportioned in the General Inputs sheet (e.g., at 20% rather than 100%). Then as shown below you enter the values for consumables and renewables that were estimated by the 'temporary' model and make a note of the adjustments made.

Review final costs by typology

In Step 3.2 the user has the opportunity to review costs by facility size and cost/location typologies, which will be used in the final cost calculations. The final figures used will reflect modeled estimates unless they have been overridden by the user in the dark-blue cells.

STEP 3. ESTIMATE & VALIDATE ANNUAL COSTS OF EQUIPMENT CONSUMABLES AND RENEWABLES

3.1. Estimate costs as a percentage of equipment acquisition value for each typology and revise/modify estimates if required

Enter % of equipment value or user-defined costs. Note that user-defined costs will override any modelled estimates

Note UNICEF experience in India & Zambia suggests 30% to 40% might be reasonable estimates.

		Estimated model costs			Enter user-defined costs here. Note they override modelled estimates			User Notes
Annual Costs Consumables and Renewables as % of Equipment Value	% of Equipment Value	Small	Medium	Large	Small	Medium	Large	
Mid Cost	30%	$47,636	$54,825	$69,599	$39,223	$46,412	$58,433	Based on Unicef recommendations (30 to 40% depending on equipment). However, adjusted for shared equipment (SSN account for a fifth of consumable costs). Base scenario
High Cost	35%	$55,576	$63,963	$81,199	$45,760	$54,147	$68,171	
Very High Cost	40%	$63,515	$73,100	$92,799	$52,297	$61,882	$77,910	

3.2. Review costs that will be used for final results.

Final annual costs of consumables and renewables by typ	Small	Medium	Large
Mid Cost	$39,223	$46,412	$58,433
High Cost	$45,760	$54,147	$68,171
Very High Cost	$52,297	$61,882	$77,910

STEP 4 – ESTIMATE ANNUAL COSTS OF SPARE PARTS

Ensuring an adequate supply of spare parts is a critical maintenance strategy. In some settings it might be useful to account for the cost of spare parts separately, which can be done here. The steps to estimate the annual cost of spare parts are similar to those described under Steps 2 & 3 above.

The tool uses rules-based costing and requests the user to estimate these costs as a percentage of equipment acquisition value for each facility location/cost typology (Step 4.1).

Estimated costs can be overridden in dark blue cells and the user has the opportunity to review and verify the costs to be used in the final calculations (Step 4.2).

Separate or included in overall maintenance?

Note that sometimes it might be difficult to obtain the required estimates for spare parts as they are generally included in overall maintenance costs. So, in this instance it is advisable to skip this step and estimate the overall cost of maintenance strategies, inclusive of spare parts. In this event, leave cells blank and make a comment in the User Notes so that you will remember later that these costs were included in regular maintenance.

STEP 4. ESTIMATE & VALIDATE ANNUAL COSTS OF SPARE PARTS

4.1. Estimate costs as a percentage of equipment acquisition value for each typology and revise/modify estimates if required

Enter % of equipment value or user-defined costs. Note that user-defined costs will override any modelled estimates

Leave cells blank if spare parts costed in Step 5 below (maintenance strategies)

		Estimated model costs			Enter user-defined costs here. Note they override modelled estimates			User Notes
Equipment Value	**%**	**Small**	**Medium**	**Large**	**Small**	**Medium**	**Large**	
Mid Cost		$0	$0	$0				Due to lack of data, costed as part of maintenance below.
High Cost		$0	$0	$0				
Very High Cost		$0	$0	$0				

4.2. Verify costs that will be used for final results.

Final Annual Cost of Spare Parts by Typology	Small	Medium	Large
Mid Cost	$0	$0	$0
High Cost	$0	$0	$0
Very High Cost	$0	$0	$0

STEP 5 – ESTIMATE ANNUAL COSTS OF MAINTENANCE STRATEGIES

Strategies to prevent the occurrence of equipment failures (preventive maintenance) and to fix and or replace equipment when those failures happen (corrective maintenance) are critical for delivering good quality of care. Designing and implementing equipment maintenance strategies requires a whole system approach addressing amongst other factors, supply and distribution systems, the need for standard maintenance procedures, adequate budgeting and capacity building for medical staff and specialized technicians.

Detailed maintenance strategies and plans cannot be costed in the tool as they require tailored costings that reflect the nuances of each preventive and corrective management strategy and their supporting systems. Instead, the costing tool aims at providing an overall estimate that can help as a starting point for discussions and which reminds users to include maintenance strategy costs in scale-up budgets.

Rules-based costing

For the above purpose and in line with previous steps, the tool uses a rules-based approach that estimates maintenance costs as a percentage of equipment acquisition value, while also allowing the user to override those estimates as required (Step 5.1).

To provide some initial benchmarks, we have indicated in the tool that maintenance costs of 10 to 15% of the equipment acquisition value were used in Zambia, while in Ghana a lower cost range (8% to 12%) was estimated by government officials. USAID experts consulted for the exercise in Ghana noted that these costs are likely to vary across countries.

These or any other estimates used in rules-based costing will need to be sourced or validated with facility managers and country experts and should take into consideration the devices included in the list.

For example, adjustments might need to be made if shared equipment has been included or if a large proportion of the equipment acquisition value is accounted for by items with very low maintenance costs. In this case, you can follow the same steps described above.

On the other hand, if detailed maintenance strategy costings are available in the country, figures can be entered in the dark-blue cells directly.

Review final costs by typology

Cost estimates by facility typology that will be used in the final results can be reviewed and verified in Step 5.2. Remember that as discussed earlier, caution needs to be exercised when using rules-based costings such as setting costs as a percentage of equipment acquisition values. The uncertainty of the estimates can however be accounted for by including the three cost/location typologies. They will provide you with three-point estimates for each facility size which give you an indicative range of the expected maintenance costs.

STEP 5. ESTIMATE & VALIDATE ANNUAL COSTS OF MAINTENANCE STRATEGIES (PREVENTIVE & CORRECTIVE)

Note that costs related to human resources, such as specialised staff (i.e. engineers) or mandatory training for health staff should be costed under human resources
Remember to include spare parts if not costed separately

5.1. Estimate costs as a percentage of equipment acquisition value for each typology and revise/modify estimates if required

Enter % of equipment value or user-defined costs. Note that user-defined costs will override any modelled estimates
Note UNICEF experience in India & Zambia suggests 10 to 15% might be reasonable for annual expenditure on maintenance in Zambia

		Estimated model costs			Enter user-defined costs here. Note they override modelled estimates		
Maintenance strategies as % of equipment acquisition value	%	Small	Medium	Large	Small	Medium	Large
Mid Cost	10%	$15,879	$18,275	$23,200	$13,074	$15,471	$19,478
High Cost	12%	$19,054	$21,930	$27,840	$15,689	$18,565	$23,374
Very High Cost	15%	$23,818	$27,413	$34,799	$19,611	$23,206	$29,216

5.2. Review costs that will be used for final results.

Fianl Annual Costs of Preventive and Corrective Maintenance Strategies	Small	Medium	Large
Mid Cost	$13,074	$15,471	$19,478
High Cost	$15,689	$18,565	$23,374
Very High Cost	$19,611	$23,206	$29,216

STEP 6 – REVIEW ANNUAL COST OF SPARE PARTS & MAINTENANCE STRATEGIES

In this step you are asked to review the total cost of spare parts & maintenance, to prevent double counting and ensure that annual allocations for maintenance strategies, including spare parts, are adequate. If all facility size and cost-location typologies have been included in the exercise, up to nine-point estimates are produced.

If spare parts are costed as part of maintenance strategies in Step 5, figures in this table will be the same as those in the previous step. Also note that these represent the costs that will be displayed in the final summary of facility cost charts and tables (Facility Typology Analytics). They are categorized as recurrent regular maintenance costs, to distinguish them from costs on consumables & renewables.

STEP 6. REVIEW TOTAL ANNUAL COSTS OF SPARE PARTS + MAINTENANCE STRATEGIES

Review that estimated annual maintenance costs, including spare parts, are adequate

Review of Total Annual Maintenance Costs (Spare Parts + Preventive & Corrective) by Typology	Small	Medium	Large
Mid Cost	$13,074	$15,471	$19,478
High Cost	$15,689	$18,565	$23,374
Very High Cost	$19,611	$23,206	$29,216

STEP 7 – ESTIMATE & VALIDATE COSTS OF EQUIPMENT BUFFER STOCKS

In some contexts, it might be advisable to include in the scale-up budget the cost of equipment buffer stocks that can be accessed by individual facilities in the event of equipment failure. For example, in some instances UNICEF recommends adding 10% of buffer stocks to be managed at regional level. In this step you enter the estimated percentage of buffer stocks required by facility cost/location typology.

Note that the tool algorithm applies these percentages to the equipment acquisition value, without distribution and installation costs. That is so because there are no installation costs for buffer stocks and transport and distribution costs of equipment reflect transport and distribution to facilities, not to regional centers.

The tool allows for different costs by facility size/location typology to be entered in Step 7.1, although the same percentage can be entered for all typologies. Costs thus calculated can then be reviewed in Step 7.2. If no buffer stocks are included, leave blank or write 0.

7.1. Estimate the expected one-off costs of buffer stocks (inclusive of transport/distribution) as a % of equipment replacement value.

Enter the expected cost (as a percentage of equipment value) of any buffer stocks required.
The tool calculations assume this is a percentage of new equipment value (excluding distribution costs)
UNICEF recommends 10% of buffer stocks to be managed at regional level.

Once-Off Equipment Buffer Stock Costs as % of equipment value	%	User Notes
Mid Cost	10%	Differences to account for difference in transport costs. Applies also to shared equipment
High Cost	12%	
Very High Cost	15%	

7.2. Review Once-Off Equipment Buffer Stock Costs by Facility Typology

Once-Off Equipment Buffer Stock Costs	Small	Medium	Large
Mid Cost	$15,879	$18,275	$23,200
High Cost	$19,054	$21,930	$27,840
Very High Cost	$23,818	$27,413	$34,799

STEP 8 – ESTIMATE & VALIDATE COSTS OF ADDITIONAL EQUIPMENT & FACILITY FURNITURE

Here the user estimates additional costs related to office and communications equipment as well as facility furniture, such as lockers for staff, mothers and family and any other items, which have not been included under the list of essential equipment in the General Inputs module.

In Step 8.1. the focus is on office and communications equipment specific to components of the model of care such as data systems & referrals. This will ensure that any equipment requirements associated with

these components are included in the costs of setting up small and sick newborn care units. However, we have also included general office equipment here because some of those equipment devices (such as printers) might be used for multiple purposes.

Note that to facilitate inputs, estimated amounts (not percentages) of acquisition costs at facility level should be entered here. So, if for example, two laptops each valued at U$1,000 are required for any facility size to cover general unit management needs and data systems, you should enter U$2,000 under each facility and make the corresponding comment under User Notes.

8.1. Enter acquisition costs of office & communitations equipment required for other model of care components such as data systems & referrals and general managemer
Include laptops, desktops, printers, mobile phones, landlines phones and any other office equipment required to support referrals, data systems and general administration of th
Enter total amount, not percentages. In User Notes enter what is included (i.e. number of items) and their main purpose (i.e. to support referrals)

Office & Communications equipment for other components of care (inc. referral & data systems) and unit management	Small ($)	Medium ($)	Large ($)
Laptop			
Desktop			
Printer			
Mobile phone			
Landline phone			
Radios			
Other communication equipment			
Acquisition Costs of Office Equipment	**$0**	**$0**	**$0**

In Step 8.2. estimated amounts to cover costs for any additional items, including facility furniture not costed elsewhere should be entered for each facility size typology included. As noted in the costing tool, personal protective equipment that has not been costed elsewhere should also be included here.

8.2. Enter acquisition costs of other facility and office furniture & equipment not included elsewhere.
Facility level costs should be entered here to ensure these expenses are properly accounted for.
Can include costs for furniture items, such as staff office chairs and desks, wardrobes and mothers' beds, as well as TVs or other equipment such as medicine trolleys not costed elsewh
Remember to include here any personal protective equipment for infection prevention and control if it has not been accounted for earlier.
Enter total amount, not percentages.

Additional facility furniture and equipment	Small ($)	Medium ($)	Large ($)
Acquisition Costs of Furniture & Other Equipment	$15,000	$18,000	$20,000

Then, similar to equipment, in Step 8.3., distribution costs should be entered as a percentage of office and communications equipment & furniture acquisition value by facility cost/location typology.

In Step 8.4 you can review the total costs of these additional furniture and equipment items (inclusive of distribution) which are presented by facility size and cost/location typologies.

If all typologies have been included in the model, up to nine-point estimates will be calculated. As noted earlier, they will provide you with a reasonable range to account for uncertainty of modelled estimates when discussing results with stakeholders.

In this step you are also provided with the opportunity to revise and override modelled estimates in the dark-blue cells.

Step (8.5) displays the final costs to be used in the calculations, which correspond to modelled estimates, unless they have been overridden by the user.

8.3. Enter distribution costs for location typologies as a percentage of furniture & other equipment acquisition value. Leave blank if distribution costs included in acquisition costs
Note: These costs are expected to be lower than for medical equipment due to issues such as installation.

Distribution costs by location typology	% of furniture & equipment value	User Notes
Mid Cost	10%	Lower costs than for equipment
High Cost	12%	
Very High Cost	15%	

8.4. Review Costs of Furniture, Office Equipment & Other (Acquisition value + distribution) by typology and revise/modify estimates if required

				Enter user-defined costs here. Note they override modelled estimates		
Costs of Furniture, Office Equipment & Other (including distribution) by Typology	Small	Medium	Large	Small	Medium	Large
Mid Cost	$16,500	$19,800	$22,000			
High Cost	$16,800	$20,160	$22,400			
Very High Cost	$17,250	$20,700	$23,000			

8.5. Review costs that will be used for final results.

Final Costs of Furniture, Office Equipment & Other	Small	Medium	Large
Mid Cost	$16,500	$19,800	$22,000
High Cost	$16,800	$20,160	$22,400
Very High Cost	$17,250	$20,700	$23,000

STEP 9 – ESTIMATE DIFFERENTIAL NEEDS OF EQUIPMENT AND FURNITURE BY TYPOLOGY

Facilities are likely to vary in the extent to which the required equipment is available and so will need different amounts of equipment investments to fill the gap. The costing tool uses the Facility Equipment Needs typology (major, partial & limited), to adjust the required capital investments accordingly.

This step displays the Equipment Needs typologies that have been included for costing in General Inputs. For each typology, a percentage representing the percentage of equipment acquisition value investments that are needed for that typology should be entered.

As noted in the costing tool, to estimate the cost of fully equipping and furnishing a facility as per country standards 100% should be entered under the major need category.

For partial and limited need, the percentages entered should reflect the percentage of investment required to address the gap. The higher the percentage entered, the higher the investments needed. So, if you enter 40% for facilities with partial need, the tool will apply this percentage to equipment and furniture values.

These figures can be easily sourced from local experts during country workshops.

STEP 9. ESTIMATE DIFFERENTIAL NEEDS OF EQUIPMENT AND FURNITURE BY TYPOLOGY

Enter % of equipment and furniture investments needed by typology
Adjusts investments needed at each typology, based on current availability
The higher the percentage, the higher the investment need
To estimate the cost of fully equipping and furnishing a facility enter 100% under major need

Facilities in need of SNCU essential equipment:	As % of acquisition value
Major need	100%
Partial need	45%
Limited need	15%

STEP 10 – ESTIMATE & VALIDATE THE COST OF MEDICINES & SUPPLIES

Detailed costings for medicines to treat small and sick newborns require epidemiological modeling, which is outside the scope of the costing tool. Instead, information on the average cost of medicines per newborn admission is used to calculate annual costs at facility level.

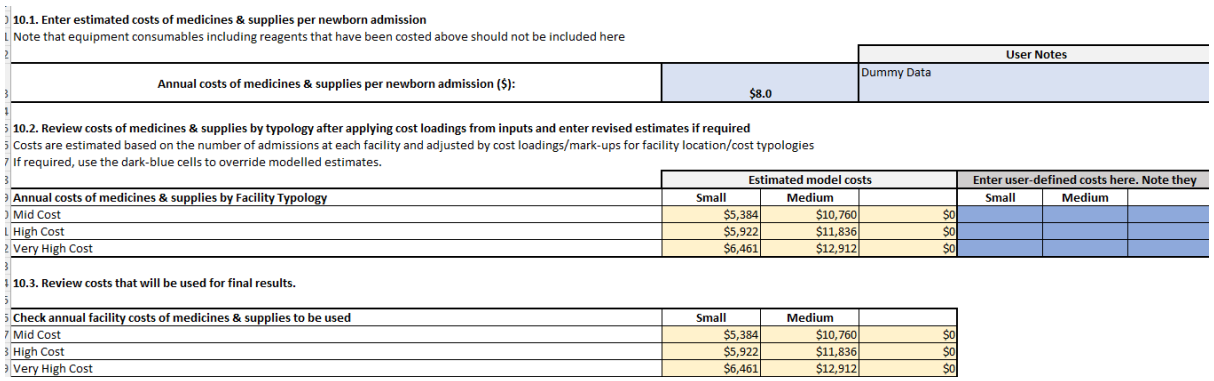
Costs per newborn admission

In Step 10.1. the user is asked to enter this information, which should exclude equipment consumables, and reagents costed above. In settings where data is available from a facility operating as per country standards and that has not experienced shortages of medicines or other system failures affecting service volume and quality of care, their average per capita expenditure on medicines and supplies can be used as a guide. If this data is not available, discuss with country experts other sources of available information or a range of estimates that could be reasonable.

Review & validate costs by typology

Similar to previous steps, in Step 10.2 the user reviews calculated costs by typology, which incorporate adjustments by cost/location based on cost loading data entered in the general inputs sheet. If required, user-defined costs can be entered in the dark-blue cells to override the tool calculations.

Finally in Step 10.3. the user reviews the costs that will be used in the final results, which will be equivalent to the estimated model costs, unless they have been overridden.



10.1. Enter estimated costs of medicines & supplies per newborn admission

Note that equipment consumables including reagents that have been costed above should not be included here

		User Notes
Annual costs of medicines & supplies per newborn admission ($):	**$8.0**	Dummy Data

10.2. Review costs of medicines & supplies by typology after applying cost loadings from inputs and enter revised estimates if required

Costs are estimated based on the number of admissions at each facility and adjusted by cost loadings/mark-ups for facility location/cost typologies

If required, use the dark-blue cells to override modelled estimates.

	Estimated model costs			Enter user-defined costs here. Note they		
Annual costs of medicines & supplies by Facility Typology	**Small**	**Medium**		**Small**	**Medium**	
Mid Cost	$5,384	$10,760	$0			
High Cost	$5,922	$11,836	$0			
Very High Cost	$6,461	$12,912	$0			

10.3. Review costs that will be used for final results.

Check annual facility costs of medicines & supplies to be used	**Small**	**Medium**	
Mid Cost	$5,384	$10,760	$0
High Cost	$5,922	$11,836	$0
Very High Cost	$6,461	$12,912	$0

HUMAN RESOURCES PLANNING & BUDGETING

In this module you set and cost human resource standards for ensuring a sufficient number of health workers and support staff is available to provide good quality of care 24/7.

To ensure staff are supported to continuously develop their careers, abilities, skills and knowledge, this module includes costings of human development strategies, such as those related to mentoring, supervision, and coaching visits as well as mandatory in-service training.

Note that the costing tool treats higher education courses to upskill human resources as a strategy to be planned and costed at higher levels. These courses are thus not costed under this module but in the Leadership, National and Regional planning & budgeting module.

The human resources module also includes costing for recruiting and retaining staff in facilities classified as hard-to-recruit and/or most challenging recruitment areas.

HUMAN RESOURCES - PLANNING & BUDGETING

MODULE OVERVIEW

Set country standards for Human Resources at each facility size typology & estimate associated costs

* Enter numbers of FTE facility staff required, as per country standards
* Review annual cosst of staff salaries by typology

Set country standards for supervision/mentoring/coaching visits & estimate associated costs

* Set minimum number of visits required at each facility
* Review expected annual costs

Set country standards for mandatory in-service training & enter estimated costs

* Identify mandatory in-service trainings
* Estimate and review annual cost at facility level

Note that higher education courses to upskill workforce are costed at national level in the QoC National and Regional Strategies Module

Identify and cost recruitment and retention strategies for hard-to-recruit and most challenging recruitment areas

* Identify strategies and estimate **capital** costs, such as those related to housing infrastructure or purchasing of motorbikes or other transport vehicles
* Identify strategies and estimate **recurrent annual** costs, such as those related to additional opportunities for professional collaboration and development

Note that strategies applicable to all areas, inlcuding standard, should be identified and costed in the previous steps or as part of Quality of Care Facility strategies

Remember:

Light blue cells are user inputs.

Yellow cells are tool calculations not to be manually changed

If required, cells in dark blue can be used for overriding modelled estimates

STEP 1 – ENTER THE REQUIRED NUMBERS OF CLINICAL AND SUPPORT STAFF & REVIEW COSTS

All tables under this step show the clinical and support staff comprising the interprofessional team required at each facility, which correspond to those listed in the General Inputs module Step 5.1.

Facility staff requirements

Here, in Step 1.1 the user should enter the number of full-time equivalent staff members required at each facility to ensure quality of care 24/7. These standards should be set for each facility size typology included in the exercise. Remember that if less than three typologies were included, there will be columns with blank headings, indicating that no data should be entered into those cells. For example, if you decided only to cost small and medium size facilities, the third column that would have corresponded to large facilities will be blank.

Users should draw on country standards and guidelines determining staff/facility ratios necessary to deliver quality of care. If those ratios are not specified, international guidance, including the upcoming WHO & UNICEF global norms, can be used as a starting point for discussions. Stakeholders would also need to consider contextual issues such as number of shifts and working hours as well as any economies or

diseconomies of scale that might impact the number of required staff per each facility size typology (small, medium & large) in the local context.

Special attention should be given to determining the number of nurses (or equivalent health care worker with the required competencies) required to deliver round-the-clock care. Due to the nuances involved in setting nurse-to-patient ratios, these calculations have not been automated within the costing tool and must be performed separately. Although an in-depth discussion is beyond the scope of this manual, we will briefly outline suggested steps to guide discussions at the country level, based on the costing exercise conducted in Ghana.

- ✓ First, identify the number of nurses needed per shift per infant, factoring in workload differences associated with various bed types. Additionally, consider potential task-shifting with support staff or with mothers staying with their babies.

  Note that draft WHO and UNICEF norms for level 2 facilities delivering small and sick newborn care (Version 29 February 2024) suggest a ratio of 1 nurse to 3 to 4 newborns per shift for those babies not requiring Continuous Positive Airway Pressure, CPAP. For those in need of CPAP, a ratio of 1 nurse to 2 newborns is recommended by the draft norms.

- ✓ Second, since nurses (or the equivalent health workers) need to provide care 24/7, establish the number of full-time-equivalent workers required to ensure round-the-clock coverage for each nursing position. This involves accounting for the number of working hours and shifts in a week, as well as time off due to holidays, training and sick leave. For example, 5.5 to 6 full-time-equivalent workers may be needed to ensure 24/7 availability of one nursing position.

- ✓ Third, after calculating the required number of nurses for the unit, evaluate whether the overall staffing levels are adequate. This assessment should consider the skill mix and knowledge of different nurse cadres, availability of other staff members (e.g., neonatologists, doctors), and additional responsibilities such as unit management, triage, or referrals.

As noted in the costing tool, it is also important when setting the standards (for nurses and other staff) to consider the requirements of each component of the model of care and the expected impact on staff workloads.

STEP 1 - ENTER & VALIDATE REQUIRED NUMBERS OF CLINICAL AND SUPPORT STAFF & REVIEW COSTS BY FACILITY TYPOLOGY

1.1. Enter required FTE staff numbers for each facility size typology
Required FTE numbers should be sourced from country standards and guidelines.
* Staff requirements should account for the expected workload, including clinical & administrative tasks related to all components of care
If country guidelines are not available, as a starting point for discussions in country, staff ratios can be sourced from the GFF case study or international guidelines
Note: If typology is not costed or staff not required, enter 0 or leave blank

	Required FTE per facility			User Notes
Staff Category (Clinical & Support)	**Small**	**Medium**	**Large**	
Neonatologist	0	0	0.3	
Medical Officer	1	1	2	
Medical Licentiates	1	1	2	
Clinical Officers	1	1	1	
Registered Paediatric/Neonatal Nurses	8	8	10	

Review & validate staff costs by typology

Once country standards on human resources are entered in the corresponding cells, the user reviews the total staff costs for each facility typology included (Steps 1.2, 1.3. ,1.4 & 1.5).

Step 1.2. shows the results for standard recruitment areas, Step 1.3 for hard-to-recruit areas & Step 1.4 for the most-challenging recruitment areas. If that staff recruitment typology (standard, hard-to-recruit & most challenging recruitment) was not included in the exercise, results will be shown as 0.

Note that under each review step you are able to compare results across facility sizes (small, medium & large). Be sure to review staff costs in detail since they are likely to represent the largest recurrent costs for delivering good quality-of-care to small and sick newborns.

To facilitate sense-checking results tables also show the percentage of costs for each staff category. This allows you to identify which categories are responsible for the largest share of costs and how that share varies or not with facility size.

To facilitate identifying what drives facility staff costs and validate results, those tables also include reminders of costs (i.e., salary and allowances) that were entered in General Inputs as well as the country standards (i.e., number of full-time equivalent staff members per facility) entered in the first step above.

1.2 Review facility staff costs by staff category for standard recruiting areas

STANDARD RECRUITING AREAS - ESSENTIAL STAFF	Annual Cost ($)			Percentage (%)			Unit costs from inputs
Staff Category (Clinical & Support)	Small	Medium	Large	Small	Medium	Large	Annual costs inc. salaries,
Neonatologist	$0	$0	$7,775	0%	0%	3%	$25,917
Medical Officer	$25,917	$25,917	$51,834	**15%**	**15%**	**18%**	$25,917
Medical Licentiates	$7,533	$7,533	$15,066	4%	4%	5%	$7,533
Clinical Officers	$5,386	$5,386	$5,386	3%	3%	2%	$5,386
Registered Paediatric/Neonatal Nurses	$47,176	$47,176	$58,970	**27%**	**27%**	**21%**	$5,897
Registered Nurses	$21,544	$21,544	$26,930	**12%**	**12%**	**9%**	$5,386
Midwives	$5,897	$5,897	$11,794	3%	3%	4%	$5,897
Administrative, secretarial, clerical staff	$4,918	$4,918	$4,918	3%	3%	2%	$4,918
House Keepers	$13,040	$13,040	$26,080	7%	7%	9%	$3,260
Infection Control Staff	$5,386	$5,386	$5,386	3%	3%	2%	$5,386
Data Registry Clerk	$3,785	$3,785	$3,785	2%	2%	1%	$3,785
Nutritionist/Nutritional Demonstrators	$19,132	$19,132	$38,264	**11%**	**11%**	**13%**	$4,783
Bio-medical technologists	$2,392	$2,392	$4,783	1%	1%	2%	$4,783
Security Guards	$9,780	$9,780	$19,560	6%	6%	7%	$3,260
Drivers	$3,423	$3,423	$3,423	2%	2%	1%	$3,423
Ambulance Call Centre Staff	$1,799	$1,799	$1,799	1%	1%	1%	$3,598
	$0	$0	$0	0%	0%	0%	$0
	$0	$0	$0	0%	0%	0%	$0
	$0	$0	$0	0%	0%	0%	$0
	$0	$0	$0	0%	0%	0%	$0
	$0	$0	$0	0%	0%	0%	$0
Annual Staff Costs	**$177,108**	**$177,108**	**$285,753**	100%	100%	100%	

If all facility typologies were included, that is facilities of small, medium & large sizes, as well as, standard, hard-to-recruit and most challenging recruitment areas, there will be nine-point estimates of staff salaries, ranging from a minimum value representing small facilities in standard recruiting areas to a maximum value representing large facilities in the most challenging to recruit areas.

So, in step 1.5 the table shows all the estimates for the facility typologies included so that the user can compare and examine how those costs vary with size and cost/location. If a typology has not been included the corresponding row or column heading will be blank and values will be shown as 0, as in the example below.

1.5. Review total facility staff salaries by typology.
Results will be 0 if typology not included

Annual Cost of Facility Staff Salaries	Small	Medium	
Standard area	$140,200	$228,700	$0
Hard-to-Recruit	$187,750	$302,125	$0
	$0	$0	$0

STEP 2 – COST MENTORING, SUPERVISION & COACHING VISITS

In Step 2.1 the user enters the number of regional visits to each facility in a year. Note that this is a very important element of quality of care, so it has been explicitly included to ensure it does not fall through the cracks, even though it is a relatively small cost item.

Estimated mentoring, supervision and coaching costs are reviewed in Step 2.2. To facilitate sense-checking the results, the corresponding unit costs are also shown in this table. Remember that in Step 5.2. of the General Inputs sheet, you entered the unit costs for each regional visit, which included transport, allowances, per diems and any other related costs. These costs were then adjusted by the cost loading/mark-up factors in General Inputs Step 6 and the results displayed in light gray cells correspond to those adjusted costs.

Note that unlike previous steps, there are no dark blue cells to revise modeled estimates. That is so, because the user has had the opportunity to review the cost loading/mark-up factors in General Inputs, based on the modeled estimates for these regional visits.

2.1. Enter number of mentoring/supervision/coaching visits to each facility required in a year:

	Small	Medium	Large	User Notes
Number of annual mentoring/supervision visits by regional staff to each facility =	4	4	4	Relatively small cost component

2.2. Review estimated annual costs of mentoring and supervision by facility size and cost/location typology after applying cost loadings from inputs

Mentoring/Supervision/Coaching	Small	Medium	Large	Unit costs - See General Inputs Step 6.2
Mid Cost	$660	$660	$660	$165
High Cost	$726	$726	$726	$182
Very High Cost	$792	$792	$792	$198

STEP 3 – IDENTIFY & COST MANDATORY IN-SERVICE TRAINING

In Step 3.1. you identify individual mandatory in-service training packages, including refresher trainings and enter the key costing parameters, as follows:

First, enter the name of the training package and remember to consider the type of trainings required to deliver good quality of care as well as specific trainings related to various components, such as post-discharge follow-up, linkage of maternal and newborn care and family and community involvement and support.

Second, enter the number of staff that needs to be trained at each facility size typology included. So, for example if the specific training is mandatory only for nurses, enter the number of nurses at each facility size.

Third, enter the number of days required for delivering the training package.

Fourth, enter training costs per person per day. These costs should be all inclusive, that is, they should include any per diems and allowances, as well as meals, training materials and tutor fees.

Fifth, enter the number of training sessions required at each facility in a year. So, if the training takes place every year, enter 1, but if the training is required every two years, enter 0.5.

Sixth, enter user notes as appropriate.

Seventh, review the individual package training cost per year by facility size. These costs are estimated as the product of:

- ✓ number of trained staff by facility size **x** number of days **x** cost per person per day **x** number of training sessions in a year.

3.1. Enter service parameters for mandatory in-service training. Include trainings for all components of small and sick newborn care and any associated quality standards
As appropriate in the local context, you can include here any trainings related to task-shifting i.e. to improve the capacity of nurses and midwives to deliver small and sick newborn care
If trainings will take place at a facility only once a year enter 1, if every 2 years, enter 0.5
The final columns (yellow cells) show total in-service training by facilty size

First: Enter Name of Mandatory in-service training package	Second: enter number of staff trained @ each facility			Third, enter # of days	Fourth, enter Costs per Person per Day ($)	Fifth, enter number of training sessions in a year	Sixth, Enter User Notes
	Small	Medium	Large				
Advanced Neonatal Training for all health staff	16	16	23	5	$60	0.5	Already in place
Neonatal training for nutrition staff	4	4	8	3	$50	0.5	Needs to be developed

Similar to other items, training costs by facility size are adjusted by cost loading/mark-up percentages to estimate costs by facility cost-location typologies.

Adjusted costs are shown in Step 3.2 where the user can review total mandatory in-service training costs for each typology included. Dark-blue cells can be used to modify these estimates. The final costs to be used in the model calculations are shown in Step 3.3.

3.2. Review Total Annual In-Service Training Costs by Facility Size and Location Typology after applying cost loadings/mark-ups from inputs. If required revise estimates in dark-

				Enter user-defined costs here. Note they override modelled estimates		
Annual In-Service Training Costs	Small	Medium	Large	Small	Medium	Large
Mid Cost	$2,700	$2,700	$4,050			
High Cost	$2,970	$2,970	$4,455			
Very High Cost	$3,240	$3,240	$4,860			

3.3. Review In-Service Training Costs to be used in the final calculations

	Small	Medium	Large
Mid Cost	$2,700	$2,700	$4,050
High Cost	$2,970	$2,970	$4,455
Very High Cost	$3,240	$3,240	$4,860

STEP 4 – IDENTIFY & COST OTHER HUMAN RESOURCE DEVELOPMENT STRATEGIES

In Step 4.1. the user enters the names and facility-level costs of any other human resource development strategies not costed elsewhere and covering any of the components of the model of care. They can include for example performance-based awards or the costs of peer mentoring programs. Step 4.2. adjusts these facility costs by the cost/mark-up loadings entered in inputs to estimate costs by facility size and location

typologies. The user can revise modelled estimates in the dark blue cells and the estimates to be used in the final calculations are shown in step 4.3.

4.1. Enter the name of other human resource development strategies and expected costs at facility level
For example, you can include here costs related to performance-based rewards or peer mentoring programs
Enter expected costs by facility size typology. Leave blank if not applicable or if that facility typology is not costed

	Costs by Facility size typology			
Name of Other Human Resource Strategy	**Small**	**Medium**	**Large**	User Notes
Total Annual - Other Human Resource Strategies	**$0**	**$0**	**$0**	

4.2. Review estimated total for other strategies by Facility Size and Location Typology after applying cost loadings/mark-ups from inputs. If required revise estimates in dark-blu

				Enter user-defined costs here. Note they override modelled estimates		
Other Human Resource Strategies (Annual Costs)	**Small**	**Medium**	**Large**	**Small**	**Medium**	**Large**
Mid Cost	$0	$0	$0			
High Cost	$0	$0	$0			
Very High Cost	$0	$0	$0			

4.3. Review Costs of Other Huma Resource Strategies to be used in the final calculations

	Small	Medium	Large
Mid Cost	$0	$0	$0
High Cost	$0	$0	$0
Very High Cost	$0	$0	$0

STEP 5 – REVIEW FACILITY COSTS OF HUMAN RESOURCE DEVELOPMENT STRATEGIES

In the previous steps you have estimated costs for various human resource development strategies. To help users sense-check their results when they are displayed in the Financing modules, this step shows the sum of the costs previously estimated, that is, mentoring, supervision, & coaching visits; mandatory in-service training and 'other'.

STEP 5 - REVIEW TOTAL HUMAN RESOURCE DEVELOPMENT COSTS

Review Total Human Resource Development Costs as estimated above.

These are the sum of Supervision/Mentoring PLUS in-service training PLUS Other Human Resource Development Strat

Annual Human Resource Development Costs (Supervision + In-service Training + Other)	**Small**	**Medium**	**Large**
Mid Cost	$3,360	$3,360	$4,710
High Cost	$3,696	$3,696	$5,181
Very High Cost	$4,032	$4,032	$5,652

STEP 6 – IDENTIFY & COST RECRUITMENT AND RETENTION STRATEGIES

In this step the user identifies and costs **additional** strategies for recruiting and retaining staff in hard-to-recruit & most challenging recruitment areas. We have emphasized additional, because these strategies and costs exclude financial incentives such as hardship and other allowances targeting staff in these areas, which have already been included in salaries & allowances.

Since the tool aims at supporting budgeting, a distinction is made between one-off, capital investments and costs that need to be incurred annually.

In Step 6.1 the user identifies recruitment and retention strategies that involve capital investments, such as construction of new housing; or purchasing motorbikes or other vehicles for staff transportation. Those capital investment costs need to be entered for each of the facility typologies included. For example, if a motorbike is required for a team of nurses, examine if the same or different number of vehicles are required for nurses at each facility size and estimate the associated costs.

In Step 6.2 the user identifies those strategies involving annual recurrent costs, such as additional supervision, mentoring and coaching visits for staff in those areas or opportunities for professional collaboration. As in the previous steps, costs are entered for each facility typology included.

Note that the model does not make any additional cost adjustments due to facility cost-location factors for these strategies. That is so because facilities in the corresponding staff recruitment typology are likely to face the same cost structure. So, remember that total costs shown in these steps will be used for the final calculations without any further adjustments.

Step 6.1. Identify recruitment and retainment strategies applicable and enter the amount of CAPITAL investments required.
For example, if new houses needs to be built for nurses and doctors, enter total costs per facility size typology
Leave blank if typology not included or if there are no additional strategies applicable

	Amount of CAPITAL costs required by facility					
	Hard-to-Recruit			Most Challenging		
Name of Recruitment/Retetion strategy	Small	Medium	Large	Small	Medium	Large
Strategy 1						
Strategy 2						
Strategy 3						
Strategy 4						
Strategy 5						
Total CAPITAL costs per facility	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Step 6.2. Identify recruitment and retainment strategies and enter the amount of RECURRENT costs required. Leave blank if typology not included or if there are no additional s
For example, if additional staff mentoring or collaboration opportunities are required, enter total costs per facility size typology
Note: Total will be 0 if facility typology not included

	Amount of RECURRENT costs per facility					
	Hard-to-Recruit			Most Challenging		
Name of Recruitment/Retetion strategy	Small	Medium	Large	Small	Medium	Large
Strategy 1						
Strategy 2						
Strategy 3						
Strategy 4						
Strategy 5						
Total RECURRENT costs per facility	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

FUNCTIONAL REFERRAL SYSTEM PLANNING & BUDGETING

A core component of the model of care is a functioning referral system that guarantees prompt access to specialized care for small and sick newborns, while preventing overburdening facilities with care that could be provided at lower-level facilities.

Adequate transport and communications, as well as a network of facilities with strong primary care providers linked to Level 2 facilities within accessible distances, are crucial to improve outcomes and to make the best use of scarce resources.

In this context, planning and budgeting for small and sick newborn care involves establishing and costing system standards (including infrastructure, human resources, equipment and transport) for adequately resourcing primary care facilities where babies are born to deliver pre-referral stabilization services.

However, in line with the intended objective of the costing tool, which focuses on the delivery of care at Level 2 facilities, this module does not include planning and budgeting for pre-referral stabilization services. Users interested in examining the associated system requirements and costs are referred to the costing report for Ghana.

To facilitate costing functional referral systems at Level 2 facilities, we have structured this module as follows:

First, users enter key parameters to estimate the expected volume of referrals from outside the facility. These estimates along with other costing parameters are used to calculate transport costs. We have allowed for both ambulance and other means of transport as they involve different type of costings.

Users are then asked to identify strategies and associated costs for communications and general care coordination involved in managing referrals.

Remember that requirements related to equipment and human resources should be costed under the previous modules and so are not included here. Probing questions are however included here to ensure that those requirements have been given due consideration.

STEP 1 – IDENTIFY KEY SERVICE PARAMETERS FOR FACILITY REFERRALS

To allow for different transport arrangements across various settings, different service parameters are requested for referrals by ambulance (Step 1.1) and for referrals using other means of transport (Step 1.2). These parameters can be easily sourced at country workshops or from interviews with key stakeholders.

In Step 1.3. the user reviews the expected number of facility admissions requiring referral transport and validate those values against the total number of facility admissions.

When entering and reviewing service parameters, it is important to consider both the in and out referrals whose transport will be funded out of the scale-up budget for small and sick newborn care at Level 2 facilities.

1.1. Enter service parameters for referrals using the Facility Ambulance Transport
Note: Leave blank or enter 0 if no referrals require funding for that type of transport

Service Parameters - Facility Ambulance Referrals	Small	Medium	Large
% of admissions expected to require referral by Facility Ambulance	40%	40%	40%
Number of Vehicles Required per Facility	1	1	1
Average number of kilometers per ambulance referral round trip	150	150	150

1.2. Enter Service Paramaters for referrals using Alternative Modes of Transport
Note: Leave blank or enter 0 if no referrals require funding for that type of transport

	Small	Medium	Large
% of admissions expected to require alternative means of referral transport	10%	10%	10%

1.3. Review number of admissions requiring referral transport (Facility Ambulance + Alternative Means of Transport)
This is estimated based on the number of expected admissions for each facility size (displayed here) and the % requiring referrals entered above. Included as rem

	Small	Medium	Large
# of admissions requiring referrals using Facility Ambulance	150	198	300
# of admissions requiring referrals using Alternative Means of Transport	38	50	75
Total facility admissions	375	495	750
All admissions requiring referral (Facility Ambulance + Other) as % of total	50%	50%	50%

STEP 2 – ESTIMATE TRANSPORT COSTS OF AMBULANCE REFERRALS AND REVIEW EQUIPMENT REQUIREMENTS

In this step the user will estimate and review costs of ambulance referrals, including acquiring ambulance vehicles, fuel and maintenance and other recurrent costs. In Step 2.1. the user reviews the costs of acquiring ambulance vehicles, while in Step 2.2. the user reviews if the neonatal transport equipment has been included under the facility equipment standards costed under the equipment & commodities modules.

Users should select an answer from the drop-down menu, which include Yes; No & Should be Included and Not Applicable. Select not applicable or leave blank if ambulance referral transport is to be funded out of other budget, such as the national emergency system.

When No & Should be Included is selected an Error Message will appear and the user can click "Go to the Equipment Tab" as shown below.

2.1. Review Cost of Ambulance Vehicles, based on unit prices from inputs and required numbers. Make sure ambulance prices include GPS
Note: costs will be 0 if facility typology not costed or there are no referrals by facility ambulance
These costs are estimated based on the ambulance vehicle costs (from inputs) and the facility requirements set above. Included as reminders in light gray

Ambulance Vehicle Acquisition Costs	Small	Medium	Large
Acquisition costs of ambulance vehicle	$80,000	$80,000	$80,000
Ambulance vehicle (unit prices)	$80,000	$80,000	$80,000
# of ambulance vehicles required by facility	1	1	1

2.2. Review if the ambulance neonatal equipment was included under the facility equipment requirements? Click Go to Tl

Did you include the equipment required for safe transport of newborns under the facility equipment standards?	No & Should be included
	ERROR. GO BACK TO EQUIPMENT

In Step 2.3. the user is asked to review the average cost of ambulance fuel and maintenance (per kilometer) which were entered in the inputs sheet as these costs are easily standardized across various settings. Other costs associated with ambulance transport, such as fees for community workers to accompany the baby and the mother, which are specific to each country and setting can be entered in Step 2.4. Here the user identifies the strategy/cost item and as noted in the tool enters the associated costs per referral trip.

2.3. Review cost inputs of fuel and maintenance for ambulance referrals transport

Note: These were entered under Step 7.2 under the General Inputs Tab and are shown here as a reminder

Ambulance fuel cost per kilometer	$0.080
Ambulance maintenance cost per kilometer	$0.040

2.4. Identify strategies to support ambulance transport referrals and enter other costs per referral trip

Include costs such as fees for community workers to accompany the baby and the mother & remember these are unit costs per referral trip

	Unit Cost per Referral Trip
Fees for community workers to accompany the baby and the mother	
Other	
Other	$1
Total Other Ambulance Referral Costs	**$1**

All the recurrent costs associated with facility ambulance transportation are then reviewed and revised as needed in Step 2.5. To facilitate sense-checking the results, there are notes in the costing tool about how those costs have been estimated and cells in light gray show the intermediate calculations.

2.5. Review recurrent Facility Ambulance costs (fuel & maintenance + Other) by facility typology and enter user-defined estimates if required

Review total recurrent costs of ambulance referrals (after applying cost loadings from inputs) and override modelled estimates if required

To facilitate this review, intermediate calculations for fuel & maintenance and other annual costs by typology are included in light gray cells.

* Fuel & maintenance costs are estimated based on number of referrals, kilometers per referral and fuel and maintenance costs entered above .

* Other annual ambulance referral costs are estimated based on the expected number of referrals & costs per referral trip entered above.

				Enter user-defined numbers here. Note they override modelled estimates		
Recurrent Annual Facility Ambulance Transport Costs	**Small**	**Medium**	**Large**	**Small**	**Medium**	**Large**
Mid Cost	$2,850	$3,762	$5,700			
High Cost	$3,135	$4,138	$6,270			
Very High Cost	$3,420	$4,514	$6,840			

Annual Ambulance Fuel & Maintenance Costs	Small	Medium	Large
Mid Cost	$2,700	$3,564	$5,400
High Cost	$2,970	$3,920	$5,940
Very High Cost	$3,240	$4,277	$6,480
Other Annual Ambulance Referral Costs	**Small**	**Medium**	**Large**
Mid Cost	$150	$198	$300
High Cost	$165	$218	$330
Very High Cost	$180	$238	$360

Finally, in Step 2.6. the user can review the costs to be used in the final estimates, which will correspond to modelled estimates, unless user-defined estimates have been entered in the dark blue cells.

2.6 Review Recurrent Annual Facility Ambulance Costs to be used in final estimates

Recurrent Annual Facility Ambulance Transport Costs	Small	Medium	Large
Mid Cost	$2,850	$3,762	$5,700
High Cost	$3,135	$4,138	$6,270
Very High Cost	$3,420	$4,514	$6,840

STEP 3 – ESTIMATE TRANSPORT COSTS OF REFERRALS USING ALTERNATIVE MEANS OF TRANSPORT

In this step the user estimates costs for those referrals using alternative means of transport, such as contracted local community drivers and vehicles. In Step 3.1. relevant costs are identified and entered. As noted in the tool, these are unit costs per referral.

Step 3.2. shows costs by facility size and location typologies. They are estimated based on the unit costs (adjusted by the cost loadings/mark-ups entered under inputs) along with the expected number of referrals using alternative means of transport. Modelled calculations can be replaced by user-defined inputs entered in the dark blue cells as shown below.

The final costs by typology are displayed in Step 3.3. and will represent modelled estimates unless the user has entered data to override them.

Note that transport equipment purchased by the facility to ensure safe transport for babies and their mothers, should be costed as part of the facility equipment standards under the Equipment & Commodities module.

STEP 3 - ESTIMATE AND REVIEW COSTS OF REFERRALS USING ALTERNATIVE MEANS OF TRANSPORT

3.1. Enter cost parameters for referrals requiring alternative means of transport

Remember to enter costs per referral

First enter unit costs per referral requiring Alternative Means of Transport	Unit Costs per Referral
Transport Vehicle Fees per trip	$10
Fees for community workers to accompany the mother and the baby	$10
Other	$10
Other	$10
Other	$10
Total	$50

3.2.Review annual costs of referrals using alternative means of transport by facility size and locatioon typology. Use dark blue cellss to override modelled estimates as required

Note that these costs are estimated based on the unit costs per referral adjusted by loadings/mark-ups and the expected number of referrals using other means of transport

	Annual Cost of Alternative Means of Referral Transport by Facility Typology			Enter user-defined numbers here. Note they override modelled estimates		
	Small	Medium	Large	Small	Medium	Large
Mid Cost	$1,900	$2,500	$3,750			
High Cost	$2,090	$2,750	$4,125			
Very High Cost	$2,280	$3,000	$4,500			

3.3. Review Recurrent Costs for alternative means of transport to be used in the final calculations

	Small	Medium	Large
Mid Cost	$1,900	$2,500	$3,750
High Cost	$2,090	$2,750	$4,125
Very High Cost	$2,280	$3,000	$4,500

STEP 4 – ESTIMATE COSTS OF COORDINATION & COMMUNICATION SYSTEMS AND REVIEW EQUIPMENT REQUIREMENTS

In this step, the user reviews and costs the requirements of a care coordination and communications system for robust referrals.

In Step 4.1. the focus is on reviewing if the equipment needs have been costed under the equipment & commodities modules, which has a dedicated step for the 'office' equipment requirements of referrals and other components of the model of care.

Similar to the probing question for ambulance equipment, the drop-down list of answers include Yes; No & Should be Included and Not Applicable. When No & Should be Included is selected an Error Message will appear and the user can click "Go to the Equipment Tab" as shown below.

4.1. Identify Equipment Requirements

Review if the equipment requirements such as phones & computers were included under the equipment & commod

If equipment is funded separately as part of the Emergency Services budget, select Not Applicable

Did you include equipment requirements, such as computers and phones, under 'office and communication equipment' standards in the previous module?	No & Should be included
	ERROR. GO BACK TO EQUIPMENT

GO TO THE EQUIPMENT TAB TO REVIEW THE INCLUSION OF THE REQUIRED EQUIPMENT

In Step 4.2. the user identifies and include any additional costs associated with care coordination and communication systems for referrals, which might include for example expenses related to internet, mobile or land phone for liaising with other facilities. Remember to enter total facility costs for each facility size typology. In Step 4.3. the user reviews estimated costs by facility typology, which have been adjusted by cost loadings/mark-ups entered under inputs and can override those estimates in the dark blue cells. The final estimates are then display in Step 4.4.

4.2. Identify and include additional recurrent costs associated with communications and coordination requirements for referrals, not costed elsewhere
For example, you can include here expenses related to internet, mobile or landphone for communication exchanges with other facilities
You can also include here other costs such as those associated with supporting in-referrals from lower-level facilities & the community, such as mentori

Recurrent costs - Coordination & Communications Systems for Referrals	Other Referral Annual Recurrent Costs		
	Small	Medium	
Facility internet and phone bills	$1,000	$1,000	
Total Communication & Coordination Recurrent Costs	$1,000	$1,000	$0

4.3. Review additional recurrent costs for referrals by size and location typologies and override modelled estimates as required

	Other Referral Annual Recurrent Costs			Enter user-defined numbers here. Note they override modelled estimates		
	Small	Medium		Small	Medium	
Mid Cost	$1,000	$1,000	$0			
High Cost	$1,100	$1,100	$0			
Very High Cost	$1,200	$1,200	$0			

4.4. Review additional recurrent referral costs to be used in Step 4 to estimate recurrent referrals costs

	Small	Medium	
Mid Cost	$1,000	$1,000	$0
High Cost	$1,100	$1,100	$0
Very High Cost	$1,200	$1,200	$0

STEP 5 – REVIEW FACILITY RECURRENT COSTS FOR TRANSPORT, COORDINATION & COMMUNICATION

To facilitate sense-checking the results, Step 5 shows the total of facility referrals recurrent costs (excluding human resources). They are the sum of transport costs for all referrals and coordination and communications systems that have been costed in the previous steps.

Review recurrent costs for facility referrals, excluding human resources. They include transport costs (ambulance & other) as well as communications and coordi

Referral Recurrent Costs (Transport, Communication & Coordination)*	Small	Medium	Large
Mid Cost	$4,850	$6,363	$9,552
High Cost	$5,335	$6,999	$10,507
Very High Cost	$5,820	$7,636	$11,462

STEP 6 – REVIEW HUMAN RESOURCE REQUIREMENTS

In this step the user reviews if facility human resource standards set and costed under the human resources module have included any requirements of the referral system. To ensure key requirements are not overlooked, as shown in the costing tool there are probing questions for:

- ✓ Staff ratios: to ensure they reflect workloads related to referrals, such as liaising with other facilities, filling out referral mothers and accompanying newborns and mothers during transport as required (Step 6.1)

- ✓ Additional human resources for referrals, such as paramedics to accompany the baby and her mother during transport, trained ambulance drivers and additional call centre staff (Step 6.2)

- ✓ Training requirements related to referrals (Step 6.3)

Similar to previous steps, the user selects from drop-down lists (Yes; No & Should be Included and Not Applicable). When No & Should be Included is selected an Error Message will appear and the user can click "Go to the HR Tab", as shown below.

6.1. Identify if staff ratios have taken into consideration workloads related to referrals, such as liaising with other facilities, filling out referral forms and accompanying newborns and mothers during transport as requ

		User Notes
Did you account for the time needed by facility health staff to support referrals when setting facility staff standards under Human Resources? Select Yes/No	No	
	ERROR. GO BACK TO HUMAN RESOURCES	

6.2. Identify if additional human resources for referrals such as drivers or call center staff have been included as part of facility human resource standards. Click Go to The HR Tab if required
In instances where those human resources are not required, the answer should be "No, but other arrangements in place".

First, review human resource standards for transport

		User Notes
Did you include transport staff, such as trained ambulance drivers when setting facility staff standards under Human Resources? ?	No & Should be included	
	ERROR. GO BACK TO HUMAN RESOURCES	

Second, review human resource standards for communications and care coordination. Click Go to The HR Tab if required

		User Notes
Did you include coordination/communications staff, such as call centre officers, when setting facility staff standards under Human Resources?	No & Should be included	
	ERROR. GO BACK TO HUMAN RESOURCES	

6.3. Identify if referral training for facility, transport and communications staff has been included as part of human development strategies. Click Go to The HR Tab (training) if required

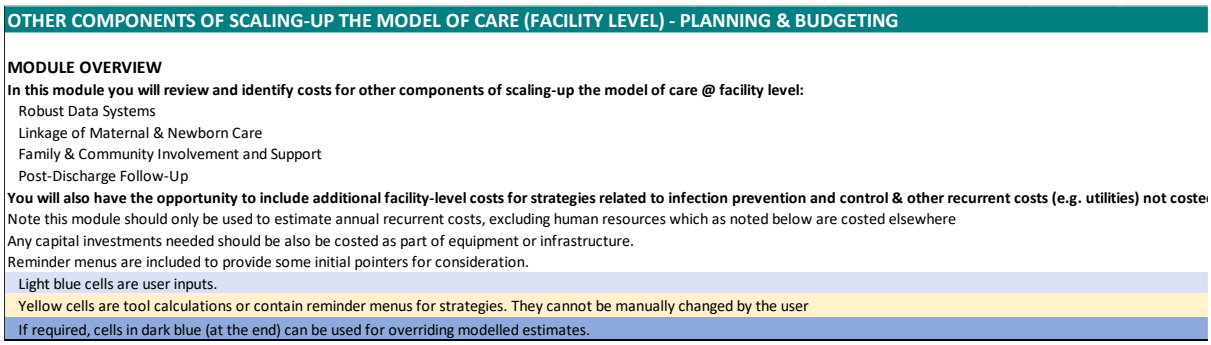
		User Notes
Did you include under mandatory in-service trainings any requirements related to referrals, communications and care coordination?	No & Should be included	
	ERROR. GO BACK TO HUMAN RESOURCES	

OTHER COMPONENTS (FACILITY LEVEL) - PLANNING & BUDGETING

In this module, the user identifies strategies at facility level and estimates the annual costs of strategies relevant to Robust Data Systems Linkage of Maternal & Newborn Care Family & Community Involvement and Support Post-Discharge Follow-Up. Other facility-level costs, such as those related to infection, prevention & control can also be included here.

To ensure that strategies relevant to each component do not fall through the cracks and are given consideration during planning & budgeting for the scale-up, a reminder menu with potential strategies relevant to each component is included here. This menu is not intended as a template, but rather as a reminder of issues that might deserve consideration and targeting by specific system strategies.

As a first step it is however important to review if the facility standards for equipment and human resources have been set with due consideration to all the components of the model of care. So, this module starts with those probing questions. And, in some instances, you might find that many of the relevant facility strategies and costs have indeed been costed in the previous modules. Nevertheless, it is still important to go through all the steps to ensure that strategies associated with these components have been given consideration and included in the tool costings.


OTHER COMPONENTS OF SCALING-UP THE MODEL OF CARE (FACILITY LEVEL) - PLANNING & BUDGETING

MODULE OVERVIEW

In this module you will review and identify costs for other components of scaling-up the model of care @ facility level:

- Robust Data Systems
- Linkage of Maternal & Newborn Care
- Family & Community Involvement and Support
- Post-Discharge Follow-Up

You will also have the opportunity to include additional facility-level costs for strategies related to infection prevention and control & other recurrent costs (e.g. utilities) not coste

Note this module should only be used to estimate annual recurrent costs, excluding human resources which as noted below are costed elsewhere

Any capital investments needed should be also be costed as part of equipment or infrastructure.

Reminder menus are included to provide some initial pointers for consideration.

Light blue cells are user inputs.

Yellow cells are tool calculations or contain reminder menus for strategies. They cannot be manually changed by the user

If required, cells in dark blue (at the end) can be used for overriding modelled estimates.

STEP 1 – REVIEW EQUIPMENT REQUIREMENTS

In this step the user reviews whether or not the equipment requirements associated with each of the listed components of the model of care for small and sick newborn has been included when setting the facility equipment and furniture standards. Users should select an answer from the drop-down menu, which include:

Yes: for cases where the relevant equipment has already been included.

No & Should be Included: for those events where there is specific equipment needs that should have been included, such as computer and printer for data systems, has been omitted.

Not Applicable: for cases in which no additional specific equipment needs to be financed out of the scale-up budget This could happen for example because the individual component does not require specific equipment, or because the equipment is funded out of a different budget.

STEP 1 - REVIEW IF FACILITY STANDARDS FOR EQUIPMENT INCLUDE ASSOCIATED REQUIEMENTS FOR OTHER MODEL OF CARE COMPONENTS

Review if you included any additional equipment requirements for other facility components of small and sick newborn care. **Click Go to The Equipment Tab**
This will help you ensure that additional equipment requirements, such as computers for robust data systems are included and costed under facility equipmen
Note that we have also included infection prevention & control here to ensure any equipment requirements such as personal protective equipment have bee
Select answer for each component listed below and add any relevant notes

Other Facility-Level Components of Small and Sick Newborn Care	Did you include additional equipment requirements related to this component?	User Notes
Robust data systems	No & Should be included	
Linkage of maternal and newborn care	Not Applicable	
Family & community involvement and support	Not Applicable	
Post-discharge follow-up at facility and at home	No & Should be included	
Infection Prevention & Control	Yes	

If you have selected the second option is selected, an error message will appear, and you can go back to the Equipment Module by clicking Go To the equipment tab to review facility standards.

STEP 2 – REVIEW HUMAN RESOURCE REQUIREMENTS

Here the user first reviews if the facility human resource standards include any staff requirements associated with each of the listed components. The objective is to ensure that first, as required, any additional staff, such as data clerks for robust data systems are included. Second, that the facility staff ratios reflect the expected workload associated with all components of the model of care for small and sick newborn care, including for example tasks associated with delivering, or supporting the delivery, of post-discharge follow-up.

This step also includes a review of mandatory in-service training packages for facility staff. Since various components of the model of care involve specific knowledge or skills, it is also important to ensure that these requirements are included in facility training packages costed under the human resources module. Similar to equipment, the following options are provided by the drop-down menu: Yes; No & Should be Included; Not Applicable. And when the second option is chosen an error message will also appear.

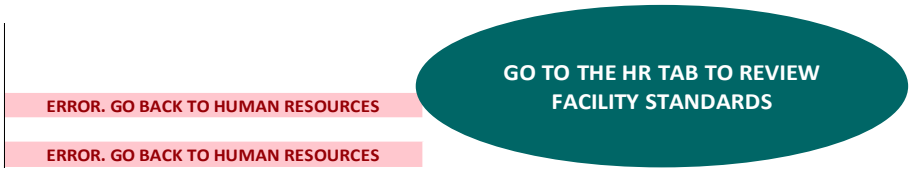
STEP 2 - REVIEW IF FACILITY STANDARDS FOR HUMAN RESOURCES INCLUDE ASSOCIATED REQUIEMENTS FOR OTHER MODEL OF CARE COMPONENTS

2.1. Review if you included any **staff requirements** associated with other facility components of small and sick newborn care. **Click Go to The HR Tab if requ**
This will help you ensure that:
a) additional staff, such as data clerks for robust data systems are included & costed
b) facility staff ratios are adequate for the expected workload, which should include additional tasks related to all of these components
Note that we have also included infection prevention & control here to ensure users consider any staff requirements, such as housekeepers/cleaners & traini
Select answer for each component listed below and add any relevant notes.

Other Facility-Level Components of Small and Sick Newborn Care	Did you include staff requirements related to this component?	User Notes
Robust data systems	Yes	
Linkage of maternal and newborn care	Yes	
Family & community involvement and support	No & Should be included	
Post-discharge follow-up at facility and at home	No & Should be included	
Infection Prevention & Control	Yes	

2.2. Review if you included any additional **training requirements** for other facility components of small and sick newborn care. **Click Go to The HR Tab if req**
Select answer for each component listed below and add any relevant notes

Other Facility-Level Components of Small and Sick Newborn Care	Did you include training requirements related to this component?	User Notes
Robust data systems	No & Should be included	
Linkage of maternal and newborn care	Yes	
Family & community involvement and support	Yes	
Post-discharge follow-up at facility and at home	No & Should be included	
Infection Prevention & Control	No & Should be included	



STEP 3 – IDENTIFY ADDITIONAL STRATEGIES & COSTS

For the additional components of the model of care listed under this module there is a wide range of potential strategies with nuances in their design and implementation that stakeholders need to consider during the co-design process to ensure they are fit for purpose in the local context.

So instead of attempting to standardize their system parameters the tool provides reminder notes about potential strategies for consideration and asks users to identify the required strategies and enter the expected costs by facility size typology. As noted in the costing tool, these reminder notes are just pointers to prompt discussions in country and are shown in light grey within the yellow cells.

We briefly discuss below those components and note that although not listed as one of the components of the model of care, we have also included here infection prevention & control strategies to ensure these costs are accounted for.

Robust data systems

Robust data systems play a crucial role in enhancing the quality of care for small and sick newborns. These systems are designed to efficiently collect, manage, and analyze data to support evidence-based decision-making and improve overall healthcare outcomes. They not only support day-to-day clinical operations and facility quality improvement activities, but also contribute to broader goals such as policy development.

A wide range of strategies, ranging from perinatal death reviews to ensuring availability of case record sheets & registries might be applicable across different settings and should be entered along with their associated costs in Step 3.1

3.1. Identify Robust Data Systems strategies & estimate any additional costs at facility level

	Additional annual facility costs required				
Robust Data Systems	**Small**	**Medium**	**Large**	**User Notes**	Reminder Notes
Consumables & other office-related costs					**Consider strategies and costs related to:** *Ensuring sufficient numbers of printed case record sheets & registries * Providing an adequate supply of office consumables such as paper & print toner *Regular audits & quality assurance *Perinatal death reviews * Regional meetings to improve data collection, analysis and use of data * Developing and implementing facility protocols and standard operating procedures *Community engagement and feedback.
Printing of case record sheets & registries					
Office equipment consumables such as paper & print toner					
Perinatal death reviews					
Team Reviews of SNCU data					
Regional meetings with other facilities					
Supporting a QoC champion in each facility					
Developing and implementation of facility protocols					
Family's feedback on services					
Annual Additional Costs	**$0**	**$0**	**$0**		

Linkage of maternal and newborn care

In Step 3.2. the user enters any strategies related to linkage of maternal and newborn care with focus on Level 2 facilities, which might involve strategies to ensure multidisciplinary team collaborations and zero separation during in-facility care. Some of these costs would have been accounted for under previous modules. For example, minimum space requirements per bed set under infrastructure should take into consideration the zero-separation policy. Likewise, facility equipment should include those devices required to provide care for the mother (e.g. adult weighing scale & adult stethoscope). So, only additional costs should be entered here.

3.2. Identify Linkage of Maternal & Newborn Care strategies & estimate any additional costs at facility level

	Additional annual facility costs required				Reminder Notes
Linkage of Maternal & Newborn Care	**Small**	**Medium**	**Large**	**User Notes**	
Facility space inc. requirements for zero separation of mother and baby				Included under infrastructure requirements	**Consider for example any additional costs for Level II facilities related to:** * Zero separation policy and *Mechanisms to foster collaboration among health care profesionals, including obstetricians, midwives, neonatologists and neonatal nurses.
Mother's education to ensure zero separation policy					
Annual Additional Costs	**$0**	**$0**	**$0**		

Family & community involvement and support

Involving family members in the care of small and sick newborns has important benefits, including preparing the family to care for the baby after discharge from the facility. Although some of the strategies might have been costed under previous modules, additional strategies and costs to consider in Step 3.3. might include the design and delivery of behavioral change interventions and information, education and communication campaigns that are culturally sensitive, provided in the local language, and tailored to the specific context of each community.

3.3. Identify Family & Community Involvement and Support strategies & estimate any additional costs at facility level

	Additional annual facility costs required				
Family & Community Involvement and Support	**Small**	**Medium**	**Large**	**User Notes**	Reminder Notes
Producing information, education and communications material in the local language					**Consider strategies related to:** *Compassionate and respectful care *Mother/family participation in decision making and care provision **Additional costs might include those associated with:** *Information, education & communication campaigns provided in the local language and tailored to each community *Behavioural change interventions *Developing and implementing facility protocols & standard operating procedures.
Developing and implementing facility protocols and SoP					
Linking families with community health workers					
Annual Additional Costs	**$0**	**$0**	**$0**		

Post-discharge follow-up

Continued care at home and facility follow-up as an outpatient are crucial to monitor newborns, promote recovery and prevent complications or readmissions and some strategies, such as training of health workers, would have been costed under previous modules.

However additional strategies and costs to consider for inclusion in Step 3.4. might relate for example to deploying community health workers to conduct post-discharge visits and linking them to families before the baby is discharged; operating costs of systems for appointment reminders including SMS and phone; and providing families with financial support for transport to attend appointments. When considering strategies and costs for inclusion, it is important to assess if separate funding, for example for community health workers, is available.

3.4. Identify Post-Discharge Follow-Up strategies & estimate any additional costs at facility level

	Additional annual facility costs required				
Post-Discharge Follow-Up	**Small**	**Medium**	**Large**	**User Notes**	Reminder Notes
Social and behavioral change interventions, inc. patient education					**Consider strategies and costs related to:** *Deploying community health workers to conduct post-discharge follow-up visits *Appointment scheduling and reminders systems *Patient education about the importance of post-discharge follow-up *Addressing transport barriers, including financial support for transport to attend post-discharge follow-up appointments
Transport vouchers for families to visit health facility for follow-up					
Developing and disseminating protocols for discharge & post-discharge plans					
Home visits by trained community health workers					
SMS/Phone reminder system					
Annual Additional Costs	**$0**	**$0**	**$0**		

Infection Prevention & control

Small and sick newborns are at higher risk of acquiring hospital-acquired infections. Strict cleaning protocols (weekly, daily and monthly); microbiological surveillance; staff immunization and regular check-ups are some of the strategies that need to be given due consideration during discussions in country.

Although some requirements such as those related to infrastructure (e.g., availability of a water tank to ensure 24/7 availability of water) or human resources (e.g., staff training in infection prevention and control protocols) have been costed under previous modules, any additional costs can be accounted for in Step 3.5.

3.5. Identify Infection prevention & control inc. WASH strategies & estimate any additional costs at facility level

	Additional annual facility costs required				
Infection prevention & control inc. WASH	**Small**	**Medium**	**Large**	**User Notes**	**Reminder Notes**
Cleaning & linen management protocols inc. daily, weekly and monthly routines					**Consider strategies & costs related to: *U**se of personal protective equipment *Cleaning & linen management protocols (e.g. availability of consumables) * Waste management *Microbiological surveillance *Fire safety *WASH.
Availability of cleaning & linen management consumables				Included in training?	
Waste management protocols				Not included here	
Microbiological surveillance				In national protocols	
Annual Additional Costs	**$0**	**$0**	**$0**		

STEP 4 – REVIEW & VALIDATE ANNUAL ADDITIONAL COSTS BY TYPOLOGY

Similar to other modules, here the user reviews the estimated facility costs for strategies related to other components of the model of small and sick newborn care and can revise totals, if required.

In Step 4.1 the user first reviews the annual additional costs of those strategies costed above. They are shown for each of the facility size typologies included.

Step 4.2 shows costs adjusted by the cost loading/mark-up factors entered in General Inputs to reflect differences in costs across facility cost/location typologies. If required, the user can revise those estimates in the dark-blue cells.

Finally, in Step 4.3 the user reviews the estimates that will be used in the final results, which correspond to the modeled estimates for each facility typology included, unless they have been overridden by the user in the dark-blue cells (not shown below).

STEP 4 - REVIEW & VALIDATE ANNUAL ADDITIONAL COSTS FOR OTHER COMPONENTS OF THE MODEL OF CARE (BY TYPOLOGY)

4.1. Review Additional Facility Annual Costs to deliver Small and Sick Newborn Care not included elsewhere

Other Components - Annual Costs	**Small**	**Medium**	**Large**
Robust Data Systems	$0	$0	$0
Linkage of Maternal & Newborn Care	$0	$0	$0
Family & Community Involvement and Support	$0	$0	$0
Post-Discharge Follow-Up	$0	$0	$0
Infection prevention & control inc. WASH	$0	$0	$0
Other	$0	$0	$0
Total Other Model of Care Components	**$0**	**$0**	**$0**

4.2. Review Other Components - Annual Costs by Facility Size and Location Typology (after applying cost loadings from inputs)
This table uses cost loadings to estimate costs by facility location/cost typology
As required, estimates can be modified in the dark blue cells.

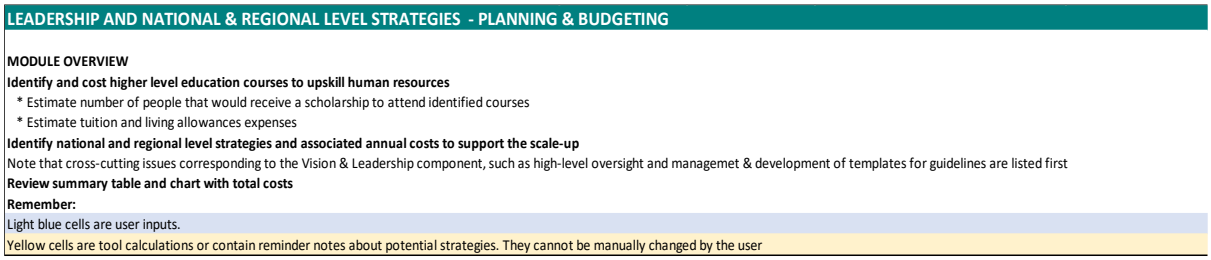
				Enter user-defined costs here. Note they override modelled estimates		
Other Components - Annual Costs	**Small**	**Medium**	**Large**	**Small**	**Medium**	**Large**
Mid Cost	$0	$0	$0			
High Cost	$0	$0	$0			
Very High Cost	$0	$0	$0			

4.3. Review costs that will be used for final results.
This table shows the costs to be used in the final estimates.

Other Components - Annual Costs	**Small**	**Medium**	**Large**
Mid Cost	$0	$0	$0
High Cost	$0	$0	$0
Very High Cost	$0	$0	$0

LEADERSHIP AND NATIONAL & REGIONAL LEVEL STRATEGIES - PLANNING & BUDGETING

The success of the scale-up relies on vision, leadership and political commitment at all levels of government as well as a national scale-up plan that is adequately funded. So, when planning & budgeting for the scale-up, it is important not to simply assume that current national and regional staffing levels have 'spare capacity' to manage and provide oversight of the scale-up, or to assume that existing systems are adequate to support the implementation of infrastructure, equipment, human resources, and other components of small and sick newborn care. At the very least, stakeholders should discuss what those national and regional systems and strategies look like and what they entail. To facilitate some of these discussions, this module is organized as follows:


LEADERSHIP AND NATIONAL & REGIONAL LEVEL STRATEGIES - PLANNING & BUDGETING

MODULE OVERVIEW

Identify and cost higher level education courses to upskill human resources

* Estimate number of people that would receive a scholarship to attend identified courses
* Estimate tuition and living allowances expenses

Identify national and regional level strategies and associated annual costs to support the scale-up

Note that cross-cutting issues corresponding to the Vision & Leadership component, such as high-level oversight and managemet & development of templates for guidelines are listed first

Review summary table and chart with total costs

Remember:

Light blue cells are user inputs.

Yellow cells are tool calculations or contain reminder notes about potential strategies. They cannot be manually changed by the user

STEP 1 – IDENTIFY & COST THE DELIVERY OF HIGHER EDUCATION COURSES TO UPSKILL HUMAN RESOURCES

As noted in the costing tool, in this step the user costs higher education courses to be funded against the scale-up budget:

First, the average number of trainees funded per year should be entered. If different annual intakes are expected, enter the average number, and make the corresponding comment in the user note.

Second, enter the estimated annual program tuition fees per person.

Third, enter other costs such as scholarship living allowances that will be provided to staff enrolling in the program.

Note that other costs associated with higher education courses, such as the resources required for a national review of existing curriculum can be costed under the human resource strategies below.

Step 1. Identify and cost the delivery of higher education courses to upskill human resources

Include here any higher education courses to be funded against the scale-up budget
First, enter the number of trainees funded per year
Second, enter the tuition fees per person per year
Third, enter other costs such as scholrship living allowances.

		Costs per trainee per year funded against the scale-up		
Higher Education Courses	Number of funded trainees per year	Tuition Fees per person per year	Scholarship Living Allowances & Additional Costs per person per year	Estimated Annual Cost - All Trainees
Advanced Diploma for Nurses - 1 year	10	$824	$5,642	$64,660
Masters of Science in neonatalogoy - 2 years	10	$1,529	$5,642	$71,710
Postgraduate Diploma in Neonatology - 1 year	10	$941	$25,917	$268,580
				$0
				$0
				$0
Annual Costs of Higher Education Courses				**$404,950**

STEP 2 – IDENTIFY & COST NATIONAL AND REGIONAL LEVEL STRATEGIES

In this step the user enters the costs associated with national and regional level strategies supporting the scale-up, including the development and dissemination of the national plan.

In terms of other high-level strategies, we note that the degree of decentralization in the country will dictate which management and system strategies would be most appropriate to implement at national or regional levels. So, both sets of strategies are identified and costed in this step. You just need to remember that if it is a regional or provincial level strategy, countrywide costs should be entered here.

For example, if you have estimated that 10 regions would be covered by the scale-up and that on average each would spend $1,000 supporting the dissemination and adoption of facility guidelines and protocols, the amount to be entered is $10,000 (10 regions x $1,000).

To facilitate discussions and ensure relevant strategies for all components of the model of small and sick newborn care are considered, the tool includes the following categories:

- ✓ **The national plan and high-level oversight & management strategies**, which can be used to include any additional costs associated with the development and dissemination of the national plan as well as additional staff requirements to provide oversight of the scale-up.

- ✓ **Templates for guidelines, protocols and standard operating procedures**, which can include templates relevant to all component of the model of care, as well as additional ones such as those related to evidence-base practice (clinical) or infection prevention and control.

- ✓ **Individual components of care**: We have included separate lines for those components that have independent sheets for planning and budgeting, that is, infrastructure, equipment & commodities, human resources and referrals. We also added separate lines for robust data systems, as there might be important start-up costs associated with support for the development of facility data systems including the use of data for continuously improving quality of care. National and regional level strategies associated with other components can be costed under "Other Components & Strategies"

As noted in the costing tool, the user should:

First, enter national and regional level strategies required to support the scale-up and facilities delivering good quality of care.

Second, enter startup costs including any capital investments that need to be incurred in year one of the scale-up

Third, enter annual costs for subsequent years

Templates for QoC guidelines, protocols and SoP	Start up Costs (Year One)	Annual Costs in Subsequent Years
Infrastructure, Equipment, Consumables & HR		
Evidence-base practice (clinical)		
Evidence-base practice (family centered care)		
Infection and prevention control		
Admission and discharge criteria & protocols, inc. post-discharge follow-up		
Other	$120,000	
Templates for QoC guidelines, protocols and SoP costs	**$120,000**	**$0**

For each category, there are reminder notes about potential issues for consideration, such as commissioning strategies for building and rehabilitating facilities and purchasing equipment. See the example below for higher level strategies related to **Robust Data Systems**.

Reminder notes
Consider for example strategies needed to support data management such as developing the national minimum dataset, as well as annual implementation reviews and a 3 or 5 year evaluation of the scale-up. Also consider any strategies required to support implementation of perinatal death reviews as required.

STEP 3 – REVIEW FINAL COSTS

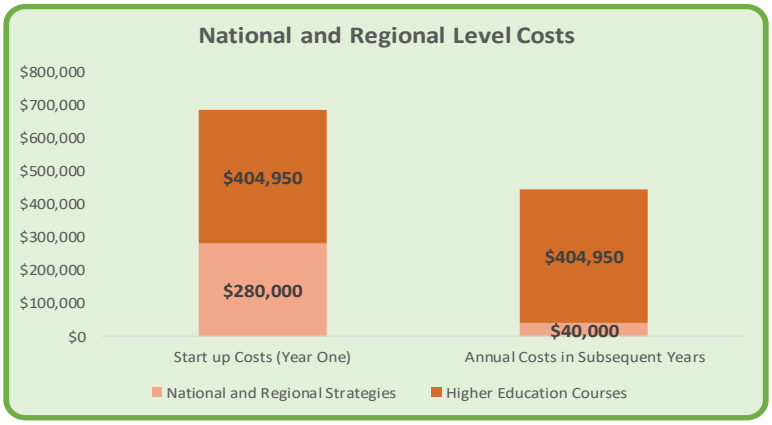
Here the user reviews the total cost of national and regional level strategies to support the scale-up, including costs estimated under Steps 1 & 2 above. A summary cost chart is also included in this module, as well as a note reminding users of the base year used for costings. Note that these costs are not allocated to individual facilities and so are not included in the Facility Typology Analytics module.

Step 3. Review cost of national and regional level strategies, including higher education courses

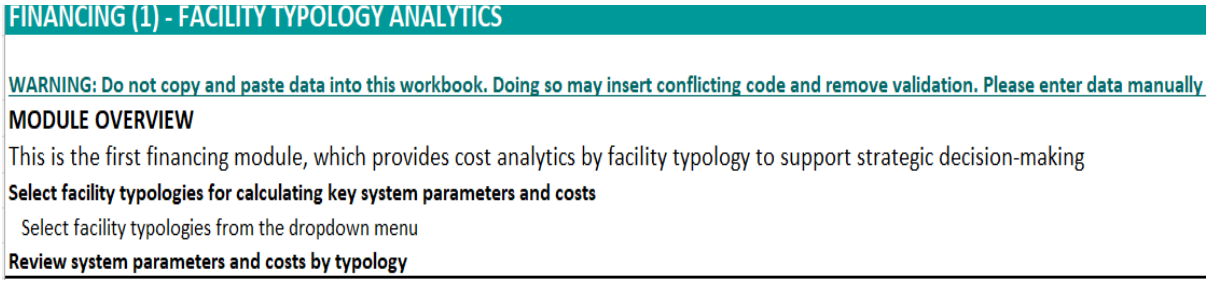
This table shows total national and regional level costs to support the scale-up and so are not included in facility typology cost analytics

All financial figures are in USD - Base Year (2022)

National & Regional Level Costs	Start up Costs (Year One)	Annual Costs in Subsequent Years
National Plan & high level oversight and management	$0	$0
Templates for guidelines, protocols and SoP	$120,000	$0
Infrastructure	$20,000	$0
Equipment & Commodities	$40,000	$0
Human Resources	$0	$0
Referral Systems	$0	$0
Robust Data Systems	$100,000	$40,000
Other Components & Strategies	$0	$0
National and Regional Strategies	**$280,000**	**$40,000**
Higher Education Courses	**$404,950**	**$404,950**
Total Annual National and Regional Costs	**$684,950**	**$444,950**



FINANCING (1) FACILITY TYPOLOGY ANALYTICS



In the planning & budgeting modules you have set the country facility standards and estimated how much it would cost to set up facilities that deliver good quality of care and how much it would cost to implement the supporting national and regional level strategies.

If you have taken advantage of the large number of facility typologies that can be costed simultaneously, in this module you will be able to examine variations in costs across facilities in the country by size; location; construction and equipment needs; and staff recruitment challenges.

Remember that multiple scenarios can be drawn from the different mix and match of typologies and different scenarios will be useful to highlight different strategic issues, as can be seen in the reports we produced for Zambia and Ghana.

STEP 1 – SELECT THE MIX AND MATCH OF FACILITY TYPOLOGIES

In this step the user selects the typologies for which total costs will be displayed. Start by getting familiar with the mix-and-match selection of typologies and how results change. Remember that given the multiple combinations available, **a wide range of facility estimates** can be produced.

For example, just the mix and match of three typologies (size, cost and equipment needs) can produce 27 alternative cost estimates, ranging from the lowest estimate for a small facility in a mid-cost location and with limited needs of equipment to a large facility in a very high-cost location and with major needs of equipment. So, take the time to explore how costs change as different typologies change and consider the following issues:

First, examine which combinations make sense in the local context. For example, if there is a strong correlation between facility location and recruitment challenges, it is advisable to combine mid-cost with standard recruitment, high cost with hard-to-recruit areas and very high cost with most challenging to recruit areas.

Second, to understand what impact a particular variable (e.g., facility size) has on costs, all other things must be equal. So, for example, if you have included all typologies in this exercise, start by selecting the same typology categories for cost/location, construction type, equipment needs and recruitment challenges. Then choose the three facility size typologies (small, medium & large) as shown below. Finally, check results in the following step and notice how costs change.

Facility Typology	Facility Type 1	Facility Type 2	Facility Type 3
SIZE	Small	Medium	Large
COST/LOCATION	High Cost	High Cost	High Cost
CONSTRUCTION TYPE	New Construction	New Construction	New Construction
EQUIPMENT NEEDS	Major need	Major need	Major need
RECRUITMENT CHALLENGES	Standard area	Standard area	Standard area

Once you are familiar with the typologies and range of costs, you can start exploring the mix-and-match of typologies that would be most useful to aid planning & budgeting discussions.

It is also important that as noted in the tool, you select from the dropdown menu, which shows only the typologies that you have included in the exercise. If you copy/paste into those cells, and inadvertently use a typology that has been excluded, all the relevant results will be zero.

Once you are satisfied with the facilities typified by the mix and match of typologies, you can provide a user-defined name for that 'typical' facility in the light-blue cells in Step 1.2.

Note that this is the name that will be used for displaying charts, so try to keep it short. If you leave it blank the names will appear as Facility Type 1, 2 & 3.

STEP 1. SELECT FACILITY TYPOLOGIES FOR DISPLAYING TOTAL COSTS

1.1. Select a costed typology by clicking on each cell & choose from the dropdown menu.

Remember do not copy/paste cut/paste into these cells. Only choose from the dropdown menu

Facility Typology	Facility Type 1	Facility Type 2	Facility Type 3
SIZE	Small	Medium	Large
COST/LOCATION	High Cost	High Cost	High Cost
CONSTRUCTION TYPE	New Construction	New Construction	New Construction
EQUIPMENT NEEDS	Major need	Major need	Major need
RECRUITMENT CHALLENGES	Standard area	Standard area	Standard area

1.2. Enter a short name for the 'typical' facility.

This name will be used for displaying charts, so try to keep it short

	Facility Type 1	Facility Type 2	Facility Type 3
Typical Facility Name/Description:	**12-bed**	**18-bed**	**36-bed**

STEP 2 – REVIEW FACILITY COST ANALYTICS

Here you can review the summary of facility costs displayed by the typologies chosen in the previous step. If some results are zero, you can check if the item was not costed, as it is the case below with Main Equipment – Buffer Stocks. Also check that those typologies in Step 1.1. were selected from the dropdown menu.

STEP 2. REVIEW FACILITY COST ANALYTICS

Note: If column values are 0, the items or the typology has not been costed.

Go back to the previous step and make sure you choose a typology from the dropdown menu

FACILITY COSTS (1)

All financial figures are in USD - Base Year (2024)

Service Parameter/Cost	12-bed	18-bed	36-bed
Expected annual number of admissions (#)	579	861	1723
Number of beds required (#)	12	18	36
Total floor space (Sq. Mts.)	326	474	824
FACILITY CAPITAL COSTS	***$546,612***	***$705,129***	***$1,111,990***
Infrastructure	$195,360	$284,460	$494,340
Equipment	$271,252	$340,669	$537,650
Main Equipment - Acquisition	$182,750	$231,997	$362,829
Main Equipment - Distribution	$46,412	$58,433	$97,682
Main Equipment - Buffer Stocks	$21,930	$27,840	$43,539
Furniture & other equipment	$20,160	$22,400	$33,600
Other Capital	$80,000	$80,000	$80,000
Ambulance	$80,000	$80,000	$80,000
Other (2)	$0	$0	$0
FACILITY RECURRENT COSTS	***$230,948***	***$343,675***	***$561,785***
Human Resources	$144,871	$232,322	$369,869
Salaries	$141,923	$228,147	$363,220
Development & Incentives (3)	$2,948	$4,175	$6,650
Equipment	$72,711	$91,544	$153,036
Regular Maintenance (4)	$18,565	$23,373	$39,073
Consumables & Renewables	$54,147	$68,171	$113,963
Other Recurrent	$13,365	$19,809	$38,880
Drugs & Medical Supplies	$5,095	$7,577	$15,162
Referral Systems	$6,316	$9,387	$18,774
Other Model of Care Components (5)	$1,954	$2,845	$4,943
FACILITY CAPITAL COSTS ANALYSIS			
Capital Cost per Bed	$45,551	$39,174	$30,889
% Share	100%	100%	100%
Infrastructure	36%	40%	44%
Equipment	50%	48%	48%
Other Capital	15%	11%	7%
FACILITY RECURRENT COSTS ANALYSIS			
Annual Cost per Bed	$19,246	$19,093	$15,605
Annual Cost per Newborn Admission	$399	$399	$326
% Share	100%	100%	100%
Human Resources	63%	68%	66%
Equipment	31%	27%	27%
Other Recurrent	6%	6%	7%

Notes:

(1) Table does not include costs of national & regional strategies

(2) Other include capital costs (i.e. housing) to recruit and retain staff in hard-to-recruit and most-challenging recruitment typologies

(3) Development & Incentives includes human development strategies such as supervision/coaching & mandatory in-service training and additional recruitment incentives not costed as part of staff salaries and allowances

(4) Equipment regular maintenance includes spare parts and maintenance strategies, except buffer stocks

(5) Recurrent costs for infrastructure maintenance and model of care components other than human resources, equipment & commodities and referrals)

Of note:

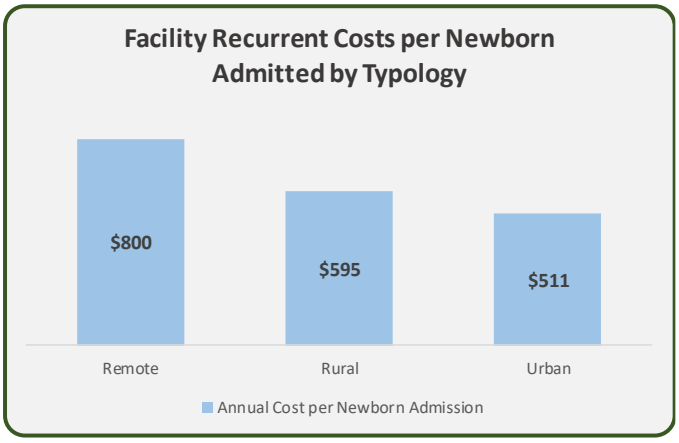
- ✓ Remember that **only facility level costs** are displayed in this table. If you have costed national and regional level strategies to support the scale-up, those costs are not displayed in this table as they do not vary with facility typology.
- ✓ At the top of the table there is a comment indicating the **currency and base year** used for costings, which were entered in General Inputs.

- ✓ This table displays system parameters and costs **estimated in the planning & budgeting modules**. There are notes at the bottom of the table to explain a handful of costs that combine smaller items.
- ✓ If you have followed the step-by-step approach of each module sequentially, you will be able to easily **trace back how these values were estimated**. For example, salaries show the total estimates calculated in the Human Resources planning & budgeting module, which were reviewed in Step 1.4. of that worksheet.
- ✓ The first section of the table shows the **service parameters** that were modeled under Infrastructure.
- ✓ The second section (**Facility Capital Costs**) shows capital costs: Infrastructure, Equipment and Other.
    - They represent the capital investments needed in the year a facility is set up to operate as per the country standards and guidelines.
    - Remember that Main Equipment refers to the facility equipment standards which are mostly focused on the devices required to deliver small and sick newborn care and to ensure the safe transport of babies and their mothers. Office and communications equipment requirements for components of care such as data and referral systems are costed under Furniture & Other Equipment.
    - Ambulance includes the cost of purchasing the ambulance vehicle.
    - As noted in the costing tool, the last row under infrastructure (other) represents capital investments such as housing or vehicles included under strategies to attract human resources to work in hard-to-recruit or most-challenging to recruit areas.
- ✓ The third section (**Facility Recurrent Costs**) displays recurrent costs Human resources, equipment & other).
    - They represent the annual costs of operating a facility in compliance with country standards and guidelines.
- ✓ When looking at the total capital and recurrent costs, it would be important to **benchmark those estimates against available data**, which can help aid the discussions about fiscal space. For example:
    - How does the cost of setting up a fully operational facility compare against national investments in relevant programs such as facility infrastructure rehabilitation, or equipment upgrades?
    - How do estimated recurrent costs compare against current recurrent budgets?
- ✓ The fourth section (**Facility Capital Costs analysis**) provides costs per bed and the percentage share of infrastructure, equipment, and other capital.
- ✓ The fifth section (**Facility Recurrent Costs analysis**) shows annual recurrent costs per bed and per newborn admission and their distribution.
- ✓ Some issues to examine when looking specifically at the Capital and Recurrent cost analysis sections include:
    - To what extent are **costs per bed** lower (higher) for larger facilities, suggesting economies (diseconomies) of scale?
    - How does the **share of costs** vary across typologies such as facility cost/location or recruitment challenges?
- ✓ Remember that the main purpose of providing alternative facility typology costings is to give you the opportunity to **explore the costings and scenarios that provide the best insights** into the type of strategic decisions that need to be made during the scale-up.
- ✓ Once you have explored those scenarios and typologies, **be selective** and choose a few that will deliver the key messages for your audience.
- ✓ Sometimes, **different data analytics will be useful for** different audiences and at different points of the planning & budgeting cycle.
    - For example, in Zambia when we were discussing how best to allocate one million dollars for capital investments in a small number of facilities, it was important to produce costings by construction and equipment needs, since the facilities prioritized for funding showed important differences in these markers.

- However, when writing the final report, the focus was placed on facility size, to illustrate the importance of strategic decisions about the scope of the scale-up (larger & fewer facilities serving larger catchment areas vs. smaller & more facilities serving smaller catchment areas). We also emphasized the impact of differences in prices such as those related to equipment to make the case for strengthening equipment procurement management practices.

To facilitate data analytics there are charts of key results along with some of the questions that those graphs are addressing. To allow users to copy charts and paste them into other files, such as Power Point presentations, there is limited protection for charts in the file. So, as noted in the costing tool caution needs to be exercised when copy/paste charts.

How do annual recurrent costs per bed vary by typology?



FINANCING (2) SCALE-UP COSTING SCENARIO

FINANCING (2) - SCALE-UP SCENARIO

MODULE OVERVIEW

Complements the facilty typology analytics module by allowing the user to model the costs of a basic scale-up scenario
It can be used in planning & budgeting discussions to examine the impact of recurrent expenditure vs. capital investments
The analysis can also help users gauge how many facilities can be funded within a limited resource envelope
Note that five year estimates are shown here and do not include the cost of replacing capital assets after a certain period of time
The module steps include:
Review the characteristics of the 'typical' facilities that will be used for the scale-up scenario calculations
They represent the typologies used in the previous module (9.Financing_Typology_Analytics)
Select the start year of the scale-up scenario
Scale-up scenario projections shown for five years. If the start year is 2025, the end year of the scenario will be 2029
Enter the percentage of recurrent costs to be funded in each scenario year
It is unlikely that facilities will be fully operational the year they are funded, so this percentage adjusts the recurrent expenditure in that year.
Enter the number of facilities that will be set up each year
To estimate scale-up costs, enter here the number of each 'typical' facility included in the scale-up
Review & validate the number of facilities and associated scale-up costs
Here the user can examine the impact of recurrent vs. captial costs
Review total scale-up costs (facility & national and regional levels)
Here the user can review all scale-up costs, including those incurred at national & regional levels
Review summary charts

Light blue cells are user inputs.
Yellow cells cannot be manually changed by the user

In the first seven modules you set and costed country facility standards for delivering the model of care for small and sick newborns at Level 2 facilities. Supporting national and regional level strategies were identified and costed in module eight. To capture variations in costs across the country, five facility typologies were included. with up to three categories. So, in module nine you have had the opportunity to explore how costs vary with facility characteristics as captured by the relevant typologies.

Once you have explored the typology costings and built the scenarios of alternative combinations of typologies that will be most useful to inform planning & budgeting discussions in the country, you can use this module to:

- ✓ Estimate the expected costs of a scale-up scenario.
- ✓ Examine the capital and recurrent budget implications of setting up new facilities.
- ✓ Explore the number of facilities that can be funded within a given resource envelope.

In this module, you can estimate the expected annual costs of a scale-up scenario with minimum inputs, using the last set of typologies chosen in the previous module (Financing Typology Analytics).

Bear in mind that as noted in the costing tool, to avoid adding another layer of complexity, these estimates do not include additional costs associated with replacing capital assets. This can be a reasonable assumption over the time period of the scale-up scenario (5 years), particularly if adequate budgets for maintenance have been estimated.

STEP 1 – REVIEW THE CHARACTERISTICS OF THE 'TYPICAL' FACILITIES TO BE INCLUDED IN THE SCENARIO

The idea behind this costing scenario is to choose the most 'typical' facilities in the country that would be included in the scale-up. For example, in some settings the most obvious selection would be urban, rural, and remote facilities.

So, if that is the case, select the characteristics that on average would typify those facilities. For example:

- ✓ Would urban facilities tend to be large and located in mid-cost areas and with standard recruitment challenges?
- ✓ In contrast would rural (remote) facilities tend to be of medium (small) size and located in high-cost and hard-to-recruit (very high cost and most challenging to recruit) areas?
- ✓ Would most facilities in the country, regardless of location need new construction and major equipment upgrades?

If the answer is yes to all these questions, the following mix-and-match of typologies (as shown in the Facility Cost Analytics module) would be appropriate for the scaling-up costing exercise.

1.1. Select a costed typology by clicking on each cell & choose from the dropdown menu.

Remember do not copy/paste cut/paste into these cells. Only choose from the dropdown menu

Facility Typology	Facility Type 1	Facility Type 2	Facility Type 3
SIZE	Small	Medium	Large
COST/LOCATION	Very High Cost	High Cost	Mid Cost
CONSTRUCTION TYPE	New Construction	New Construction	New Construction
EQUIPMENT NEEDS	Major need	Major need	Major need
RECRUITMENT CHALLENGES	Most Challenging	Hard-to-recruit	Standard area

1.2. Enter a short name for the 'typical' facility.

This name will be used for displaying charts, so try to keep it short

	Facility Type 1	Facility Type 2	Facility Type 3
User-defined name for the 'typical' facility:	**Remote**	**Rural**	**Urban**

So, to ensure that you are using the right typology mix for costing the scale-up scenario, the first step in this module is to review the typologies currently used.

STEP 1. REVIEW THE CHARACTERISTICS OF THE 'TYPICAL FACILITIES' THAT WILL BE USED FOR THE SCALE-UP SCENARIO CALCULATIONS

This table shows the current typologies modelled in Facility Typology Analytics (Module 8)
Costs for these typologies will be used for the scale-up scenario calculations
Make sure they represent the 'typical' facilities to be included in the scale-up
If you want to change any of the typologies, go back to the previous sheet (8.Facility_Typology_Analytics) and make the corresponding changes

User-defined name for the 'typical' facility:	Remote	Rural	Urban
SIZE	Small	Medium	Large
COST/LOCATION	Very High Cost	High Cost	Mid Cost
CONSTRUCTION TYPE	New Construction	New Construction	New Construction
EQUIPMENT NEEDS	Major need	Major need	Major need
RECRUITMENT CHALLENGES	Most Challenging	Hard-to-Recruit	Standard area

Note that typologies are displayed in yellow cells and so cannot be changed in this module. So, if you need to change any of the typologies, as indicated in the costing tool you just need to go back to the previous module (Step 1.1. as shown above) and make the required changes.

STEP 2 – SELECT THE START YEAR

As noted in the costing tool, here you select the start year for the scale-up, that is the year when the first group of facilities delivering small and sick newborn care will be funded to commence construction.

You can select any year after 2023 and projections will be shown for the subsequent five years. That is if the scale-up starts in 2025 (2026), expected expenditure calculations will be shown until the year 2029 (2030).

Start year of the scale-up scenario:	2024

STEP 3 – ENTER THE PERCENTAGE OF RECURRENT FUNDS TO BE FUNDED IN THE FACILITY SET UP YEAR

The model assumes that 100% of facility capital costs, including infrastructure and equipment, is disbursed in the year the facility is set up. However, it is reasonable to assume that in that first year, for example, while the facility is under construction, recurrent costs such as those related to equipment maintenance will not be incurred.

So, in this step you should enter the estimated percentage of facility recurrent funds that will be financed the year the facility is set up. If you leave this cell blank, the model assumes no recurrent expenditure will be financed that first year. Also note that in subsequent years, 100% of the facility recurrent costs will be included.

% facility recurrent costs funded in the set up year:	10%

STEP 4 – ENTER THE NUMBER OF NEW FACILITIES SET UP EACH YEAR

The table in this step shows the 'typical' facilities described above and each year of the scale-up. Users need to enter for each 'typical' facility the number that will be set up every year. Leave blank or enter 0 if no facility will be set up that particular year.

For example, if the scale-up starts in 2024 and the plan is to build all facilities in the first three years, the table would look like the table below, with empty cells from 2027 onwards.

STEP 4. FOR EACH YEAR OF THE SCALE-UP ENTER THE NUMBER OF 'TYPICAL' FACILITIES SET UP

These 'typical' facilities represent the typologies selected by the user in Facility Typology_Cost_Charts

If there are no facilities set up in a particular year, leave blank o enter 0

	Enter number of **new** facilities included in the scale-up each year				
'Typical' Facilities in Country	**2024**	**2025**	**2026**	**2027**	**2028**
Remote	5	6	2		
Rural	5	7	3		
Urban	5	7	3		

STEP 5 – REVIEW & VALIDATE SCALE-UP SCENARIO ESTIMATES

In this step the user reviews capital and recurrent cost estimates for the scale-up scenario. They correspond to the number of facilities under each 'typical facility' entered in the previous step, multiplied by the capital and recurrent costs of that 'typical facility' as calculated in the previous module (Facility Typology Analytics)

Note that at the bottom of the table there is also a reminder note indicating the currency and base year for the calculations.

To facilitate validating the results and to aid the transparency of the tool estimates, this table also shows the distribution of recurrent costs. Figures in light gray show:

- Recurrent costs for new facilities, which have been adjusted by the percentage entered in Step 3.
- Recurrent costs for facilities established in previous years, which are included at 100%.

The disaggregation of recurrent costs by new and previously established facilities will be particularly useful to aid strategic discussions on budget allocation and sustainability.

For example, a scenario where a larger number of facilities are set up in the early years is useful to illustrate the need for proper allocation of budgets to recurrent expenditure to ensure those facilities already established can continue operating at full capacity and in compliance with country standards.

In the example below, although no facilities are set up in the last years of the scale-up, budgets remain substantial due to the recurrent expenditure associated with already established facilities.

STEP 5. REVIEW & VALIDATE SCALE-UP SCENARIO COSTS (CAPITAL & RECURRENT)

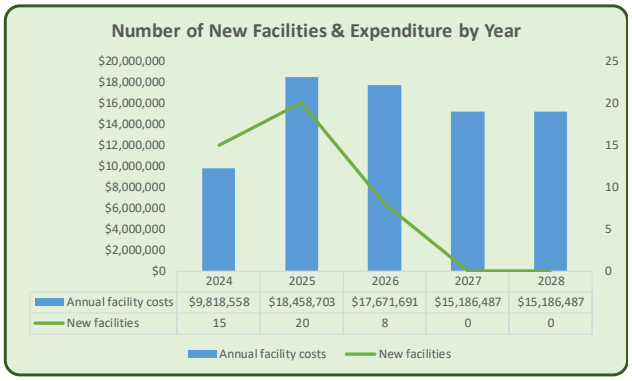
In this table you can review the total number of new facilities funded each year as well as the associated scale-up costs
This table shows capital expenditure for facilities funded in a year.
Annual recurrent costs are estimated separately for new facilities and for those set up in previous years
Remember that all costs in this table are presented in constant prices. The same base year and currency indicated in inputs.

Scale-up Year	2024	2025	2026	2027	2028
New facilities	**15**	**20**	**8**	**0**	**0**
Annual facility costs	**$9,818,558**	**$18,458,703**	**$17,671,691**	**$15,186,487**	**$15,186,487**
Capital (%)	100%	72%	30%	0%	0%
Recurrent (%)	0%	28%	70%	100%	100%
Capital Costs ($)	$9,818,558	$13,204,611	$5,349,765	$0	$0
Recurrent Costs ($)	$0	$5,254,092	$12,321,926	$15,186,487	$15,186,487
Recurrent new facilities ($)	$0	$0	$0	$0	$0
Recurrent facilities set up in previous years	$0	$5,254,092	$12,321,926	$15,186,487	$15,186,487

Note: All financial figures are in USD - Base Year (2022)

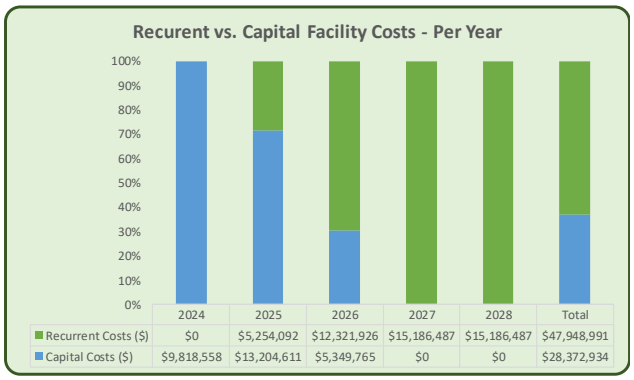
To facilitate the analysis, summary charts are also displayed. The first one shows the number of new facilities and the expected level of expenditure by year. The second one shows the distribution of capital and recurrent expenditure per year.

How many new facilities are funded every year?
What are the expected levels of facility expenditure?



Note: All financial figures are in USD - Base Year (2022)

What about facility capital vs. recurrent costs?
How does the split change by year?



Note: All financial figures are in USD - Base Year (2022)

STEP 6 – REVIEW TOTAL SCALE-UP COSTS, INCLUDING NATIONAL & REGIONAL COSTS

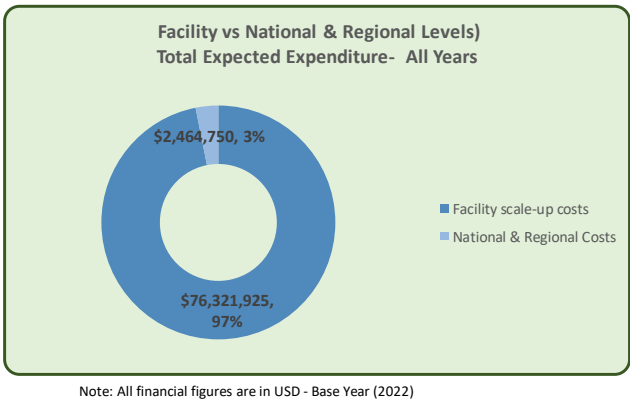
The previous steps showed the scale-up costs at facility levels. Here the user can review the total costs of the scale-up, including estimates of the resources required to implement national and regional level strategies. A summary chart of the distribution of costs is also shown here.

STEP 6. REVIEW TOTAL SCALE-UP COSTS BY YEAR (FACILITY, NATIONAL AND REGIONAL LEVELS)

Review total scale-up costs, including national & regional level strategies, by year

	2024	2025	2026	2027	2028	Total
Facility scale-up costs	$9,818,558	$18,458,703	$17,671,691	$15,186,487	$15,186,487	$76,321,925
National & Regional Costs	$684,950	$444,950	$444,950	$444,950	$444,950	$2,464,750
TOTAL SCALE-UP COSTS	**$10,503,508**	**$18,903,653**	**$18,116,641**	**$15,631,437**	**$15,631,437**	**$78,786,675**
Note: All financial figures are in USD - Base Year (2022)						

How does the expected expenditure at national and regional levels compare with expenditure at facility level?



Note: All financial figures are in USD - Base Year (2022)

Annual costs & inflation

As noted in the costing tool, all costs are presented for the same base year. This means all costs are presented in constant prices using the base year indicated in General Inputs. Those costs are thus inflation adjusted and a total can be estimated (last column not shown above).

Let us look at the example above to unpack a few things:

When we say that all costs are measured for the same base year. e.g. 2022, this means that we are using 2022 as a reference point, that is, all costs for all years are measured in 2022 constant dollars. And one (constant) dollar will buy the same amount of goods and services every year.

For example, if a piece of equipment costs $300 (constant dollars) in 2022 it would still cost $300 (constant dollars) five years later, in 2027. That is so because we are using the same '2022 dollars' for both years.

This is unlike current dollars, which refer to the current year and prices. They represent the nominal value of money without adjusting for changes in purchasing power. In times of inflation, the same piece of equipment costing $300 (current dollars) in 2022 might cost $350 (current dollars) or more in 2027 because prices have gone up.

So, when we use constant dollars to measure costs over several years, it allows us to compare costs across years without the distortion caused by inflation. Any difference that we observe is the 'real' change in costs, not just because things have become more expensive over time.

Therefore, if we look again at the scale-up scenario cost estimates shown above, we can see that in 2026 $17.7 million (constant dollars) would be required to fund capital and recurrent expenditure. The required funding is substantially higher than that for 2024 ($9.8 million constant dollars) and lower than in 2025 ($18.5 million constant dollars).

And you notice that the number of new facilities set up in 2026 (8 facilities) is substantially lower than in the other years (15 in 2024 & 20 in 2025), so you want to understand why those costs are still so high.

STEP 5. REVIEW & VALIDATE SCALE-UP SCENARIO COSTS (CAPITAL & RECURRENT)

In this table you can review the total number of new facilities funded each year as well as the associated scale-up costs
This table shows capital expenditure for facilities funded in a year.
Annual recurrent costs are estimated separately for new facilities and for those set up in previous years
Remember that all costs in this table are presented in constant prices. The same base year and currency indicated in inputs.

Scale-up Year	2024	2025	2026	2027
New facilities	**15**	**20**	**8**	**0**
Annual facility costs	**$9,818,558**	**$18,458,703**	**$17,671,691**	**$15,186,487**
Capital (%)	100%	72%	30%	0%
Recurrent (%)	0%	28%	70%	100%
Capital Costs ($)	$9,818,558	$13,204,611	$5,349,765	$0
Recurrent Costs ($)	$0	$5,254,092	$12,321,926	$15,186,487
Recurrent new facilities ($)	$0	$0	$0	$0
Recurrent facilities set up in previous years	$0	$5,254,092	$12,321,926	$15,186,487

Note: All financial figures are in USD - Base Year (2022)

If costs in that table were measured in nominal currency, you would not know if the high costs in 2026 were explained by increases in prices or were 'real'. However, because costs are measured in constant terms, we know that the observed higher costs are not due to the impact of inflation but due to other factors, such as the impact of recurrent expenditure associated with facilities set up in previous years.

This is indeed one of the main reasons to measure all annual costs in constant prices, so we can compare apples with apples.

Nonetheless, remember that for the purpose of preparing annual budgets for a particular year, budget officials will need to convert those costs to current dollars (or local currency) using inflation data. When updating costs for budgeting purposes, several issues should be considered.

First, it is important to document the currency and base year used for modelling costs, as requested in the inputs sheet, to proceed with the calculations correctly.

Second, local experts should be engaged to provide feedback and insights into the most robust assumptions to make when updating costings. Pay particular attention to different rates of inflation affecting major costs. For example, over the years, the prices of imported goods such as medical equipment might have risen substantially due to exchange rate depreciation, while staff salaries might have shown only modest increases.

Third, for some costs, such as staff salary costs, information is usually readily available and can be quickly updated in the inputs sheet. In such cases, it might be advisable to collect this data again.

Fourth, for other costs, such as equipment acquisition, collecting price inputs again for all devices might not be feasible. In these instances, you might consider collecting data on a few items identified as accounting for the majority of costings and update costs accordingly.

By considering these issues, sound advice can be given to planners and budget officials to accurately reflect the impact inflation has had on the prices of major cost items in the years since the initial cost modelling was undertaken.

FURTHER ANALYTICS

Facilities that can be funded within a given resource envelope

The results of the scenario can be used to gauge the number of facilities that could be funded within a particular resource envelope. Since it provides a breakdown of recurrent costs showing the 'carry over' from facilities set up in previous years, you are able to easily estimate the amount of additional resources available after covering these costs.

For example, let us assume that the annual scale-up budget for 2027 is $16 million dollars and that we continue with the scenario modeled above. If we look again at those tables and focus on the recurrent costs of previously set up facilities, we can see that $15.2 million dollars of the scale-up budget in the year 2027 need to be devoted to fund the recurrent expenditure of facilities previously set up. And if we look at the expenditure associated with national and regional levels, this is expected to be around $445 thousand. Therefore, we can conclude that there is no funding available for setting up new facilities that year.

Including an additional set of 'typical' facilities in the scale-up

In the event that you consider it necessary to include an additional set of 'typical' facilities in the scale-up costs, you just need to run an additional model with the new typologies and add up the results.

For example, in addition to the urban, rural, and remote facilities typified above, you might wish to include a new set of 'typical' facilities with lower needs. That is, as shown below, they are facilities with similar size, cost/location, and recruitment characteristics, but in need of rehabilitation (instead of new construction) and partial equipment (instead of major equipment).

	Typical Facilities to be included in the scale-up					
Typologies	**Remote**	**Rural**	**Urban**	**Remote Low Need**	**Rural Low Need**	**Urban Low Need**
SIZE	Small	Medium	Large	Small	Medium	Large
COST/LOCATION	Very High Cost	High Cost	Mid Cost	Very High Cost	High Cost	Mid Cost
CONSTRUCTION TYPE	New Construction	New Construction	New Construction	Rehabilitation	Rehabilitation	Rehabilitation
EQUIPMENT NEEDS	Major need	Major need	Major need	Partial Need	Partial Need	Partial Need
RECRUITMENT CHALLENGES	Most Challenging	Hard-to-recruit	Standard area	Most Challenging	Hard-to-recruit	Standard area

So, in this case you just need to follow these steps:

Second, review the number of facilities included in the scale-up under each of the six categories.

First, run a model with the first three 'typical' facilities (Remote, Rural & Urban) and copy the results of the scale-up scenario costing in a new workbook. Remember to always use copy/paste values.

Second, run a model with the second set of 'typical' facilities (Remote Low Need, Rural Low Need & Urban Low Need) and copy the results in the same workbook as above

Third, just add up the facility cost results from both scenarios.

A FINAL NOTE ON INTERPRETING & USING THE TOOL ANALYTICS

The General Inputs and the Planning & Budgeting modules (Modules 1 to 8) involve setting country standards, designing strategies and estimating the corresponding costs. The final two modules help users put together the costing estimates to inform strategic and financing discussions on the scale-up. They include summary tables as well as charts.

In reviewing each of the modules, we have provided pointers to aid sense-checking results as you go along. For the final two modules we have emphasized the use of the results to inform country planning & budgeting discussions and examine various financing aspects of the scale-up.

The tool has an intuitive step-by-step structure with summary instructions under each step to facilitate the general use of the tool and to help you understand how costs are estimated and what drives the results.

This is important not only for ensuring the accuracy of the results and the transparency of the tool calculations, but also to aid the planning & budgeting process. Understanding what drives the results helps you identify 'what it takes' to implement country standards and the impact that the different variables have on costs for each component of the model of care.

So, we recommend that while working with the tool you consider the following issues:

TAKE ADVANTAGE OF THE FACT THAT THE TOOL, LIKE IMPLEMENTATION, ASKS FOR 'SPECIFICS'

A risk of planning guides and standards is that they might remain generic, failing to produce detailed guidance to implementers. Though assumptions can be made to estimate costs in these situations, modeling assumptions will be of limited help to those in charge of implementing the scale-up.

For example, stakeholders might agree that each facility should have an interprofessional team with the right set of skills and competencies, but to effectively plan and budget for the scale-up, we also need to know the 'specifics.' This includes what type of human resources are needed and the number of individual staff members required at each facility.

The same applies to all the other components of the model of care. For example, to ensure physical facilities are adequate and well equipped, standards need detailing so that managers know the type of beds, the size of the required inpatient care unit as well as the type and number of devices required at each facility.

As examined under each planning & budgeting module, the first steps always relate to setting the 'specifics' of those country standards. Using the costing tool can aid grounding stakeholder discussions so that they focus on what those 'specifics' are. And since the tool allows for rapid costing of standards, once they are set, the modeling results can facilitate the decision-making process as they reveal what it takes and how much it costs to implement them.

SENSE-CHECK RESULTS STEP-BY-STEP

The step-by-step approach of the tool and the inclusion of review steps aids the transparency of the tool calculations. All the intermediate calculations are shown to enable users to understand step-by-step how each estimate is calculated. This will allow you to understand what the key cost drivers are and sense-check the estimates.

So, when sense-checking preliminary results shown in the review steps, it is important to examine:

- ✓ Do those results seem accurate?
- ✓ What do they mean for the scale-up implementation?
- ✓ Are the expected system requirements for each facility realistic?
- ✓ Are they in line with quality of care standards?
- ✓ How much does it cost to implement them?
- ✓ Which are the items that contribute most to costs?

LEVERAGE THE LARGE NUMBER OF TYPOLOGIES THAT CAN BE SIMULTANEOUSLY COSTED

When modeling the costs of delivering facility services in a country, many variables are at play and one size does not fit all. So, take advantage of the large number of facility typologies that can be simultaneously costed.

Typologies can be used to present a range of estimates that incorporate some of the uncertainty inherent to this type of modeled estimates. Most importantly, as we discussed earlier, you can use the facility typology analytics to explore alternative scenarios illustrating the cost implications of decisions such as the size and location of new facilities.

IDENTIFY THE BEST DATA ANALYTICS TO INFORM STRATEGIC DECISION MAKING

Identify the key strategic decisions that can be informed by the costing tool and take advantage of the tool's ability to rapidly estimate costs to help stakeholders visualize those scenarios.

Examine and discuss the implications of the proposed country standards:

- ✓ What do they say about what it takes to set up a facility that delivers good quality of care to small and sick newborns?
- ✓ When looking at the scale-up, what are the salient gaps in terms of requirements?
- ✓ How much does it cost to set up facilities according to those standards?
- ✓ What are the implications in terms of recurrent budgets?

Remember that those standards are the key cost drivers, but most important, they are also critical to ensure good quality of care.

Also look at results to identify the items that represent the largest capital and recurrent costs and what drives those costs. For example, what are the devices accounting for the largest share of equipment costs? And, in addition to staff salaries are there other large recurrent costs? Examine if there are any salient economies or diseconomies of scale for each of the major cost items.

Review the reminder menus in the last two planning & budgeting modules to check if the supporting systems are in place for the other components of care and if national and regional level strategies are adequate to support the scale-up.

REFERENCES

1. WHO-UNICEF Expert and Country Consultation on Small and or Sick Newborn Care Group. A comprehensive model for scaling up care for small and/or sick newborns at district level- based on country experiences presented at a WHO-UNICEF expert consultation. J Global Health 2023; 11:03023
2. WHO. Standards for improving quality of care for small and sick newborns in health facilities. Geneva: WHO, 2020.
3. —. Human resource strategies to improve newborn care in health facilities in low- and middle-income countries. Geneva: WHO, 2020.
4. —. Survive and thrive: transforming care for every small and sick newborn. Geneva. Geneva: WHO, 2019.
5. Indian National Neonatology Forum, UNICEF. Toolkit for Setting Up Special Care Newborn Units, Stabilisation Units and Newborn Care Corners. New Delhi: UNICEF, 2011.
6. UNICEF, WHO and Bangladesh Neonatal Forum. Standard Operating Procedures for Newborn Care Services at Primary and Secondary Level Hospital. Dhaka: UNICEF, 2014.
7. Limpopo Initiative for Newborn Care. Norms and Standards for Essential Neonatal Care. Essential newborn care implementation toolkit. Limpopo: Limpopo Department of Health and University of Limpopo, 2013.
8. WHO-UNICEF Expert and Country Consultation on a Generic Model for Inpatient Care of Small and or Sick Newborns (Power Point Presentations), 2021 (Unpublished).
9. NEST360. Newborn Implementation Toolkit. [Online] 2022. https://www.newborntoolkit.org/toolkit.
10. Trikka, Sonja, et al. Continuous Quality Improvements to Deliver Small and Sick Newborn Care – A case study of a government-led journey in the State of Haryana (India) s.l.: Unpublished, 2023.