

The cost of an essential health service package for northern Syria



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Acknowledgments

I would like to acknowledge the leadership and guidance of Dr Tasnim Atatrah, who commissioned this study on behalf of WHO. I would also like to acknowledge the guidance and support of Dr Abdul Rahman Alomar of SAMS-USA who is the national co-lead for the Health Cluster- Turkey.

The participants of the Technical Working Groups are also thanked – in particular the representatives of AID, ATTA, Bihar, CEMRO, HIHFS, IDA, ORIENT, PAC, QRC, Relief International, SAMS, SEMA, SHAM, Syria Bright Future, WAHA, UNICEF, UOSSM and WAHA. And especially those organizations that were kind enough to share data. I would like to thank other members of WHO/Gaziantep who provided support through the study, especially Dr Manuel de Lara, Mohamed Alamein Boshara, and Rukiye Kalender. Finally I would like to thank Andrew de Gannes, Nilgun Akkan and Pinar Sungur for their help with organizing the contract and logistics.

Citation. David Collins. The cost of an essential health service package for northern Syria. Management Sciences for Health, Medford, USA. March 2017.

Executive Summary

The ongoing conflicts in Syria have had a major impact on the health of the population and have also reduced the capacity of health care service delivery to a minimum. Assessments by the World Health Organization (WHO) indicate that the conflict has resulted in fragmentation of the delivery system for essential services which are primarily provided by many different Non-Government Organizations (NGOs).

A major challenge for the service delivery system is the lack of standardized guidelines to support the effective delivery of quality health care services. In response, WHO has led the development of an Essential Health Service Package (EHSP) for northern Syria (WHO/Health Cluster). The package details the preventive and curative health services that are appropriate to address the health needs of the population, taking into account physical and mental trauma effects of the crisis.

This report describes the implementation and results of a study conducted to develop cost estimates for the implementation of the EHSP. The study was conducted using a tool which is intended for use by health partners to help guide planning and management of this implementation, and to help ensure effective resource allocation.

Data were collected from WHO representatives as well as the NGO members of Technical Working Groups established previously for each program. The data were analyzed in a primary health care facility costing tool called CORE Plus, which has been used in many countries. The costing was conducted on a normative basis and represents the recurrent resources needed to provide the package of services for 100% and 50% coverage based on normative catchment populations for each of four levels of primary health care.

The results indicate that a Mobile PHC Clinic would have 51 services, a PHC Unit and PHC Centre would have 55 services and a Comprehensive PHC Centre would have 58 services. Out of the whole package of 58 services, PHC Units and PHC Centres would not provide cervical cancer screening, deliveries and neonatal care, while Mobile PHC Clinics would also not provide treatment for malnourishment.

The average number of services per capita for 100% coverage would range from around 6.5 at Comprehensive PHC Centres to around 5.5 at the other levels of care, and half of those figures if coverage is 50%. The average cost per capita is estimated at between USD 75 and USD 78 for 100% coverage and between USD 40 and USD 43 for 50% coverage.

Given that some of the cost elements, such as laboratory reagents, have not yet been costed and that immunizations are not included, adding these costs would not result in more than 10% in extra costs. This would make the cost per capita approximately USD 85 for 100% coverage and USD 45 for 50% coverage. Medicines and supplies would comprise over 70% of total costs.

The unit cost per service should not vary much across the different levels of care, the only differences being the types of technical staff who provide the service (e.g., no specialists at lower levels) and the

operating costs. The service with the lowest cost under the 100% coverage scenario would be Growth Monitoring at USD 0.25 whereas the service with the highest cost would be Inpatient Therapeutic Treatment for a severely malnourished child with complications at USD 267.

The actual coverage of the NGO facilities is not clear due to uncertainties over catchment populations and shifting numbers of IDPs. An assessment of current coverage would be very useful. However it seems likely for some of the NGO data that actual coverage may be far less than 100% and therefore the costs for 50% coverage may be the most realistic. The cost per service would not vary much according to the catchment population but the cost per capita would vary directly with the catchment population. The normative technical staffing numbers appear reasonable for 50% coverage except for the Comprehensive PHC Centre, where they may be low.

It is worth noting that the cost for each facility assumes that it is the only one serving a given catchment population. If, however, a Comprehensive PHC covering 40,000 people has PHC Units and Mobile PHCs serving the same catchment population then the cost of those PHC Units and Mobile PHCs substitute to some degree for the Comprehensive PHC Centre cost and should not be added to it.

Completing the cost estimates so that they can be used for more accurate estimates by the NGOs requires some additional steps, such as reviewing again the incidence/prevalence rates and standard treatment guidelines (especially for the chronic illnesses), pricing laboratory reagents, reviewing medicines and supplies prices, adding the costs of X-rays and ultrasound imaging, adding immunizations, and conducting a more in-depth analysis of operating costs across the NGOs.

It is recognized that the availability of financing for health services in northern Syria is limited so it is essential that resources be used as cost-effectively and efficiently as possible. It is therefore appropriate to offer some recommendations, which are as follows:

- Most of the costs relate to medicines and it would be important to conduct a review of the selection and procurement of medicines to see where costs can be saved.
- Based on the actual catchment figures provided by some NGOs there may be a need for rationalization of the location of facilities and mobiles. An assessment of current coverage would be an important part of that exercise.
- Given the reported high prevalence of NCDs and Mental Health illnesses and the high cost of treating them, together with the need to expand maternal and child services, there may be a need to prioritize certain services.
- Based on reported shortages of doctors and the need to save costs consideration should be given to task shifting to lower levels of staff including community health workers.

The above and other challenges would be best addressed in a strategic plan for the cost-effective and affordable provision of priority services over the next 3 years.

1. Introduction

The ongoing conflicts in Syria have had a major impact on the health of the population and have also reduced the capacity of health care services delivery to a minimum. Assessments by the World Health Organization (WHO) indicate that the conflict has also resulted in fragmentation of the delivery system for essential services which are primarily provided by many different Non-Government Organizations (NGOs). A major challenge for the system is the lack of standardized guidelines to support the effective delivery of quality health care services.

In response to the fragmentation challenge, WHO has led the development of an Essential Health Service Package (EHSP) for northern Syria (WHO/Health Cluster). The package details the preventive and curative health services that are appropriate to address the health needs of populations. The package is intended to serve the following objectives:

- Provide a prime mechanism for strategic service provision;
- Help to clarify health priorities and directs resource allocation;
- Define roles and responsibilities;
- Address current poor access to health and inequalities in health service provision;
- Provide a road map for action;
- Enable budgetary planning;
- Standardize and improve systems, including developing essential drugs and equipment lists for each level of provision.

The process of developing the package started early in 2016 with the formation of a technical committee led by WHO. Intensive discussions were held with local health authorities and sub-cluster groups including NGO representatives for the different health programs including child health, mental health, communicable and non-communicable diseases, reproductive health and nutrition. The partners defined four levels of PHC facilities, and for each level they defined the types of health services to be provided in addition to the required human resources, equipment, laboratory and essential medicines. The EHSP includes all the basic services seen as desirable and is intended to take into account affordability, given existing and foreseeable resource constraints.

The levels of service and the normative range of catchment populations defined in the EHSP document are as follows:

- Level 1. PHC Mobile Clinic, 500 – 10,000;
- Level 2. PHC Unit, 3,000 – 10,000;
- Level 3. PHC Centre with inpatient care, 10,000 – 30,000;
- Level 4. Comprehensive PHC Centre with in-patient, basic obstetric and neonatal care, 30,000 – 50,000.

Descriptions of the levels of care in the EHSP document are provided in Annex D.

The main aim of this consultancy was to develop cost estimates for the implementation of the EHSP. The health partners in Gaziantep intend to use the tool in order to estimate costs associated with implementing the Essential Primary Health Care Package in accessible governorates in northern Syria, to help guide planning and management of this implementation, and help ensure effective resource allocation. The importance of costing EHPs is highlighted in the desk study by Modol and Colombo which emphasizes the need to ensure that the package is affordable.

2. Methodology

The costing involved four steps:

- Selecting an appropriate costing methodology and tool;
- Collecting and organizing the service and cost data;
- Entering the data into the tool;
- Analyzing and reviewing the results.

Costing methodology

A normative approach was used for the costing with the objective of estimating the costs of providing sufficient resources for adequate quality of care. Using actual expenditures is not usually reliable for this type of costing since they may reflect poor quality (e.g., insufficient staff or medicines), inefficiency (e.g., the use of an inappropriate level of provider) or waste (e.g., excessive procurement of medicines which then expire). The need or potential demand for services is estimated by applying the incidence or prevalence rate for each disease to the catchment population. Standard costs are then developed for each service using standard treatment guidelines. Standard staffing and operating costs are based on provider organization experience.

The costing comprised total costs from the provider perspective. These comprised financial costs incurred by the providers as well as the costs of donated medicines and supplies. The cost of medicines was based largely on the cost of procurements made by WHO and reflected mainly international prices plus a mark-up for importation and storage costs. Patient costs were not included.

Only recurrent costs were included in the modeling since these directly relate to the ongoing costs of providing the services. Capital costs, such as for the purchase of equipment, vehicles or the construction of facilities are not included as these are “one-off” costs and should be costed separately from recurrent costs.

Costing tool

The requirements of this costing include the provision of a costing tool that can be used by the partners in the future. Since each NGO has a different cost structure and each facility has a different catchment population it is necessary to use a dynamic tool in which key variables can be modified easily and the

results seen quickly. It is also important that the tool be in accessible software, open source and easy to use.

Based on recommendations from WHO/Geneva it was decided to use a costing tool called CORE Plus which was developed specifically for costing primary health care facilities. This tool was reviewed by an international panel in 2008¹, has been used in many countries and is referenced in a recent desk study (Modol and Colombo). It is a dynamic costing tool developed in Microsoft Excel, it is open source (i.e., formulas can be seen and changed) and it is easy to use by a person with appropriate skills.

Data collection and organization

The collection and organization of data was generally a time-consuming exercise involving several people and many activities. The work was led by the consultant and involved representatives of WHO, UNICEF and the NGOs. Existing Technical Working Groups (TWGs)² provided the opinions and data on which the costing was based. The specific activities were as follows:

- The TWGs re-classified the package into services that can be costed;
- WHO and selected NGOs provided unit prices for medicines, supplies, and tests;
- The TWGs estimated the incidence/prevalence rates and developed standard treatment guidelines;
- NGOs provided data on staffing, salaries and operating costs;
- A small sample of NGOs provided services and expenditure data for each level of care;
- The consultant entered the data in the tool and conducted an initial analysis for two levels of care of the normative costs and comparisons of normative and actual costs;
- The results of the initial analysis were reviewed with the WHO and TWG leaders;
- The results were then summarized and presented in a workshop organized by WHO and attended by the NGOs and donors;
- The initial results were refined and the normative costs were estimated for all four levels of care and provided in the form of a report.

An important part of this process that was not listed above is the mapping of the services in the package to those used in the health information system (HIS). However, in this case work is ongoing to develop a standard HIS for the primary care level and it was, therefore, agreed that the service definitions used for the costing would be communicated to the HIS development team.

Reclassification of services

For costing it is necessary to define services in terms of encounters – either one or more providers with one patient (e.g., the treatment of a child for pneumonia) or a provider with a group of patients or community members (eg a health education talk)³. It is also essential that these “services” match with

¹ http://www.who.int/pmnch/knowledge/publications/costing_tools/en/

² The TWGs were for Child Health (CH), Communicable Diseases (CD), Mental Health (MH), Non-communicable Diseases (NCDs), Nutrition and Reproductive Health (RH).

³ On most cases these encounters are with teams of providers, not single providers. For example, a patient who visits a facility may register with a clerk, have her history and vital signs taken by a nurse, have a consultation with

the categories in the health information system⁴. For this study the first step was, therefore, to analyze the service package and restructure it into encounters. As in most cases the EHSP is comprehensive but not specific enough in some areas. For example, the section on Child Health has two lines of curative services:

- Integrated management of childhood illnesses (IMCI); and
- Management of communicable diseases

While these are adequate in terms of describing the types of service they are not specific enough for costing purposes and must be broken down into specific services. In this case these two broad categories were broken down by the Child Health TWG into the most common illnesses and one referral service:

- Lower respiratory infections <5
- Upper respiratory infections <5
- Diarrhea - not bloody - <5
- Diarrhea - bloody - <5
- Anemia <5
- Otitis Media <5
- Treatment and referral of general severe child case <5
- Measles treatment <5
- Anemia <5
- Otitis Media <5
- Measles treatment <5
- Typhoid -<5
- Hepatitis A <5
- Parasital infections <5
- Treatment and referral of general severe child case <5

Health education was listed as an element under several programs. These were condensed into one service to be provided at the facility and mobile.

Each of these services involves encounters with providers and can be costed. The re-categorization resulted in a total of 58 services which are listed in Annex B.

Estimation of incidence and prevalence rates

The need or potential demand for services represents the numbers of services required if the whole of the catchment population use the services for all the health needs covered in the package. In making this calculation we assumed that the facility is the only services provider for the catchment population. The need is based on the incidence rate for the illness – e.g., acute respiratory infection in children

a doctor, have tests done by a laboratory technician, get medicines from a pharmacist and get counseling from a nurse. The NGOs sometimes describe curative encounters as “consultations”.

⁴ Basically, If we cannot count it we cannot cost it.

under 5 years old. In the case of some chronic conditions prevalence rates are used instead of incidence rates, such as the number of people suffering from diabetes at any time.

The number of times that a person interacts with a provider depends on the reason for the interaction. For example, a patient with a chronic condition, such as diabetes, is assumed to visit a facility four times per year, which means four encounters. A patient with an acute respiratory infection, however, is assumed to only visit a facility one time, resulting in one encounter.

The number of services provided at a facility is generally higher than the number of visits to the facility, since some patients use more than one service during a visit (e.g., a woman may receive treatment for malnutrition, a cough and depression).

Development and allocation of costs

The direct costs of the services were based on standard treatment guidelines (STGs). These were developed by the TWGs for each service and comprised the quantities of resources required to provide a good quality service. These quantities are then multiplied by the price of each resource to produce a total standard cost for each service.

For each service the TWGs determined which facility staff member would normally provide the service and how much of his or her time should be needed. The TWGs also determined which tests, medicines, supplies are commonly required to diagnose and treat each condition.

Standard staffing patterns are provided in the EHSP document and these were used as the basis for the costing. However, the costing tool calculates the numbers of technical staff needed based on the workload and these figures are also shown. 10% of the time of the technical staff was assumed to be spent on non-technical activities, such as meetings and reporting. The numbers of non-technical staff (e.g., accountants and drivers) were taken from one of the NGOs. The salaries were based on a proposal for standard figures developed by WHO and the TWGs in 2014.

The unit prices of medicines were based on a costing exercise carried out by WHO and most of the prices reflected recent purchases made by WHO on the international market⁵. The prices for supplies were based on data from one of the NGOs and bulk costs for supplies were based on a study from another country. The cost of laboratory reagents was not available at the time of the study and dummy figures of USD 1 per test were used to populate the models.⁶

The operating costs (e.g., fuel for generators, maintenance, stationery) for each level of facility were taken from a sample of facilities.

The salary costs for the non-technical staff, the administrative and unallocated costs of the technical staff and the operating costs were allocated across the services in proportion to the direct staff costs.

⁵ In some cases NGOs purchase medicines in Turkey and it appears that these prices are higher than the international prices. This has not been taken into account in the costing.

⁶ A list of materials prices was provided by one of the NGOs but these will need to be grouped to provide the cost of the materials used for each test.

Validation of results

There was insufficient time to compare the results of the normative costs with the actual expenditures included at a number of facilities. This is, however, a useful exercise in terms of helping to validate the results and also in illustrating some of the challenges that NGOs may face in standardizing services and costs. It is recommended that this be done at a later stage, perhaps as part of any training in the use of the tool.

3. Results

3.1. Results introduction

The results for each level of care are presented in the following sections, starting with a Comprehensive PHC Centre. They are then summarized in the last section. The results are shown for two scenarios. The first scenario shows the results for 100% coverage – these represent the cost of meeting 100% of the need for the catchment. The second scenario shows the results of meeting 50% of the need, which is probably a more feasible figure. This assumes that only 50% of the population would have easy access or would want to, or be able to, avail themselves of the services. The model can be adjusted to show a different coverage percentage for each services and it is recommended that this be done based on an assessment of the current actual levels of coverage and the capacity to increase the supply of services.

The estimations of staffing needs are based on part on the time that staff have available to provide services. The models all used the same assumptions, which were as follows:

- Facilities (including mobile clinics) provide services for 8 hours per day 6 days per week;
- Staff take 15 public holidays, 20 vacation days, 5 sick days and 5 training days;
- Staff spend 90% of their time seeing patients and 10% managing and reporting on services.

Key population figures used in the model were:

- Children under 5 years old – 10%;
- Women of reproductive age – 30%;
- Pregnant women – 3.9% times total population times 1.05.

3.2. Comprehensive PHC Centre

According to the EHSP the catchment population for a Comprehensive PHC Centre should be within the range of 30,000 to 50,000 people. For the cost modeling we assumed a mid-range figure of 40,000 and we assumed that there are no other fixed or mobile clinics serving this population. Providing the package of 58 services to all the people who need care in a catchment population of 40,000 would result in a total of 263,794 services (Table 1).

The average number of services (or encounters) for this facility come to 6.59 per capita (total population) for 100% coverage and 3.30 for 50% coverage. The 100% coverage figure means that each person in the catchment population would have an average 6.59 encounters with a health provider (or a health provider team as explained earlier). This number is driven mostly by the high numbers of needed encounters for certain services. Under the 100% scenario, there would be 11,200 diabetes encounters, 8,000 hypertension encounters, 11,200 asthma/COPD encounters, 19,200 cardio-vascular encounters, 72,000 depression encounters and 7,200 psychosis encounters (see Annex C). In addition there would be 12,000 family planning counseling encounters, 33,600 male condom encounters and 19,200 oral contraceptive encounters. These 9 services would account for 73% of the total number of 263,794 services, mainly because they each involve multiple provider encounters in a year.

The majority of the services would be curative (159,217) for 100% coverage followed by preventive services (103,921).

Table 1. CPHCC catchment population and services based on 100% and 50% coverage.

Basic Statistics	100% Coverage	50% Coverage
Catchment population	40,000	40,000
Community Health Catchment Population (if applicable)	40,000	40,000
Total types of services in full package	58	58
Services: Total and Per Capita	100% Coverage	50% Coverage
Total types of services delivered from the package	58	58
Total number of services provided	263,794	131,897
Average number of services per capita	6.59	3.30
Total Curative services provided	159,217	79,609
Average number of Curative services per capita	3.98	1.99
Total Preventive services provided	103,921	51,961
Average number of Preventive services per capita	2.60	1.30
Total Other (Deliveries) services provided	655	328
Average number of Other (Deliveries) services per capita	0.02	0.01
Total Promotional services provided	0	0
Average number of Promotional services per capita	0.00	0.00

The program with the highest number of services would be Reproductive Health (91,050) followed by Mental Health (82,572) and Non-communicable Diseases (64,480) (Table 2).

Table 2. CPHCC services by program – 100% and 50% coverage

Services: Total number by National Program	100% Coverage	50% Coverage
Child Health	5,188	2,594
Nutrition	13,870	6,935
Reproductive Health	91,050	45,525
Communicable Diseases	6,336	3,168

Non-communicable Diseases	64,480	32,240
Mental Health	82,572	41,286
Immunization	0	0
Health Education	298	149

The total cost of covering 100% of the catchment population would be USD 3.0 million for one year, while covering 50% would cost USD 1.6 million (Table 3). Most of this would be for curative services. This would come to an average of USD 11.72 per service for 100% coverage and USD 12.31 for 50% coverage⁷. The cost per service would range from USD 0.25 for Growth Monitoring to USD 267.60 for inpatient treatment of a child for malnutrition⁸. The average cost per capita would be USD 77.31 for 100% coverage and USD 40.59 for 50% coverage.

Table 3. CPHCC total costs (USD) for 100% and 50% coverage

Costs: Total and Per Capita	100% Coverage	50% Coverage
Total cost of all services	3,092,508	1,623,714
Total Cost at Primary (Ambulatory)	3,076,250	1,613,672
Total Cost at Secondary (Hospitalization)	16,258	10,042
Total Cost at Community	0	0
Cost per service	11.72	12.31
Cost per capita	77.31	40.59
Total cost of Curative services	2,806,347	1,454,899
Average cost per Curative service	17.63	18.28
Total cost of Preventive services	269,903	158,773
Average cost per Preventive service	2.60	3.06
Total cost of Other (Deliveries) services	16,258	10,042
Average cost per Other (Deliveries) service	24.81	30.65
Total cost of Promotional services	0	0
Average cost per Promotional service	0.00	0.00

The resource type with the highest cost would be drugs, supplies and test materials (USD 2.3 million with 100% coverage and USD 1.1 million with 50% coverage) reflecting over 70% of total costs (Table 4). The next highest would be technical staff costs (around 18% of total costs)⁹.

Table 4. CPHCC costs by resource type (USD) for 100% and 50% coverage

Break-down of Total Costs	100% Coverage	50% Coverage
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⁷ The lower average cost per service for 100% coverage is due to economies of scale (fixed costs spread across more services).

⁸ Great caution should be made when comparing figures for average costs across all services since they vary significantly depending on the mix of services.

⁹ In many countries technical staff costs are higher at around 30% of total costs but in this case medicine costs are higher due to the inclusion of chronic NCDs in the EHSP.

Salaries (Technical Staff)	547,236	305,208
<i>Technical Salaries as % of total</i>	<i>17.7%</i>	<i>18.8%</i>
Salaries (Admin and Support Staff)	90,564	63,672
<i>Admin Salaries as % of Total</i>	<i>2.9%</i>	<i>3.9%</i>
Drugs, supplies and lab tests	2,399,748	1,199,874
<i>Drugs, medical supplies, and tests as % of total</i>	<i>77.6%</i>	<i>73.9%</i>
Other Operating Costs	54,960	54,960
<i>Other Operating costs as % of total</i>	<i>1.8%</i>	<i>3.4%</i>
Regional and Central Level support costs	0	0
<i>Regional/central support costs as % of total</i>	<i>0.0%</i>	<i>0.0%</i>

Non-communicable Disease services have the highest cost (USD 2.2 million) followed by Mental Health (USD 368,071 (Table 5). The high NCD cost is due to the inclusion of chronic diseases, such as Hypertension and Cardio-vascular Disease, which together would come to USD 1.9 million (62% of the total cost).

Table 5. CPHCC costs by program (USD) for 100% and 50% coverage

Cost Break-down by National Program	100% Coverage	50% Coverage
Child Health	56,714	29,312
Nutrition	14,289	7,969
Reproductive Health	284,713	168,108
Communicable Diseases	80,707	42,361
Non-communicable Diseases	2,287,864	1,171,398
Mental Health	368,071	204,480
Immunization	0	0
Health Education	151	85

The normative number of technical staff for this level of facility suggested in the EHSP document is 33. However, based on the time requirements developed by the TWGs for the standard treatment guidelines, a total of 77 would be required for 100% coverage and 42 for 50% coverage (Table 6), with the average number of services per technical staff person per day of 12.8 and 11.7, respectively.

Based on the 50% coverage scenario, additional staff of all types would be needed except for midwives and community health workers. The normative number of four midwives appears to be sufficient. The number of one community health worker needed is much lower than the norm of 10 because the TWGs did not indicate roles for the community health workers when the standard treatment guidelines were developed, with the exception of support for health education and family planning. It is understood that these community health workers are supposed to be salaried health workers who work in the facilities, not in the communities, but this indicates that the role of these community health workers may be unclear.

Table 6. Staffing breakdown

	Norm	100% coverage	50% coverage
Total number of GP	4	12	6
Total number of Gynecologist	1	3	2
Total number of Pediatrician	1	1	1
Total number of Internal Medicine	1	3	2
Total number of Dentist	-	-	-
Total number of Nurse	8	19	10
Total number of Midwife	4	7	4
Total number of Psychosocial Worker	2	15	8
Total number of Community Health Worker	10	2	1
Total number of Laboratory Technician	1	6	3
Total number of Pharmacy Technician	1	9	5
Total number of Nutrition Technician	-	-	-
Total	33	77	42

3.3. PHC Centre

According to the EHSP the catchment population for a PHC Centre should be within the range of 10,000 to 30,000 people. For the cost modeling we assumed a mid-range figure of 20,000 and assumed that there are no other fixed or mobile clinics serving this population. Providing the package of 55 services¹⁰ to the people who need care in a catchment population of 20,000 would result in a total of 109,434 services for 100% coverage and 54,717 for 50% coverage (Table 7).

The average number of services (or encounters) for this facility come to 5.47 per capita (total population) for 100% coverage and 2.74 for 50% coverage. This means that each person in the catchment population would have an average of 5.47 encounters with a health provider (or a health provider team as explained earlier) if coverage is 100%. As in the case of a Comprehensive PHC Centre this number is driven mostly by the high numbers of needed encounters for diabetes, hypertension, asthma/COPD, cardio-vascular disease, depression and psychosis (see Annex C). In addition there would be substantial family planning counseling encounters, male condom encounters and oral contraceptive encounters. These 9 services would account for most of the total number services, mainly because they each involve multiple provider encounters in a year.

¹⁰ Three fewer services than a Comprehensive PHC Centre.

The majority of the services would be curative (60,415 if coverage is 100%) followed by preventive services (49,020).

Table 7. PHC Centre catchment population and services based on 100% and 50% coverage

<i>Basic Statistics</i>	100% Coverage	50% Coverage
Catchment population	20,000	20,000
Community Health Catchment Population (if applicable)	20,000	20,000
Total types of services in full package	55	55
<i>Services: Total and Per Capita</i>	100% Coverage	50% Coverage
Total types of services delivered from the package	55	55
Total number of services provided	109,434	54,717
Average number of services per capita	5.47	2.74
Total Curative services provided	60,415	30,207
Average number of Curative services per capita	3.02	1.51
Total Preventive services provided	49,020	24,510
Average number of Preventive services per capita	2.45	1.23
Total Other (Deliveries) services provided	0	0
Average number of Other (Deliveries) services per capita	0.00	0.00
Total Promotional services provided	0	0
Average number of Promotional services per capita	0.00	0.00

The program with the highest number of services would be Reproductive Health (42,107) followed by Non-communicable Diseases (32,240) and Mental Health (22,092) (Table 8).

Table 8. PHC Centre services by program – 100% and 50% coverage

Services: Total number by National Program	100% Coverage	50% Coverage
Child Health	2,594	1,297
Nutrition	6,935	3,467
Reproductive Health	42,107	21,054
Communicable Diseases	3,168	1,584
Non-communicable Diseases	32,240	16,120
Mental Health	22,092	11,046
Immunization	0	0
Health Education	298	149

The total cost of covering 100% of the catchment population would be USD 1.5 million for one year, while covering 50% would cost USD 0.8 million (Table 9). Most of this would be for curative services. This would come to an average of USD 13.66 per service for 100% coverage and USD 14.68 for 50% coverage^{11 12}. The average cost per capita would be USD 74.76 for 100% coverage and USD 40.16 for 50% coverage.

Table 9. PHC Centre costs (USD) for 100% and 50% coverage

Costs: Total and Per Capita	100% Coverage	50% Coverage
Total cost of all services	1,495,258	803,159
Total Cost at Primary (Ambulatory)	1,495,258	803,159
Total Cost at Secondary (Hospitalization)	0	0
Total Cost at Community	0	0
Cost per service	13.66	14.68
Cost per capita	74.76	40.16
Total cost of Curative services	1,377,417	733,312
Average cost per Curative service	22.80	24.28
Total cost of Preventive services	117,841	69,847
Average cost per Preventive service	2.40	2.85
Total cost of Other (Deliveries) services	0	0
Average cost per Other (Deliveries) service	0.00	0.00
Total cost of Promotional services	0	0
Average cost per Promotional service	0.00	0.00

¹¹ The lower average cost per service for 100% coverage is due to economies of scale (fixed costs spread across more services).

¹² Great caution should be made when comparing figures for average costs across all services since they vary significantly depending on the mix of services.

The resource type with the highest cost would be drugs, supplies and test materials (USD 1.2 million with 100% coverage and USD 0.6 million with 50% coverage) reflecting over 70% of total costs (Table 10). The next highest would be technical staff costs (around 14% – 16% of total costs)¹³.

Table 10. PHC Centre costs by resource type (USD) for 100% and 50% coverage

Break-down of Total Costs	100% Coverage	50% Coverage
Salaries (Technical Staff)	218,106	128,952
<i>Technical Salaries as % of total</i>	<i>14.6%</i>	<i>16.1%</i>
Salaries (Admin and Support Staff)	53,994	44,088
<i>Admin Salaries as % of Total</i>	<i>3.6%</i>	<i>5.5%</i>
Drugs, supplies and lab tests	1,186,078	593,039
<i>Drugs, medical supplies, and tests as % of total</i>	<i>79.3%</i>	<i>73.8%</i>
Other Operating Costs	37,080	37,080
<i>Other Operating costs as % of total</i>	<i>2.5%</i>	<i>4.6%</i>
Regional and Central Level support costs	0	0
<i>Regional/central support costs as % of total</i>	<i>0.0%</i>	<i>0.0%</i>

Under the 100% coverage scenario, Non-communicable Disease services have the highest cost (USD 1.2 million) followed by Mental Health (USD 126 thousand (Table 11). The high NCD cost is due to the inclusion of chronic diseases, such as Hypertension and Cardio-vascular Disease, which together would come to a high percentage of the total cost).

Table 11. PHC Centre costs by program (USD) for 100% and 50% coverage

Cost Break-down by National Program	100% Coverage	50% Coverage
Child Health	32,518	18,904
Nutrition	18,324	15,139
Reproductive Health	116,256	68,736
Communicable Diseases	42,420	23,747
Non-communicable Diseases	1,159,219	602,869
Mental Health	126,353	73,602
Immunization	0	0
Health Education	169	163

The normative number of technical staff for this level of facility suggested in the EHSP document is 21. However, based on the time requirements developed by the TWGs for the standard treatment guidelines, a total of 31 would be required for 100% coverage and 18 for 50% coverage (Table 12), with the average number of services per technical staff person per day of 13.2 and 11.3, respectively.

¹³ In many countries technical staff costs are higher at around 30% of total costs but in this case medicine costs are higher due to the inclusion of chronic NCDs in the EHSP.

Based on the 50% coverage scenario, one GP, one Laboratory Technician, one Pharmacy Technician and one PSW would need to be added. The number of one community health worker needed is much lower than the norm of 6 because the TWGs did not indicate roles for the community health workers when the standard treatment guidelines were developed, with the exception of support for health education and family planning. It is understood that these community health workers are supposed to be salaried health workers who work in the facilities, not in the communities, but this indicates that the role of these community health workers may be unclear.

Table 12. Staffing needs for 100% and 50% coverage

	Norm	100% coverage	50% coverage
Total number of GP	3	7	4
Total number of Gynecologist	-	-	-
Total number of Pediatrician	1	1	1
Total number of Internal Medicine	-	-	-
Total number of Dentist	-	-	-
Total number of Nurse	6	8	4
Total number of Midwife	2	3	2
Total number of Psychosocial Worker	1	4	2
Total number of Community Health Worker	6	1	1
Total number of Laboratory Technician	1	3	2
Total number of Pharmacy Technician	1	4	2
Total number of Nutrition Technician	-	-	-
Total	21	31	18

3.4. PHC Unit

According to the EHSP the catchment population for a PHC Unit should be within the range of 3,000 to 10,000 people. For the cost modeling we assumed a figure of 8,000 (a higher than mid-range figure was chosen to provide a figure that is further from the mid-range for a Mobile PHC and closer to the figure used for a PHC Centre). We assumed that there are no other fixed or mobile clinics serving this population. Providing the package of 55 services¹⁴ to the people who need care in a catchment population of 8,000 would result in a total of 43,960 services for 100% coverage and 21,980 for 50% coverage (Table 13).

¹⁴ The same as at a PHC Centre.

The average number of services (or encounters) for this facility come to 5.49 per capita (total population) for 100% coverage and 2.75 for 50% coverage. This means that each person in the catchment population would have an average 5.49 encounters with a health provider (or a health provider team as explained earlier) if coverage is 100%. As in the case of a Comprehensive PHC Centre this number is driven mostly by the high numbers of needed encounters for diabetes, hypertension, asthma/COPD, cardio-vascular disease, depression and psychosis (see Annex C). In addition there would be substantial family planning counseling encounters, male condom encounters and oral contraceptive encounters. These 9 services would account for most of the total number services, mainly because they each involve multiple provider encounters in a year.

The majority of the services would be curative (24,173) followed by preventive services (19,787).

Table 13. PHC Unit services for 100% and 50% coverage

Basic Statistics	100% Coverage	50% Coverage
Catchment population	8,000	8,000
Community Health Catchment Population (if applicable)	8,000	8,000
Total types of services in full package	55	55
Services: Total and Per Capita	100% Coverage	50% Coverage
Total types of services delivered from the package	55	55
Total number of services provided	43,960	21,980
Average number of services per capita	5.49	2.75
Total Curative services provided	24,173	12,087
Average number of Curative services per capita	3.02	1.51
Total Preventive services provided	19,787	9,893
Average number of Preventive services per capita	2.47	1.24
Total Other (Deliveries) services provided	0	0
Average number of Other (Deliveries) services per capita	0.00	0.00
Total Promotional services provided	0	0
Average number of Promotional services per capita	0.00	0.00

The program with the highest number of services would be Reproductive Health (16,843) followed by Non-communicable Diseases (12,896) and Mental Health (8,844) (Table 14).

Table 14. PHC Unit program services for 100% and 50% coverage

Services: Total number by National Program	100% Coverage	50% Coverage
Child Health	1,038	519
Nutrition	2,774	1,387
Reproductive Health	16,843	8,421
Communicable Diseases	1,267	634
Non-communicable Diseases	12,896	6,448
Mental Health	8,844	4,422
Immunization	0	0
General	298	149

The total cost of covering 100% of the catchment population would be USD 624 thousand for one year, while covering 50% would cost USD 348 thousand (Table 15). Most of this would be for curative services. This would come to an average of USD 14.20 per service for 100% coverage and USD 15.87 for 50% coverage^{15 16}. The average cost per capita would be USD 78.03 for 100% coverage and USD 43.60 for 50% coverage.

Table 15. PHC Unit total costs (USD) for 100% and 50% coverage

Costs: Total and Per Capita	100% Coverage	50% Coverage
Total cost of all services	624,252	348,816
Total Cost at Primary (Ambulatory)	624,252	348,816
Total Cost at Secondary (Hospitalization)	0	0
Total Cost at Community	0	0
Cost per service	14.20	15.87
Cost per capita	78.03	43.60
Total cost of Curative services	567,867	313,963
Average cost per Curative service	23.49	25.98
Total cost of Preventive services	56,385	34,853
Average cost per Preventive service	2.85	3.52
Total cost of Other (Deliveries) services	0	0
Average cost per Other (Deliveries) service	0.00	0.00
Total cost of Promotional services	0	0
Average cost per Promotional service	0.00	0.00

¹⁵ The lower average cost per service for 100% coverage is due to economies of scale (fixed costs spread across more services).

¹⁶ Great caution should be made when comparing figures for average costs across all services since they vary significantly depending on the mix of services.

The resource type with the highest cost would be drugs, supplies and test materials (USD 474 thousand with 100% coverage and USD 237 thousand with 50% coverage) reflecting over 65% of total costs (Table 16). The next highest would be technical staff costs (around 14% – 16% of total costs)¹⁷.

Table 16. PHC Unit resource costs (USD) for 100% and 50% coverage

Break-down of Total Costs	100% Coverage	50% Coverage
Salaries (Technical Staff)	92,934	58,536
<i>Technical Salaries as % of total</i>	<i>14.9%</i>	<i>16.8%</i>
Salaries (Admin and Support Staff)	37,086	33,264
<i>Admin Salaries as % of Total</i>	<i>5.9%</i>	<i>9.5%</i>
Drugs, supplies and lab tests	474,432	237,216
<i>Drugs, medical supplies, and tests as % of total</i>	<i>76.0%</i>	<i>68.0%</i>
Other Operating Costs	19,800	19,800
<i>Other Operating costs as % of total</i>	<i>3.2%</i>	<i>5.7%</i>
Regional and Central Level support costs	0	0
<i>Regional/central support costs as % of total</i>	<i>0.0%</i>	<i>0.0%</i>

Under the 100% coverage scenario, Non-communicable Disease services have the highest cost (USD 476 thousand) followed by Mental Health (USD 58 thousand) (Table 17). The high NCD cost is due to the inclusion of chronic diseases, such as Hypertension and Cardio-vascular Disease, which together would come to a high percentage of the total cost).

Table 17. PHC Unit program costs (USD) for 100% and 50% coverage

Cost Break-down by National Program	100% Coverage	50% Coverage
Child Health	12,182	6,874
Nutrition	3,128	1,898
Reproductive Health	55,301	33,923
Communicable Diseases	18,330	11,238
Non-communicable Diseases	476,688	256,986
Mental Health	58,266	37,548
Immunization	0	0
General	355	350

The normative number of technical staff for this level of facility suggested in the EHSP document is 13. However, based on the time requirements developed by the TWGs for the standard treatment guidelines, a total of 14 would be required for 100% coverage and 9 for 50% coverage (Table 18), with the average number of services per technical staff person per day of 11.7 and 9.1, respectively.

¹⁷ In many countries technical staff costs are higher at around 30% of total costs but in this case medicine costs are higher due to the inclusion of chronic NCDs in the EHSP.

Based on the 50% coverage scenario, the norm would provide more than enough staff. The number of one community health worker needed is lower than the norm of 4 because the TWGs did not indicate roles for the community health workers when the standard treatment guidelines were developed, with the exception of support for health education and family planning. It is understood that these community health workers are supposed to be salaried health workers who work in the facilities, not in the communities, but this indicates that the role of these community health workers may be unclear.

Table 18. Staffing breakdown – norms, 100% and 50% coverage

	Norm	100% coverage	50% coverage
Total number of GP	2	3	2
Total number of Gynecologist	-	-	-
Total number of Pediatrician	-	-	-
Total number of Internal Medicine	-	-	-
Total number of Dentist	-	-	-
Total number of Nurse	3	3	2
Total number of Midwife	1	2	1
Total number of Psychosocial Worker	1	2	1
Total number of Community Health Worker	4	1	1
Total number of Laboratory Technician	1	1	1
Total number of Pharmacy Technician	1	2	1
Total number of Nutrition Technician	-	-	-
Total	13	14	9

3.5. Mobile PHC

According to the EHSP the catchment population for a Mobile PHC Clinic should be within the range of 500 to 10,000 people. For the cost modeling we assumed a figure of 5,000. We assumed that there are no other fixed or mobile clinics serving this population. Providing the package of 51 services¹⁸ to the people who need care in a catchment population of 5,000 would result in a total of 27,562 services for 100% coverage and 13,781 for 50% coverage (Table 19).

The average number of services (or encounters) for this facility come to 5.51 per capita (total population) for 100% coverage and 2.76 for 50% coverage. This means that each person in the

¹⁸ Four fewer that at a PHC Unit.

catchment population would have an average 5.51 encounters with a health provider (or a health provider team as explained earlier) if coverage is 100%. As in the case of a Comprehensive PHC Centre this number is driven mostly by the high numbers of needed encounters for diabetes, hypertension, asthma/COPD, cardio-vascular disease, depression and psychosis (see Annex C). In addition there would be substantial family planning counseling encounters, male condom encounters and oral contraceptive encounters. These 9 services would account for most of the total number services, mainly because they each involve multiple provider encounters in a year. The majority of the services would be curative (15,084) followed by preventive services (12,478) if coverage is 100%.

When developing the EHSP the TWGs determined that the mobiles do not have the capacity to provide the full IMCI services package. However, they should provide treatment of diarrhea and lower and upper respiratory infections and refer children where further diagnosis and treatment are needed according to the IMCI package.

There are no pharmacists and we, therefore, assumed that medicines are dispensed by the medical doctor or nurse. Only a limited range of rapid diagnostic tests are supposed to be available in the mobile clinics and samples are not taken for testing at facilities due to the challenges of storage and transport. Patients who need laboratory tests other than rapid ones are referred to a facility. The services that were costed at the Mobile PHC clinic do not include the cost of laboratory services.

The package description indicates that Thalassemia can be treated at a mobile clinic and this cost has been included. However since transfusions are needed this seems unlikely.

Table 19. Mobile PHC services at 100% and 50% coverage

<i>Basic Statistics</i>	100% Coverage	50% Coverage
Catchment population	5,000	5,000
Community Health Catchment Population (if applicable)	5,000	5,000
Total types of services in full package	51	51
<i>Services: Total and Per Capita</i>	100% Coverage	50% Coverage
Total types of services delivered from the package	51	51
Total number of services provided	27,562	13,781
Average number of services per capita	5.51	2.76
Total Curative services provided	15,084	7,542
Average number of Curative services per capita	3.02	1.51
Total Preventive services provided	12,478	6,239
Average number of Preventive services per capita	2.50	1.25
Total Other (Deliveries) services provided	0	0
Average number of Other (Deliveries) services per capita	0.00	0.00
Total Promotional services provided	0	0
Average number of Promotional services per capita	0.00	0.00

If coverage is 100%, the program with the greatest number of services would be Reproductive Health (10,527), followed by Non-communicable Diseases (8,060) and Mental Health (5,532).

Table 20. Mobile PHC services by program at 100% and 50% coverage

Services: Total number by National Program	100% Coverage	50% Coverage
Child Health	649	324
Nutrition	1,705	852
Reproductive Health	10,527	5,263
Communicable Diseases	792	396
Non-communicable Diseases	8,060	4,030
Mental Health	5,532	2,766
Immunization	0	0
Health Education	298	149

The total cost of covering 100% of the catchment population would be USD 377 thousand for one year, while covering 50% would cost USD 218 thousand (Table 21). Most of this would be for curative services. This would come to an average of USD 13.70 per service for 100% coverage and USD 15.87 for 50% coverage^{19 20}. The average cost per capita would be USD 75.54 for 100% coverage and USD 43.74 for 50% coverage.

Table 21. Mobile PHC costs at 100% and 50% coverage (USD)

Costs: Total and Per Capita	100% Coverage	50% Coverage
Total cost of all services	377,686	218,723
Total Cost at Primary (Ambulatory)	377,686	218,723
Total Cost at Secondary (Hospitalization)	0	0
Total Cost at Community	0	0
Cost per service	13.70	15.87
Cost per capita	75.54	43.74
Total cost of Curative services	341,563	192,086
Average cost per Curative service	22.64	25.47
Total cost of Preventive services	36,123	26,637
Average cost per Preventive service	2.89	4.27
Total cost of Other (Deliveries) services	0	0
Average cost per Other (Deliveries) service	0.00	0.00
Total cost of Promotional services	0	0
Average cost per Promotional service	0.00	0.00

¹⁹ The lower average cost per service for 100% coverage is due to economies of scale (fixed costs spread across more services).

²⁰ Great caution should be made when comparing figures for average costs across all services since they vary significantly depending on the mix of services.

The resource type with the highest cost would be drugs, supplies and test materials (USD 281 thousand with 100% coverage and USD 140 thousand with 50% coverage) reflecting over 60% of total costs (Table 22). The next highest would be technical staff costs (around 11% – 13% of total costs)²¹.

Table 22. Mobile PHC resource costs at 100% and 50% coverage (USD)

Break-down of Total Costs	100% Coverage	50% Coverage
Salaries (Technical Staff)	45,036	28,458
<i>Technical Salaries as % of total</i>	<i>11.9%</i>	<i>13.0%</i>
Salaries (Admin and Support Staff)	31,764	29,922
<i>Admin Salaries as % of Total</i>	<i>8.4%</i>	<i>13.7%</i>
Drugs, supplies and lab tests	281,086	140,543
<i>Drugs, medical supplies, and tests as % of total</i>	<i>74.4%</i>	<i>64.3%</i>
Other Operating Costs	19,800	19,800
<i>Other Operating costs as % of total</i>	<i>5.2%</i>	<i>9.1%</i>
Regional and Central Level support costs	0	0
<i>Regional/central support costs as % of total</i>	<i>0.0%</i>	<i>0.0%</i>

Under the 100% coverage scenario, Non-communicable Disease services have the highest cost (USD 289 thousand) followed by Reproductive Health (USD 34 thousand) (Table 23). The high NCD cost is due to the inclusion of chronic diseases, such as Hypertension and Cardio-vascular Disease, which together would come to a high percentage of the total cost).

Table 23. Mobile PHC program costs at 100% and 50% coverage (USD)

Cost Break-down by National Program	100% Coverage	50% Coverage
Child Health	7,633	4,406
Nutrition	1,157	915
Reproductive Health	34,748	25,411
Communicable Diseases	12,995	8,145
Non-communicable Diseases	289,411	156,348
Mental Health	31,173	22,935
Immunization	0	0
Health Education	569	564

The normative number of technical staff for this level of facility suggested in the EHSP document is 6. However, based on the time requirements developed by the TWGs for the standard treatment guidelines, a total of 7 would be required for 100% coverage and 5 for 50% coverage (Table 24), with the average number of services per technical staff person per day of 14.7 and 10.3, respectively.

²¹ In many countries technical staff costs are higher at around 30% of total costs but in this case medicine costs are higher due to the inclusion of chronic NCDs in the EHSP.

Based on the 50% coverage scenario, the norm would provide more than enough staff. As for the fixed facilities the role of the community health workers needs to be defined.

Table 24. Mobile PHC staffing breakdown – normative, 100% and 50% coverage

	Norm	100% coverage	50% coverage
Total number of GP	1	2	1
Total number of Gynecologist	-	-	-
Total number of Pediatrician	-	-	-
Total number of Internal Medicine	-	-	-
Total number of Dentist	-	-	-
Total number of Nurse	1	2	1
Total number of Midwife	1	1	1
Total number of Psychosocial Worker	1	1	1
Total number of Community Health Worker	2	1	1
Total number of Laboratory Technician			
Total number of Pharmacy Technician			
Total number of Nutrition Technician	-	-	-
Total	6	7	5

3.6. Summary

The results of the costing for both 100% and 50% coverage are summarized in Table 25. The actual coverage of the NGO facilities is not clear due to uncertainties over catchment populations and shifting numbers of IDPs and an assessment of current coverage rates would be very useful. However it seems likely for some of the NGO data that actual coverage may be far less than 100% and therefore the costs for 50% coverage may be the most realistic.

The cost per service would not vary much according to the catchment population but the cost per capita would vary directly with the catchment population. The normative technical staffing numbers appear reasonable for 50% coverage except for the Comprehensive PHC Centre, where they may be low.

Table 25. Summary of catchment population, services, costs and staffing for 100% coverage

	Mobile PHC	PHC Unit	PHC Centre	Comprehensive PHC Centre
Catchment	5,000	8,000	20,000	40,000
Types of service	51	55	55	58
100% coverage				
Number of services	27,562	43,960	109,434	263,794
Services per capita	5.51	5.49	5.47	6.59
Total cost	\$377,686	\$624,252	\$1,495,258	\$3,092,508
Cost per capita	\$75.54	\$78.03	\$74.76	\$77.31
Technical staff norm	6	13	21	33
Technical staff needed	7	14	31	77
50% coverage				
Number of services	13,781	21,980	54,717	131,897
Services per capita	2.76	2.75	2.74	3.30
Total cost	\$218,723	\$348,816	\$803,159	\$1,623,714
Cost per capita	\$43.74	\$43.60	\$40.16	\$40.59
Technical staff norm	6	13	21	33
Technical staff needed	5	9	18	42

Given that some of the cost elements, such as laboratory reagents, have not yet been costed and that immunizations are not included, the costs are probably somewhat understated but it is not unreasonable to assume that adding these costs would not result in more than 10% extra costs. This would make the cost per capita approximately USD 85 for 100% coverage and USD 45 for 50% coverage.

Again, it is worth noting that the cost for each facility assumes that it is the only one serving a given catchment population. If, however, a Comprehensive PHC covering 40,000 people has PHC Units and Mobile PHCs serving the same catchment population then the cost of those PHC Units and Mobile PHCs substitute to some degree for the Comprehensive PHC Centre cost and should not be added to it.

The estimated times needed for each service and the unit cost of each service for a Comprehensive PHC Centre are shown in Annexes D and E. These times and unit costs should not vary much across the different levels of care, the only differences being the types of technical staff who provide the service (e.g., no specialists at lower levels) and the operating costs. The service with the lowest cost under the 100% coverage scenario (Scenario C) would be Growth Monitoring at USD 0.25 whereas the service with the highest cost would be Inpatient Therapeutic Treatment for a severely malnourished child with complications at USD 267.

4. Limitations

A number of limitations should be taken into account.

- a. It is understood that the NGOs sometimes have to buy medicines and supplies in Turkey where prices can be higher than the international prices used in this costing. If this happens to a significant degree the costs of the package will be higher.²²
- b. Immunizations are not yet included in the costing as they are still being defined and are not currently being provided by the NGOs.
- c. Some medicines which are recommended by the doctors were not included in the essential medicines list and need to be added and priced.
- d. Prices for laboratory reagents could not be found in time for completion of the analysis. However, the time of the laboratory technicians have been included and the impact of not including reagent costs on the total costs is likely to be small.
- e. The cost of X-rays and Ultrasound imaging has not been included.
- f. The operating costs have not been increased under the 100% scenario to reflect the increase in services and staffing.
- g. The costs of procuring equipment or construction of permanent or temporary building are not including in the costs, which are intended to represent recurrent costs only.
- h. The estimates of need do not take into account that some of the patients at the PHC Centre and Comprehensive PHC Centre will be referred from lower level facilities.
- i. The costing does not include the distribution of individual clean delivery kits in areas of risk of home delivery, which according to the EHSP are supposed to be provided by Mobile Clinics, PHC Units and PHC Centres.
- j. The estimates do not take into account any savings in the time spend by a provider team during an encounter or in medicines, supplies or tests. Co-morbidity is most likely to occur in the case of diabetes, hypertension and heart disease. It is estimated that 60% of patients with diabetes suffer from hypertension and 55% suffer from chronic heart disease. Also 27% of patients with hypertension suffer from diabetes and 22% suffer from chronic heart disease. While 50% of patients with chronic heart disease suffer from diabetes and 75% suffer from hypertension²³.

5. Discussion

A desk study of Essential Packages of Health Services in humanitarian crises (Modol and Colombo) references the costs of such packages in other studies. The most recent of these is the Commission for Macroeconomics and Health, 2001, which estimated annual per capita costs in 2001 prices of USD 36 to

²² Reportedly, prices in Syria are lower than in Turkey but there are questions about the quality of some of the medicines.

²³ Dr Ahmad Fouzia, AID-SITE.

USD 40 in low income countries, USD 39 in lower middle-income countries and USD 331 in upper middle-income countries. Comparisons of these figures with the findings of this study of USD are difficult, however, without specific knowledge of the contents of the package or the levels of care at which they are provided. In particular the setting of the highest level of care for the northern Syria package of a comprehensive health centre with some, but limited, inpatient care and the inclusion of costly Non-Communicable Diseases and significant needs for Mental Health services make realistic comparisons with other studies difficult.

MSH has conducted a number of cost studies of primary health care service packages over the last 10 years, including studies in seven countries - Cambodia, Liberia, Rwanda, Burundi, Haiti, Malawi and Uganda (Collins 2009a, Collins 2009b, Collins 2011, Cros 2011, Gueye 2012, Jarrah 2011a, Jarrah 2011b). The cost per capita varied considerably across the seven countries for a number of reasons. A comparison of the lowest and highest cost per capita of providing the full package of services to all the catchment population can help to explain the reasons for the differences. Liberia would have the lowest cost per capita with USD 3.68. With a catchment population of 22,662 and only 36 services in the package the normative number of services per capita would be 1.98 and the average cost per services would be USD 1.86. It should be taken into account, however, that Liberia had very low operating costs (USD 0.04 per capita), which may be an under-estimate.

Malawi, however, has the highest cost per capita (USD 15.28). It has a catchment population of 25,012 and 51 services in the package, with the normative number of 2.54 services per capita and an average cost per service of USD 6.01. The larger package, higher normative utilization per capita and the higher cost per services are the reasons why the average cost per capita is higher in Malawi than in Liberia. The higher cost per service in Malawi is driven by the high cost of drugs (USD 12.53) per capita. Malawi also had a higher operating cost at USD 1.07 per capita.

The cost of the package for northern Syria is much higher than the costs of the packages in any of the above countries for several reasons. Firstly, the health needs of the people of northern Syria are much greater than in most other countries due to the crisis situation. Most families are affected by physical and mental trauma and many families are displaced. Secondly the northern Syria package includes high numbers of high-cost Non-communicable Disease and Mental Health treatments which were not included in the packages in the other countries. Thirdly, the cost of medicines and supplies is higher in 2016 than in the years when the other country studies were conducted.

To estimate the costs of including the treatment of the eight chronic illnesses in the package the Comprehensive PHC Centre model was run without them. The impact of removing the eight services results can be seen in Table 26 and 27. Firstly the total number of services under the 100% coverage scenario is only 129,714 (3.24 per capita) compared with 263,794 (6.59 per capita) if they are included. Secondly the total cost under the 100% scenario is only USD 659,438 (USD 17.34 per capita) compared with USD 3.0 million (USD 77.19 per capita) if they are included. Without the chronic illnesses the figures for northern Syria are within the range of PHC per capita costs from the other country studies.

Table 26. Comprehensive PHC Centre services without chronic illnesses – 100% and 50% coverage

Basic Statistics		
Catchment population	40,000	40,000
Community Health Catchment Population (if applicable)	40,000	40,000
Total types of services in full package	58	58
Services: Total and Per Capita		
Total types of services delivered from the package	50	50
Total number of services provided	129,714	64,857
Average number of services per capita	3.24	1.62
Total Curative services provided	25,137	12,569
Average number of Curative services per capita	0.63	0.31
Total Preventive services provided	103,921	51,961
Average number of Preventive services per capita	2.60	1.30
Total Other (Deliveries) services provided	655	328
Average number of Other (Deliveries) services per capita	0.02	0.01
Total Promotional services provided	0	0
Average number of Promotional services per capita	0.00	0.00

Table 27. Comprehensive PHC Centre costs without chronic illnesses – 100% and 50% coverage (USD)

Costs: Total and Per Capita		
Total cost of all services	693,498	411,309
Total Cost at Primary (Ambulatory)	673,759	397,818
Total Cost at Secondary (Hospitalization)	19,738	13,491
Total Cost at Community	0	0
Cost per service	5.35	6.34
Cost per capita	17.34	10.28
Total cost of Curative services	371,269	207,360
Average cost per Curative service	14.77	16.50
Total cost of Preventive services	302,490	190,457
Average cost per Preventive service	2.91	3.67
Total cost of Other (Deliveries) services	19,738	13,491
Average cost per Other (Deliveries) service	30.13	41.18
Total cost of Promotional services	0	0
Average cost per Promotional service	0.00	0.00

The CORE Plus tool was satisfactory for the purposes of conducting the analysis. The normative costing requires estimation of incidence/prevalence rates and the development of standard treatment guidelines, all of which took considerable time and effort of the Technical Working Groups since there is little available data and the members were not all familiar with this type of exercise. Nevertheless they all considered this process very useful and helpful for their future work. Developing the standard treatment guidelines jointly by the NGOs was also a major additional step in standardizing service delivery.

It also took time and effort to convert the elements of the package into a list of services that could be costed and to collect the prices of medicines and supplies. The entry of the data in the tool was relatively easy and fast. Once the model for the Comprehensive PHC Centre was developed, adjustments to it were simple and fast, and its value was demonstrated when it was necessary to recalculate the

costs without the chronic illness treatments, which took less than five minutes. The models for the PHC Centre, PHC Unit and Mobile PHC Clinic were developed quickly by copying the Comprehensive PHC Centre model and making a few adjustments.

The NGOs expressed a desire to receive training in the tool so they could plan their services and estimate costs and revenues in future. Adaptation of the tool and models to the needs of the NGOs should not be difficult since only a few adjustments should be needed, such as:

- Entering zero for any services from the package that they do not provide (or add any other services, such as dentistry);
- Adjusting the standard salaries to actual salaries;
- Adjusting any prices of medicines and supplies as needed;
- Entering the actual numbers of services provided and adjusting the targets as needed;

Estimating the costs of a network of overlapping levels of facilities will be a little more difficult. An example of this would be where a Comprehensive PHC Centre covering 40,000 people has several PHC Centres, PHC units and Mobile PHC clinics operating within the same catchment area. In such a case costing the actual numbers of services provided or targeted increases in those services would not be difficult. However, some of the standard treatment guidelines may need to be adjusted to reflect the fact that some of the services at the higher levels facilities would be a mixture of primary (first visits) and secondary (referral) visits. However, using the catchment populations to estimate the need or to compare actual with needed coverage would have to take into account the overlapping catchment populations where a lower level facility sees primary cases and the higher level facility sees primary cases from its own immediate catchment population as well as secondary cases which are referred from other facilities.

6. Conclusions

Significant resources are required to provide health services in northern Syria. Given that some of the cost elements, such as laboratory reagents, have not yet been costed and that immunizations are not included, the current cost estimates may be somewhat understated but it is not unreasonable to assume that adding these elements would not result in more than 10% extra costs. This would make the cost per capita approximately USD 85 for 100% coverage and USD 45 for 50% coverage.

Completing the cost estimates so that they can be used for more accurate estimates by the NGOs requires some additional steps:

- A careful final review of incidence/prevalence rates and standard treatment guidelines, including the roles of different technical staff (especially the specialists and community health workers). This is especially important for the chronic illnesses due to the high service and cost drivers;
- The costing of laboratory reagents;

- Review of medicine and supplies prices and consideration of adding some medicines to the essential medicines list as suggested by the doctors during the TWG meetings;
- Adding the costs of X-rays and ultrasound imaging – staffing and supplies;
- Adding immunization costs.
- Taking into account standard treatment guidelines for referral services, as opposed to primary services.
- A more in-depth analysis of operating costs across the NGOs.

It is recognized that the availability of financing for health services in northern Syria is limited so it is essential that resources be used as cost-effectively and efficiently as possible. It is therefore appropriate to offer some recommendations, which are as follows:

- Most of the costs relate to medicines and it would be important to conduct a review of the selection and procurement of medicines to see where costs can be saved.
- Based on the actual catchment figures provided by some NGOs there may be a need for rationalization of the location of facilities and mobiles. An assessment of current coverage would be an important part of that exercise.
- Given the reported high prevalence of NCDs and Mental Health illnesses and the high cost of treating them, and the need to expand maternal and child services there may be a need to prioritize selected services.
- Based on reported shortages of doctors and the need to save costs consideration should be given to task shifting to lower levels of staff including community health workers.

The above and other challenges would be best addressed in a strategic plan for the cost-effective and affordable provision of priority services over the next 3 years.

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8. Annexes

Annex A. Mobile and Facility Descriptions

The following are copied from the EHSP document to serve as reference points for the costing.

Mobile PHC Clinic

These services are provided according to the catchment population to areas lacking sufficient health facilities, such as in IDP camps, IDP sites in communities or remote communities. Clinic days will be linked where possible to community gatherings, such as market days and take place in public buildings, such as schools or town halls and offered accordingly: for 500 persons a three-hour clinic weekly in one or two sites; for 1.000 persons a half-day clinic bi-weekly; for 2.000 persons a full-day clinic bi-weekly; and for 3.000 to 10.000 persons a daily clinic five times per week

The focus of the services is on health education and promotion through information, dissemination of IEC material and support to community based health interventions through community mobilization. Specific activities include dissemination of supplements, contraceptives and home delivery sets, as well as screening and counselling for a variety of conditions, such as anaemia, non-communicable disease, nutrition status, antenatal and postnatal health and mental well - being. PHC staff diagnose, manage and treat according to defined protocols communicable and non-communicable diseases, emergency and psychosocial first aid, and manage the appropriate referral. The equipment and supplies including essential drugs will enable basic medical investigations and treatment, as well as some serology, chemistry and haematology, which will be mainly based on blood or urine sticks for HB - and glucometers in the mobile clinics.

Each district needs to have the appropriate number of dedicated mobile team consisting of a general practitioner, a nurse who will also handle with help of the CHW the registration and triage, a midwife, a psychosocial worker and the driver, who will be able to support the crowd control and registration. The operational set up of the clinic should include the sufficiently large van, equipped with radio communication, space for staff, basic furniture for setting up the registration, triage, treatment and consultation zones and if required, gangways or ramps for mobility-restricted people. Basic equipment, consumables, diagnostic kits and medication will be available according to the standard list. Patient records will be kept by the medical team and reporting done according to the HMIS guide-lines.

Table 28. Mobile PHC Clinic features

Population covered	500 -10.000
General services	Health education and promotion, counselling, distribution of IEC materials and supplements Referral to PHC Comprehensive Centre and SHC
Preventive services	
<i>Communicable disease and EWARN:</i> hygiene education; provision of PPE; infection prevention and control; basic surveillance activities according to protocols	

<i>Child health:</i> screening; EPI optional	
<i>Reproductive health:</i> Dissemination of IEC, i.e. on pregnancy danger signs and family planning; ANC; PNC; Family planning; GBV; screening for MUAC and anaemia; Tetanus Immunisation	
<i>Mental health:</i> Psychoeducation in communities, schools and mosques; MHPSS counselling and Psychological First Aid	
<i>Nutrition:</i> IEC and counselling on exclusive breastfeeding and complimentary feeding IYCF; screening MUAC and bi-pedal oedema	
<i>NCD:</i> Counselling on healthy lifestyle and NCD prevention; screening for hypertension and diabetes	
Curative services	
<i>Communicable disease:</i> Case management according to protocols	
<i>Child health:</i> distribution of supplements (Iron, Vitamin A and D); management of common childhood communicable diseases (IMCI)	
<i>Reproductive health:</i> Management of pregnancy, maternal and neonatal complications; syndromic management of STIs; distribution of supplements; clinical management of rape survivors (CMR)	
<i>Mental health:</i> Diagnosis and management according to mhGAP; and psychosocial management of rape victims	
<i>Nutrition:</i> Case management and distribution of supplements; care of non-breastfed and malnourished child; CMAM according to protocol (IYCF)	
<i>NCD:</i> NCD diagnosis and management of illness according to PEN; basic management of poisoning and overdose	
Diagnostic services	RDT: Haemoglobin; Glucose; Protein; Pregnancy
Laboratory and other equipment	Standard PHC equipment; Sonic Aid; PPE; delivery sets; basic autoclave
Essential drugs	Analgesics, Antiallergics, Antidotes, Anthelmintics, Antibacterials, Anticonvulsants, Antifungals, Antianaemics, selected cardiovascular drugs according to PEN, topicals, antiseptics, essential psychotropic drugs, contraceptives, selected supplements (vitamins),
Medical staff	General practitioner (1), Nurse (1), Midwife (1), Psycho-social worker (1) Community health worker (2)

PHC Unit

The entry point into the public health service will be the PHC Unit, situated at strategic places within the sub-districts, serving 3.000 to 10.000 people five full days a week. It will provide the links to higher level of referral and emergency services and offer basically the same services as the mobile clinic but with additional diagnostic and treatment capacity to cover a broader spectrum of health interventions.

The clinical staff will include two general practitioners, four community health workers, three nurses, one midwife and one psycho-social worker. Additionally, a dentist, a pharmaceutical assistant and a laboratory technician may be added.

Basic equipment, consumables, diagnostic kits and medication will be available according to the standard list. Sampling sets and surveillance kits for Type A diseases, various media and RDTs will be

available in the PHC Units as the staff will be responsible for the sample referrals to the surveillance laboratories and reporting on the prioritizes diseases under the early warning system.

Patient records will be kept by the medical team and reporting done according to the HMIS guidelines.

The PHC unit could be located in a pre-fabricated container or in any other allocated building and comprise the following zones/rooms, accessible by gangways or ramps for mobility-restricted people if required: waiting area, which can also be used as health and hygiene education place; registration / Triage zone; Emergency Room for emergency care, minor trauma treatment, short term observation; Procedure Room for ORS, Vaccination, etc.; Pharmacy; Laboratory; several consultation rooms for the various clinics; and staff and store room.

Table 29. PHC Unit features

Population covered	3.000-10.000
General services	Health education and promotion, counselling, distribution of IEC materials and supplements Referral to PHC Comprehensive Centre and SHC
Preventive services	
<i>Communicable disease and EWARN:</i> hygiene education; provision of PPE; infection prevention and control according to protocols; sampling of specimen for Type A diseases and referral to surveillance laboratory;	
<i>Child health:</i> screening; MUAC; EPI	
<i>Reproductive health:</i> Dissemination of IEC, i.e. on pregnancy danger signs and family planning; ANC; PNC; Family planning, ; MUAC and anaemia screening; Tetanus Immunisation	
<i>Mental health:</i> Psychoeducation in communities, schools and mosques; MHPSS counselling and Psychosocial First Aid	
<i>Nutrition:</i> IEC and counselling on exclusive breastfeeding and complimentary feeding; screening MUAC and pedal oedema;	
<i>NCD:</i> Counselling on healthy lifestyle and NCD prevention; screening for hypertension	
Curative services	
<i>Communicable disease:</i> Case management according to protocols	
<i>Child health:</i> distribution of supplements (Iron, Vitamin A and D); management of common childhood communicable diseases; IMCI	
<i>Reproductive health:</i> Management of pregnancy, maternal and neonatal complications; syndromic management of STIs; distribution of supplements; clinical management of rape survivors (CMR)	
<i>Mental health:</i> Diagnosis and management according to mhGAP; and psychosocial management of rape survivors	
<i>Nutrition:</i> Case management and distribution of supplements; care of non-breastfed and malnourished child; CMAM according to protocol (IYCF)	
<i>NCD:</i> NCD diagnosis and management of illness according to PEN; basic management of poisoning and overdose	
Diagnostic services	haematology; chemistry; serology

Laboratory and other equipment	Standard PHC and basic laboratory including cold chain equipment; PPE; delivery sets; Surveillance Lab Kit; RDT and various transport media; basic IT
Essential drugs	Analgesics, Antiallergics, Antidotes, Antihelminthics, Antibacterials, Anticonvulsants, Antifungals, Antianaemics, selected cardiovascular drugs, topicals, antiseptics, drugs for mental and behavioural disorders, contraceptives, selected supplements (vitamins), and additionally: IMCI protocol drugs, emergency contraception, medication for Diabetes including Insulin
Medical staff	General practitioner (2), Nurse (3), Midwife (1), Psycho-social worker (1) Community health worker (4), Lab technician (1), Dentist (1), Pharmacist (1)

PHC Centre

The PHC centre will be located in more populous agglomerations and cover up to 30.000 persons. Outpatient services will be provided daily during weekdays with on-call services during the night and weekend. Nutrition, child health, reproductive health, NCD and MH&PSS services are available to the same extent as in the PHC Unit, but certain screening programmes and vaccinations are additional services of the PHC centres, as well as the three 24h/7d - observation beds. Severely ill patients will be stabilized and referred to secondary or tertiary care hospitals. Patient records will be kept by the medical team and reporting done according to the HMIS guidelines.

The number of doctors and nurses is extended and staff includes a pharmacist, a dentist and more auxiliary staff. Additional nursing staff will cover the 8 h shifts for in-patients. Also, a wider range of diagnostic equipment and treatment is available.

The PHC centre should preferably be located in a dedicated purpose-built construction with gangways or ramps for mobility-restricted people, and comprise the following zones/rooms: Waiting area, which can also be used as health and hygiene education place; Registration / Triage zone; Emergency Room for emergency care, minor trauma treatment, short term observation; Procedure Room for ORS, Vaccination, etc.; Pharmacy; Laboratory, Several consultation rooms for the various clinics; Staff and store room; and two in-patient rooms with up to four beds (also for family members).

Table 30. PHC Centre features

Population covered	10.000-30.000
General services	Health education and promotion, counselling, distribution of IEC materials and supplements Referral to PHC Comprehensive Centre and SHC
Preventive services	
<i>Communicable disease and EWARN:</i> hygiene education; provision of PPE; infection prevention and control; screening; sampling of specimen for Type A diseases and referral to surveillance laboratory;	
<i>Reproductive health:</i> Dissemination of IEC, i.e. on pregnancy danger signs and family planning; ANC; PNC; Family planning; GBV; screening for MUAC and anaemia; Tetanus Immunisation	

<i>Child health:</i> screening; MUAC, EPI	
<i>Nutrition:</i> IEC and counselling on exclusive breastfeeding and complimentary feeding; screening MUAC and pedal oedema;	
<i>Mental health:</i> Psychoeducation in communities, schools and mosques; MHPSS counselling and First Aid	
<i>NCD:</i> Counselling on healthy lifestyle and NCD prevention and screening for hypertension; the main focus is on curative services	
Curative services	
<i>Communicable disease:</i> Case management according to protocols; vaccinations; screening	
<i>Child health:</i> distribution of supplements (Iron, Vitamin A and D); management of common childhood communicable diseases; IMCI	
<i>Reproductive health:</i> Management of pregnancy, maternal and neonatal complications; syndromic management of STIs; distribution of supplements; clinical management of rape survivors (CMR)	
<i>Mental health:</i> Diagnosis and management according to mhGAP; psychosocial management of rape survivors;	
<i>Nutrition:</i> Case management and distribution of supplements; care of non-breastfed and malnourished child; CMAM according to protocol	
<i>NCD:</i> NCD diagnosis, management and treatment according to PEN and further expanded areas of NCD; management of poisoning and overdose;	
Diagnostic services	haematology; chemistry; serology; bacteriology;
Laboratory and other equipment	Standard PHC and basic laboratory including cold chain equipment; PPE; delivery sets; Surveillance Lab Kit; RDT and various transport media; basic IT
Essential drugs	In addition to the drugs of the PHC units: anaesthetics and injectable solutions (i.e. glucose, NaCl), greater variety of drugs for anaphylaxis, antibiotics (including TB drugs), cytotoxics, hormones and anti-hormones, broader range of drugs for NCD
Medical staff	General practitioner (3), Nurse (6), Midwife (2), Psycho-social worker (1) Community health worker (6), Lab technician (1), Dentist (1), Pharmacist (1), Specialist Paediatrician or Internal Medicine (1)

Comprehensive PHC Centre

The CPHC centre will be located in sub-districts with reduced access to a secondary or tertiary care facility and will cover up to 50,000 people. In addition to the daily outpatient services of the standard EPHC packages, a 24/7 basic obstetric, neonatal and abortion care will be provided. Normal deliveries and - if required - vacuum extraction will be performed, MVA, minor surgery and application of intra-uterine devices. Extended diagnostic, laboratory and clinical services will be provided through specialist clinics, such as gynaecology (i.e. cervical cancer screening), paediatrics and internal medicine. Patients with perinatal complications requiring Caesarean Sections, blood transfusions, neonatal intensive care will be referred to the district hospital. Staff is accordingly extended and will include four trained midwives and several visiting or resident specialists. Also, a wider range of diagnostic equipment and treatment is available, such as a portable X-Ray machine.

The PHC centre should preferably be located in a dedicated purpose-built construction with gangways or ramps for mobility-restricted people, and comprise the following zones/rooms: Waiting area, which can also be used as health and hygiene education place; Registration / Triage zone; Emergency Room for emergency care, minor trauma treatment, short term observation; Procedure Room for ORS, Vaccination, etc.; Pharmacy; Laboratory; Several consultation rooms for the various clinics and specialists; Staff and store room; X-Ray room; two in-patient rooms with up to four beds (also for family members); one fully equipped labour room; and one antenatal and one post-natal in-patient room with four beds each.

Table 31. Comprehensive PHC Centre features

Population covered	30.000-50.000
General services	Health education and promotion, counselling, distribution of IEC materials and supplements Referral to PHC Comprehensive Centre and SHC
Preventive services	
<i>Communicable disease and EWARN:</i> hygiene education; provision of PPE; infection prevention and control; screening; sampling of specimen for Type A diseases and referral to surveillance laboratory;	
<i>Reproductive health:</i> Dissemination of IEC, i.e. on pregnancy danger signs and family planning; ANC; PNC; Family planning; GBV; screening for MUAC and anaemia; Tetanus Immunisation, cervical cancer screening,	
<i>Child health:</i> screening; MUAC, EPI	
<i>Nutrition:</i> IEC and counselling on exclusive breastfeeding and complimentary feeding; screening MUAC and pedal oedema; postpartum initiation of breastfeeding;	
<i>Mental health:</i> Psychoeducation in communities, schools and mosques; MHPSS counselling and First Aid	
<i>NCD:</i> Counselling on healthy lifestyle and NCD prevention and screening for hypertension; the main focus is on curative services	
Curative services	
<i>Communicable disease:</i> Case management according to protocols; vaccinations; screening	
<i>Child health:</i> distribution of supplements (Iron, Vitamin A and D); management of common childhood communicable diseases; IMCI	
<i>Reproductive health:</i> Management of pregnancy, maternal and neonatal complications; syndromic management of STIs; distribution of supplements; normal delivery; abortion care; BEmONC (eg: vacuum extraction); suture of tears; clinical management of rape survivors (CMR)	
<i>Mental health:</i> Diagnosis and management according to mhGAP; psychosocial management of rape survivors;	
<i>Nutrition:</i> Case management and distribution of supplements; care of non-breastfed and malnourished child; CMAM according to protocol	
<i>NCD:</i> NCD diagnosis, management and treatment according to PEN and further expanded areas of NCD; management of poisoning and overdose;	
Diagnostic services	haematology; chemistry; serology; bacteriology and culture (including AFB), CTG, X-Ray

Laboratory and other equipment	Standard PHC and basic laboratory including cold chain equipment; PPE, delivery sets, surveillance lab kit, autoclave, RDTs and media, VE set, surgical kits and supplies, midwifery delivery kit, ECG, Defibrillator, Incubator
Essential drugs	All above medications plus some selected specific drugs, such as Spiramycin, Ca gluconate, Mg Sulphate, Phenobarbital
Medical staff	General practitioner (4), Nurse (8), Midwife (4), Psycho-social worker (2) Community health worker (10), Lab technician (1), Dentist (1), Pharmacist (1), Specialist Paediatrician (1) Internal Medicine (1), Gynaecologist/Obstetrician (1), X-ray technician (1)

Annex B. List of EHSP services re-categorized for costing

Cost Code	Service	Program	Type	Level 1	Level 2	Level 3	Level 4
				Mobile PHC	PHC Unit	PHC Centre	Comprehensive PHC
76	Lower respiratory infections - 5 and over	CD	Curative	x	x	x	x
77	Upper respiratory infections - 5 and over	CD	Curative	x	x	x	x
78	Intestinal parasites - 5 and over	CD	Curative	x	x	x	x
79	Typhoid -5 and over	CD	Curative	x	x	x	x
81	Diarrhea - not bloody - 5 and over	CD	Curative	x	x	x	x
82	Diarrhea - bloody - 5 and over	CD	Curative	x	x	x	x
21	Lower respiratory infections <5	CH	Curative	x	x	x	x
22	Upper respiratory infections <5	CH	Curative	x	x	x	x
23	Diarrhea - not bloody - <5	CH	Curative	x	x	x	x
24	Diarrhea - bloody - <5	CH	Curative	x	x	x	x
85	Anemia <5	CH	Curative	x	x	x	x
86	Otitis Media <5	CH	Curative	x	x	x	x
87	Treatment and referral of general severe child case <5	CH	Curative	x	x	x	x
88	Measles treatment <5	CH	Curative	x	x	x	x
92	Typhoid -<5	CH	Curative	x	x	x	x
93	Hepatitis A <5	CH	Curative	x	x	x	x
94	Parasital infections <5	CH	Curative	x	x	x	x
2	Education group talks in facilities	GEN	Preventive	x	x	x	x
14	Depression management	MH	Curative	x	x	x	x
15	Psychoses management	MH	Curative	x	x	x	x
18	Comprehensive Management of Rape (CMR)	MH	Curative	x	x	x	x
19	Epilepsy	MH	Curative	x	x	x	x
1	Diabetes diagnosis and treatment	NCD	Curative	x	x	x	x
3	Skin diseases	NCD	Curative	x	x	x	x
4	Urinary tract illnesses	NCD	Curative	x	x	x	x
5	Eye and ear diseases	NCD	Curative	x	x	x	x
6	Thalassemia and other hematologic disorders.	NCD	Curative	x	x	x	x
7	Poisoning and Drug Overdose (acid , alkali, amphetamine, diazepam, ethanol, kerosene, organophosphate, etc.	NCD	Curative	x	x	x	x
8	Rheumatic illnesses (osteoarthritis, arthralgias, gouty arthritis, SLE, etc.	NCD	Curative	x	x	x	x
9	Hypertension	NCD	Curative	x	x	x	x
10	Asthma and COPD	NCD	Curative	x	x	x	x
11	Cardio Vascular Diseases	NCD	Curative	x	x	x	x
12	Gastrointestinal illnesses like gastritis, peptic ulcer, biliary and gallbladder diseases, and ulcerative colitis	NCD	Curative	x	x	x	x
25	Nutrition and IYCF Skilled Counselling for PLWs (women with children 0-<24 months)	NUT	Preventive	x	x	x	x
26	Screening of malnutrition (MUAC, bi-pedal edema checking)	NUT	Preventive	x	x	x	x
27	Growth monitoring	NUT	Preventive	x	x	x	x
28	Distribution of micronutrient supplement (children 6 to 59)	NUT	Preventive	x	x	x	x
31	Out Patient therapeutic treatment MAM	NUT	Curative		x	x	x
32	Inpatient therapeutc treatment	NUT	Curative		x	x	x
33	Outpatient treatment of malnourished PLW	NUT	Curative		x	x	x
38	Out Patient therapeutic treatment SAM	NUT	Curative		x	x	x
34	Antenatal care examination and risk assessment - first visit	RH	Preventive	x	x	x	x
35	Antenatal care examination and risk assessment - follow-up visits	RH	Preventive	x	x	x	x
41	Routine post-natal visit	RH	Preventive	x	x	x	x
42	Monitoring and referral of post-natal complications	RH	Curative	x	x	x	x
46	Family planning - counseling	RH	Preventive	x	x	x	x
47	Family planning - male condoms	RH	Preventive	x	x	x	x
48	Family planning - female condoms	RH	Preventive	x	x	x	x
50	Family planning - Depo-Provera	RH	Preventive	x	x	x	x
52	Family planning - IUD	RH	Preventive	x	x	x	x
54	Family planning - sterilization female	RH	Preventive	x	x	x	x
55	Family planning - pill	RH	Preventive	x	x	x	x
71	Cervical cancer screening	RH	Preventive				x
95	Management of normal delivery in facility	RH	Other (Deliveries)				x
96	Ante natal management of complications	RH	Curative	x	x	x	x
97	Neonatal care	RH	Preventive				x
98	Gender-based violence	RH	Preventive	x	x	x	x
99	Gynecological counseling	RH	Promotional	x	x	x	x

Annex C. Comprehensive PHC Centre - Service Needs 2

D. SERVICE NEEDS	25	26	27	28	31	32	33	34	35	38
	Nutrition and IYCF Skilled Counselling for PLWs	Screening of malnutrition (MUAC, bipedal edema)	Growth monitoring	Distribution of micronutrient supplement	Out Patient therapeutic treatment MAM	Inpatient therapeutic treatment	Outpatient treatment of malnourished PLW	Antenatal care examination and risk	Antenatal care examination and risk	Out Patient therapeutic treatment SAM
Type of service:	Preventive	Preventive	Preventive	Preventive	Curative	Curative	Curative	Preventive	Preventive	Curative
Provided by Facility: (Y/N)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Level of service provision:	Primary (Ambu	Primary (Ambu	Primary (Ambu	Primary (Ambu	Primary (Ambu	Primary (Ambu	Primary (Ambu	Primary (Ambu	Primary (Ambu	Primary (Ambu
Relevant population group:	Pregnant Wom	Children <5	Children <5	Children <5	Children <5	Children <5	Children <5	Pregnant Wom	Pregnant Wom	Pregnant Wom
Relevant population:	1,638	4,000	4,000	4,000	4,000	4,000	4,000	1,638	1,638	1,638
Prevalence or incidence rate:	100.0%	100.0%	100.0%	100.0%	2.2%	0.003%	7.8%	100.0%	100.0%	0.4%
Percentage of cases seen at level indicated:	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total quantity of cases:	1,638	4,000	4,000	4,000	87	0.12	128	1,638	1,638	17
Percentage of the population that receives services:	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Quantity of cases in the relevant zone:	1,638	4,000	4,000	4,000	87	0.12	128	1,638	1,638	17
Quantity of services per case:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	3.00	1.00
Quantity of services needed: (SCENARIO C)	1,638	4,000	4,000	4,000	87	0.1	128	1,638	4,914	17
Projected services: (SCENARIOS D, E)	819	2,000	2,000	2,000	44	0.1	64	819	2,457	8
Actual services: (SCENARIOS A, B)	0	0	0	0	0	0.0	0	0	0	0

D. SERVICE NEEDS	41	42	46	47	48	50	52	54	55	71
	Routine post-natal visit	Monitoring and referral of post-natal complications	Family planning - counseling	Family planning - male condoms	Family planning - female condoms	Family planning - Depo-Provera	Family planning - IUD	Family planning - sterilization female	Family planning - oral contraceptive	Cervical cancer screening
Type of service:	Preventive	Curative	Preventive	Preventive	Preventive	Preventive	Preventive	Preventive	Preventive	Preventive
Provided by Facility: (Y/N)	Yes	Yes	Yes	Yes	0	Yes	Yes	Yes	Yes	Yes
Level of service provision:	Primary (Ambu	Primary (Ambu	Primary (Ambu	Primary (Ambu	Primary (Ambu	Primary (Ambu	Primary (Ambu	Primary (Ambu	Primary (Ambu	Primary (Ambu
Relevant population group:	Pregnant Wom	Pregnant Wom	Female Rep Ag	Male Adult	Female Rep Ag	Female Rep Ag	Female Rep Ag	Female Rep Ag	Female Rep Ag	Female Adult
Relevant population:	1,638	1,638	12,000	14,000	12,000	12,000	12,000	12,000	12,000	14,000
Prevalence or incidence rate:	100.0%	10.0%	100.0%	20.0%	0.0%	10.0%	10.0%	0.010%	40.0%	33.0%
Percentage of cases seen at level indicated:	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total quantity of cases:	1,638	164	12,000	2,800	0.12	1,200	1,200	1	4,800	4,620
Percentage of the population that receives services:	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Quantity of cases in the relevant zone:	1,638	164	12,000	2,800	0.12	1,200	1,200	1	4,800	4,620
Quantity of services per case:	1.00	1.00	1.00	12.00	1.00	4.00	1.00	1.00	4.00	1.00
Quantity of services needed: (SCENARIO C)	1,638	164	12,000	33,600	0.12	4,800	1,200	1	19,200	4,620
Projected services: (SCENARIOS D, E)	819	82	6,000	16,800	0.06	2,400	600	1	9,600	2,310
Actual services: (SCENARIOS A, B)	0	0	0	0	0	0	0	0	0	0

Annex C. Comprehensive PHC Centre - Service Needs 3

D. SERVICE NEEDS	76	77	78	79	81	82	85	86	87	88
	Lower respiratory infections - 5 and over	Upper respiratory infections - 5 and over	Intestinal parasites - 5 and over	Typhoid - 5 and over	Diarrhea - not bloody - 5 and over	Diarrhea - bloody - 5 and over	Anemia <5	Otitis Media <5	Treatment and referral of	Measles treatment <5
Type of service:	Curative	Curative	Curative	Curative	Curative	Curative	Curative	Curative	Curative	Curative
Provided by Facility: (Y/N)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Level of service provision:	Primary (A)	Primary (A)	Primary (A)	Primary (A)	Primary (A)	Primary (A)	Primary (A)	Primary (A)	Primary (A)	Primary (A)
Relevant population group:	Adults >5	Adults >5	Adults >5	Adults >5	Adults >5	Adults >5	Children <5	Children <5	Children <5	Children <5
Relevant population:	36,000	36,000	36,000	36,000	36,000	36,000	4,000	4,000	4,000	4,000
Prevalence or incidence rate:	1.0%	7.0%	1.0%	0.5%	8.0%	0.1%	40.0%	5.0%	1.0%	0.5%
Percentage of cases seen at level indicated:	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total quantity of cases:	360	2,520	360	180	2,880	36	1,600	200	40	20
Percentage of the population that receives services:	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Quantity of cases in the relevant zone:	360	2,520	360	180	2,880	36	1,600	200	40	20
Quantity of services per case:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Quantity of services needed: (SCENARIO C)	360	2,520	360	180	2,880	36	1,600	200	40	20
Projected services: (SCENARIOS D, E)	180	1,260	180	90	1,440	18	800	100	20	10
Actual services: (SCENARIOS A, B)	0	0	0	0	0	0	0	0	0	0

D. SERVICE NEEDS	92	93	94	95	96	97	98	99
	Typhoid - <5	Hepatitis A <5	Parasital infections <5	Management of normal delivery	Ante natal management of	Neonatal care	Gender-based violence	Gynecological counseling
Type of service:	Curative	Curative	Curative	Other (Delivery)	Curative	Preventive	Preventive	Preventive
Provided by Facility: (Y/N)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Level of service provision:	Primary (A)	Primary (A)	Primary (A)	Secondary	Primary (A)	Primary (A)	Primary (A)	Primary (A)
Relevant population group:	Children <5	Children <5	Children <5	Pregnant W	Pregnant W	Newborns	Female Ad	Female Rep
Relevant population:	4,000	4,000	4,000	1,638	1,638	1,560	14,000	12,000
Prevalence or incidence rate:	0.1%	0.1%	40.0%	40.0%	15.0%	100.0%	0.1%	40.0%
Percentage of cases seen at level indicated:	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total quantity of cases:	4	4	1,600	655	246	1,560	14	4,800
Percentage of the population that receives services:	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Quantity of cases in the relevant zone:	4	4	1,600	655	246	1,560	14	4,800
Quantity of services per case:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Quantity of services needed: (SCENARIO C)	4	4	1,600	655	246	1,560	14	4,800
Projected services: (SCENARIOS D, E)	2	2	800	328	123	780	7	2,400
Actual services: (SCENARIOS A, B)	0	0	0	0	0	0	0	0

Annex D. Comprehensive PHC Centre – Average Staff Minutes per Service 2

STAFF TIMES & COSTS	25	26	27	28	31	32	33	34	35	38
	Nutrition and YCF Skilled Counselling for PLWs (w women)	Screening of malnutrition (MUAC, bi-pedal edema)	Grow th monitoring	Distribution of micronutrient supplement (children 6 to	Out Patient therapeutic treatment MAM	Inpatient therapeuti treatment	Outpatient treatment of malnourished PLW	Antenatal care examination and risk assessment -	Antenatal care examination and risk assessment -	Out Patient therapeutic treatment SAM
Level	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)
1. DIRECT MINUTES PER SERVICE										
GP	-	-	-	-	-	-	-	-	-	-
Gynecologist	-	-	-	-	-	-	-	-	-	-
Pediatrician	-	-	-	-	10.00	60.00	-	-	-	10.00
Internal Medicine	-	-	-	-	-	-	-	-	-	-
Dentist	-	-	-	-	-	-	-	-	-	-
Nurse	7.50	5.00	5.00	5.00	10.00	250.00	15.00	-	-	10.00
Midwife	7.50	-	-	-	-	-	-	30.00	30.00	-
Psychosocial Worker	-	-	-	-	-	-	-	-	-	-
Community Health Worker	-	-	-	-	-	-	-	-	-	-
Laboratory Technician	-	-	-	-	-	-	-	10.00	10.00	-
Pharmacy Technician	-	-	-	-	-	-	-	5.00	5.00	-
Nutrition Technician	-	-	-	-	-	-	-	-	-	-

STAFF TIMES & COSTS	41	42	46	47	48	50	52	54	55	71
	Routine post-natal visit	Monitoring and referral of post-natal complications	Family planning - counseling	Family planning - male condoms	Family planning - female condoms	Family planning - Depo-Provera	Family planning - IUD	Family planning - sterilization female	Family planning - oral contraceptives	Cervical cancer screening
Level	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)
1. DIRECT MINUTES PER SERVICE										
GP	-	-	-	-	-	-	-	-	-	-
Gynecologist	10.00	15.00	-	-	30.00	-	30.00	60.00	-	10.00
Pediatrician	-	-	-	-	-	-	-	-	-	-
Internal Medicine	-	-	-	-	-	-	-	-	-	-
Dentist	-	-	-	-	-	-	-	-	-	-
Nurse	-	-	-	-	-	15.00	-	-	-	-
Midwife	10.00	-	15.00	-	5.00	15.00	5.00	20.00	-	10.00
Psychosocial Worker	-	-	-	-	-	-	-	-	-	-
Community Health Worker	-	-	-	3.00	-	-	-	-	5.00	-
Laboratory Technician	-	-	-	-	-	-	-	-	-	-
Pharmacy Technician	-	-	-	-	-	-	-	-	-	-
Nutrition Technician	-	-	-	-	-	-	-	-	-	-

Annex D. Comprehensive PHC Centre – Average Staff Minutes per Service 3

STAFF TIMES & COSTS	76	77	78	79	81	82	85	86	87	88
	Lower respiratory infections - 5 and over	Upper respiratory infections - 5 and over	Intestinal parasites - 5 and over	Typhoid -5 and over	Diarrhea - not bloody - 5 and over	Diarrhea - bloody - 5 and over	Anemia <5	Otitis Media <5	Treatment and referral of general	Measles treatment <5
Level	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)
1. DIRECT MINUTES PER SERVICE										
GP	23.00	23.00	13.00	8.00	23.00	23.00	8.00	8.00	8.00	8.00
Gynecologist	-	-	-	-	-	-	-	-	-	-
Pediatrician	-	-	-	-	-	-	-	-	-	-
Internal Medicine	-	-	-	-	-	-	-	-	-	-
Dentist	-	-	-	-	-	-	-	-	-	-
Nurse	19.00	19.00	19.00	12.00	19.00	19.00	12.00	12.00	12.00	12.00
Midwife	-	-	-	-	-	-	-	-	-	-
Psychosocial Worker	-	-	-	-	-	-	-	-	-	-
Community Health Worker	-	-	-	-	-	-	-	-	-	-
Laboratory Technician	-	-	-	-	-	-	-	-	-	-
Pharmacy Technician	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Nutrition Technician	-	-	-	-	-	-	-	-	-	-

STAFF TIMES & COSTS	92	93	94	95	96	97	98	99
	Typhoid <5	Hepatitis A <5	Parasital infections <5	Management of normal delivery in	Ante natal management of complication	Neonatal care	Gender-based violence	Gynecological counseling
Level	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Secondary (Hospitalization)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)	Primary (Ambulatory)
1. DIRECT MINUTES PER SERVICE								
GP	8.00	8.00	8.00	-	-	-	-	-
Gynecologist	-	-	-	30.00	25.00	-	-	30.00
Pediatrician	-	-	-	-	-	10.00	-	-
Internal Medicine	-	-	-	-	-	-	-	-
Dentist	-	-	-	-	-	-	-	-
Nurse	12.00	12.00	12.00	-	-	-	-	-
Midwife	-	-	-	200.00	-	-	120.00	10.00
Psychosocial Worker	-	-	-	-	-	-	-	-
Community Health Worker	-	-	-	-	-	-	-	-
Laboratory Technician	-	-	-	-	10.00	5.00	-	10.00
Pharmacy Technician	3.00	3.00	3.00	-	-	-	-	-
Nutrition Technician	-	-	-	-	-	-	-	-

Annex E. Comprehensive PHC Total Cost and Cost per Service at 50% Coverage (USD) 1

Service number		1	2	3	4	5	6	7	8	9	10
COST PER SERVICE	TOTAL	Diabetes diagnosis and treatment	Education group talks in facilities	Skin diseases	Urinary tract illnesses	Eye and ear diseases	Thalassemia and other hematologic disorders.	Poisoning and Drug Overdose (acid , alkali,	Rheumatic illnesses (osteoarthri tis,	Hypertensio n	Asthma and COPD
Comp PHC - Scenario D: Total Cost	1,623,714	479,830	85	14,119	2,840	6,472	3,607	38,137	20,640	43,229	62,597
Comp PHC - Scenario D: Total Services	131,897	5,600	149	600	400	400	240	1,400	2,400	4,000	5,600
Comp PHC - Scenario D: Cost per Service		85.68	0.57	23.53	7.10	16.18	15.03	27.24	8.60	10.81	11.18
Comp PHC - Scenario D: Drug Cost per Service		77.82	-	21.21	1.94	12.97	1.61	19.37	1.19	4.98	6.06
Comp PHC - Scenario D: Supply Cost per Service		0.08	-	0.08	0.09	0.08	0.19	0.21	0.09	0.06	0.08
Comp PHC - Scenario D: Lab Cost per Service		4.00	-	-	1.25	-	1.00	-	0.27	1.50	1.00
Comp PHC - Scenario D: Salary Cost per Service		2.62	0.40	1.56	2.66	2.17	8.68	5.30	5.26	2.94	2.80
Comp PHC - Scenario D: Operating Cost per Service		1.17	0.17	0.69	1.17	0.96	3.55	2.35	1.79	1.32	1.24
Comp PHC - Scenario E: Total Cost	1,557,684	478,307	76	14,021	2,716	6,378	3,243	37,353	16,695	42,085	60,951
Comp PHC - Scenario E: Total Services	131,897	5,600	149	600	400	400	240	1,400	2,400	4,000	5,600
Comp PHC - Scenario E: Cost per Service		85	1	23	7	16	14	27	7	11	11
Comp PHC - Scenario E: Drug Cost per Service		78	-	21	2	13	2	19	1	5	6
Comp PHC - Scenario E: Supply Cost per Service		0	-	0	0	0	0	0	0	0	0
Comp PHC - Scenario E: Lab Cost per Service		4	-	-	1	-	1	-	0	2	1
Comp PHC - Scenario E: Salary Cost per Service		2	0	1	2	2	7	5	4	3	3
Comp PHC - Scenario E: Operating Cost per Service		1	0	1	1	1	3	2	2	1	1

Service number		11	12	14	15	18	19	21	22	23	24
COST PER SERVICE	TOTAL	Cardio Vascular Diseases	Gastrointest inal illnesses like	Depression managemen t	Psychoses managemen t	Comprehen sive Managemen t of Rape (Epilepsy	Lower respiratory infections <5	Upper respiratory infections <5	Diarrhea - not bloody - <5	Diarrhea - bloody - <5
Comp PHC - Scenario D: Total Cost	1,623,714	487,024	12,904	150,879	33,459	134	20,008	145	1,042	1,389	439
Comp PHC - Scenario D: Total Services	131,897	9,600	2,000	36,000	3,600	6	1,680	40	400	400	20
Comp PHC - Scenario D: Cost per Service		50.73	6.45	4.19	9.29	22.39	11.91	3.64	2.60	3.47	21.94
Comp PHC - Scenario D: Drug Cost per Service		44.94	1.24	0.11	6.16	-	9.04	1.19	0.16	0.74	6.29
Comp PHC - Scenario D: Supply Cost per Service		0.08	0.08	-	0.09	0.08	0.09	0.09	0.09	0.09	0.09
Comp PHC - Scenario D: Lab Cost per Service		-	0.75	0.58	-	-	-	-	-	-	-
Comp PHC - Scenario D: Salary Cost per Service		4.15	3.04	2.43	2.12	15.68	1.93	1.62	1.62	1.82	14.66
Comp PHC - Scenario D: Operating Cost per Service		1.57	1.35	1.07	0.93	6.63	0.85	0.73	0.73	0.82	0.90

Annex E. Comprehensive PHC Total Cost and Cost per Service at 50% Coverage (USD) 2

Service number		25	26	27	28	31	32	33	34	35	38
COST PER SERVICE	TOTAL	Nutrition and IYCF Skilled Counselling	Screening of malnutrition (MUAC,	Growth monitoring	Distribution of micronutrient	Out Patient therapeutic treatment MAM	Inpatient therapeutic treatment	Outpatient treatment of malnourishe	Antenatal care examination and risk	Antenatal care examination and risk	Out Patient therapeutic treatment SAM
Comp PHC - Scenario D: Total Cost	1,623,714	859	565	565	565	3,420	19	1,330	23,766	14,412	647
Comp PHC - Scenario D: Total Services	131,897	819	2,000	2,000	2,000	44	0	64	819	2,457	8
Comp PHC - Scenario D: Cost per Service		1.05	0.28	0.28	0.28	78.29	322.32	20.83	29.02	5.87	78.26
Comp PHC - Scenario D: Drug Cost per Service		-	-	-	-	59.90	199.17	19.97	21.15	-	59.90
Comp PHC - Scenario D: Supply Cost per Service		-	-	-	-	0.03	2.25	0.02	0.08	0.08	-
Comp PHC - Scenario D: Lab Cost per Service		-	-	-	-	-	-	-	4.00	2.00	-
Comp PHC - Scenario D: Salary Cost per Service		0.74	0.19	0.19	0.19	17.57	112.74	0.58	2.73	2.73	17.57
Comp PHC - Scenario D: Operating Cost per Service		0.30	0.09	0.09	0.09	0.79	8.16	0.27	1.06	1.06	0.79

Service number		41	42	46	47	48	50	52	54	55	71
COST PER SERVICE	TOTAL	Routine post-natal visit	Monitoring and referral of post-natal	Family planning - counseling	Family planning - male condoms	Family planning - female condoms	Family planning - Depo-Provera	Family planning - IUD	Family planning - sterilization female	Family planning - oral contracepti	Cervical cancer screening
Comp PHC - Scenario D: Total Cost	1,623,714	3,207	896	7,495	7,984	1	8,214	6,131	12	35,093	9,185
Comp PHC - Scenario D: Total Services	131,897	819	82	6,000	16,800	0	2,400	600	1	9,600	2,310
Comp PHC - Scenario D: Cost per Service		3.92	10.94	1.25	0.48	10.24	3.42	10.22	20.33	3.66	3.98
Comp PHC - Scenario D: Drug Cost per Service		-	4.28	-	0.36	0.54	1.25	0.52	-	3.47	-
Comp PHC - Scenario D: Supply Cost per Service		0.02	0.06	-	-	0.08	0.08	0.08	0.26	-	0.08
Comp PHC - Scenario D: Lab Cost per Service		-	2.00	-	-	-	-	-	-	-	-
Comp PHC - Scenario D: Salary Cost per Service		3.00	3.59	0.91	0.08	7.48	1.49	7.48	15.57	0.13	3.00
Comp PHC - Scenario D: Operating Cost per Service		0.90	1.01	0.34	0.03	2.14	0.61	2.14	4.51	0.06	0.90

Annex E. Comprehensive PHC Total Cost and Cost per Service at 50% Coverage (USD) 3

Service number		76	77	78	79	81	82	85	86	87	88
COST PER SERVICE	TOTAL	Lower respiratory infections - 5 and over	Upper respiratory infections - 5 and over	Intestinal parasites - 5 and over	Typhoid - 5 and over	Diarrhea - not bloody - 5 and over	Diarrhea - bloody - 5 and over	Anemia <5	Otitis Media <5	Treatment and referral of	Measles treatment <5
Comp PHC - Scenario D: Total Cost	1,623,714	4,117	26,433	1,199	696	9,812	104	23,450	575	86	25
Comp PHC - Scenario D: Total Services	131,897	180	1,260	180	90	1,440	18	800	100	20	10
Comp PHC - Scenario D: Cost per Service		22.87	20.98	6.66	7.73	6.81	5.78	29.31	5.75	4.29	2.51
Comp PHC - Scenario D: Drug Cost per Service		17.56	15.67	2.70	5.30	1.07	0.00	24.87	3.32	1.78	-
Comp PHC - Scenario D: Supply Cost per Service		0.09	0.09	0.09	0.08	0.37	0.26	0.09	0.08	0.15	0.15
Comp PHC - Scenario D: Lab Cost per Service		-	-	0.30	-	0.15	0.30	2.00	-	-	-
Comp PHC - Scenario D: Salary Cost per Service		3.59	3.59	2.46	1.62	3.59	3.59	1.62	1.62	1.62	1.62
Comp PHC - Scenario D: Operating Cost per Service		1.63	1.63	1.12	0.73	1.63	1.63	0.73	0.73	0.73	0.73

Service number		92	93	94	95	96	97	98	99
COST PER SERVICE	TOTAL	Typhoid <5	Hepatitis A <5	Parasital infections <5	Normal delivery in facility	Ante natal management of	Neonatal care	Gender-based violence	Gynecological counseling
Comp PHC - Scenario D: Total Cost	1,623,714	16	11	2,134	10,042	1,036	14,805	88	25,742
Comp PHC - Scenario D: Total Services	131,897	2	2	800	328	123	780	7	2,400
Comp PHC - Scenario D: Cost per Service		8.09	5.51	2.67	30.65	8.43	18.98	12.56	10.73
Comp PHC - Scenario D: Drug Cost per Service		5.58	-	0.16	2.14	-	0.59	2.49	-
Comp PHC - Scenario D: Supply Cost per Service		0.15	0.15	0.15	0.66	0.08	0.26	0.08	-
Comp PHC - Scenario D: Lab Cost per Service		-	3.00	-	2.00	-	-	-	-
Comp PHC - Scenario D: Salary Cost per Service		1.62	1.62	1.62	19.32	6.47	17.43	7.29	8.27
Comp PHC - Scenario D: Operating Cost per Service		0.73	0.73	0.73	6.54	1.89	0.71	2.71	2.46