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HEALTH ECONOMICS & FINANCING PROGRAMME

Estimating human resource requirements for scaling up priority health interventions in Low-income countries of Sub-Saharan Africa: A methodology based on service quantity, tasks and productivity (THE QTP METHODOLOGY)

Christoph Kurowski [1, 2]

and

Anne Mills [1]

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The version of the QTP model presented here benefited from the experiences gathered in two case studies carried out in Tanzania and Chad. Kaspar Wyss and N'Diekhor Yemadji led the case study in Chad and Salim Abdulla participated in the Tanzania team. We are grateful for their collaboration and helpful comments during the preparation of the model.

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Authors

Christoph Kurowski
The World Bank
1818 H Street, NW
Washington DC, 20433
ckurowski@worldbank.org

Anne Mills
Health Policy Unit
London School of Hygiene & Tropical Medicine
Keppel Street
WC1E 7HT London
anne.mills@lshtm.ac.uk

Abbreviations

CMH	Commission on Macroeconomics and Health
FTE	Full-time equivalent
HRH	Human Resources for Health
QTP model	Service quantity, task and productivity model
SSA	Sub-Saharan Africa

Content

1. Introduction

Over the past three years, we have developed and refined a tool to estimate human resource requirements for improved health in low-income countries. The original version of this model was tested in case studies in Tanzania and Chad and case study findings are available at http://www.hefp.lshtm.ac.uk. We named the original version of the model NTTP with N for need, T for target, T for task and P for productivity.

The results of the case studies led us to revise the NTTP model. The revisions prompted us to name the model QTP where Q stands for service Quantity, T for task and P for productivity. With this report, we provide a detailed description of the revised model. A publication summarizing the experiences in the use of the model and a discussion of the areas in which it may be successfully applied is forthcoming.

In the following section of this working paper, we describe the reasons that motivated us to develop the methodology, including a brief summary of the model's methodological strengths and limitations. Section 3 describes the features and calculus of the model, illustrated with an example of a priority intervention. Section 4 presents our conclusions, and section 5 the references. Annex A tabulates the service categories, intervention groups, interventions and treatment lines included in the model. Annex B and C specify the data inputs (B) and equations (C) that the model uses to calculate service quantity. Annex D provides the results of the task analysis, illustrated with data from the Tanzania case study.

2. Background and motivation

In September 2000, the General Assembly of the United Nations endorsed the Millennium Development Goals (MDGs) [2]. Three of these goals are directly related to health outcomes. They demand significant reductions in mortality and morbidity between 1990 and 2015. With less then 10 years left to attain the targets of the MDGs, most recent analyses indicate that many countries are not on track, the majority of them in Sub-Saharan Africa (SSA) [3].

Accelerated progress towards the health-related MDGs in poor countries critically depends upon improving access to a limited number of cost-effective and technically-simple interventions [4, 5]. Until now, international efforts and research have focused on estimating and closing the resource gap to finance the scaling up of priority interventions in low-income countries [4, 6-10]. Even greater, however, is the challenge of reorganizing and strengthening health service delivery systems in poor countries to deliver these priority interventions at high levels of service coverage [5, 11].

The implementation of priority interventions depends on well-functioning delivery structures close to the individuals in need. Key to this is a well-performing health workforce. Therefore, the availability of well-trained, well-deployed and motivated human resources for health (HRH) determines the pace at which priority interventions may be scaled up. But how many health workers are needed to achieve high levels of service coverage? What is the required skill mix? These and other questions increasingly concern health policy makers in SSA, where access to health services critically depends

on public service delivery systems and governments assume key responsibilities for the training, recruitment and deployment of health workers.

In developing the QTP model, we responded to the need for a tool to determine human resource requirements for scaling up priority interventions in low-income countries of Sub-Saharan Africa. While the literature describes at least 5 general approaches, the availability of tools to estimate human resource requirements in health remains limited [12]. To our knowledge, none allows the computing of the impact of scaling up priority interventions on the workforce size and its composition. For example, the World Health Organization (WHO) has developed and promoted a model for health workforce planning that offers three methods to estimate future human resource requirements [13]. The first technique computes HRH requirements based on staff per population ratios, a second is based on infrastructure and staffing norms and a third is based on targets for the generic per capita production of ambulatory and inpatient services.

The QTP model provides a tool to estimate HRH requirements for the scaling up of priority interventions. It is rooted in the concept of functional job analysis. In the early 1930s, functional job analysis triggered the development of assembly lines to utilize more efficiently the skills and time of workers. Functional job analysis views work processes as a series of reiterated tasks duplicated across time and space. Concentrating on a small set of cost-effective and technically simple interventions prompted us to consider health services as a production line where tasks are repeated, consistent and associated with a specific set of skills. The QTP model applies the concept of functional task analysis for the first time to the delivery of a range of priority health services in low-income countries.

The QTP model permits not only the estimation of HRH requirements, but also the investigation of broader questions of planning, organizing and managing HRH in low-income countries of SSA. For example, the QTP method determines HRH requirements in terms of skills that are required to accomplish certain tasks, rather than evaluating workforce requirements in terms of general professional categories. Comparing, both qualitatively and quantitatively, HRH requirements computed by skill levels with information about HRH availability by occupational categories, challenges current perceptions about the optimal workforce composition at the macro and micro level. The QTP model also explicitly considers productivity. In the two case studies, for example, we estimated staff productivity in time and motion experiments and confirmed the findings of earlier publications that have described staff productivity in SSA settings at levels at or below 50% [14, 15]. Given these low levels, methods that estimate HRH requirements based on variables including staff productivity suggest solutions to the tremendous shortage of health workers relative to needs in SSA.

As with all approaches and tools to estimate HRH requirements, the QTP model has methodological limitations. First, the approach is limited to health service activities that can be conceptualized as repeated and consistent tasks. This approach proved difficult to apply to managerial functions. Therefore, in contrast to the earlier version, the model limits interventions to health, maintenance and administrative services commonly carried out by health professionals. Second, the present design of the model is limited to a set of priority interventions that was recommended by the Commission on Macroeconomics and Health (CMH) [4, 5]. This set of interventions can be delivered at the primary and first-line secondary levels of care. Hence, in the context of SSA, the model determines some of the HRH requirements solely at the most decentralized level of government, the district.

Finally, the model uses service targets rather than health targets. While the CMH estimated that the scaling up of priority interventions to service coverage targets between 70 to 90% will, on average, achieve the MDGs for countries with GDP per capita levels below US$ 1,200, the link between service targets and health outcomes may be compromised. For example, the impact of scaling up on health outcomes critically depends on the quality of services.

With the development of the model, we hope to support a strategic approach to HRH research and planning that contributes to the design of the most feasible and efficient health service delivery model for priority interventions.

3. The QTP Model

3.1 Summary

The model estimates HRH requirements based on 4 principal variables and can be summarized as:

$$\sum_{i=x}^{i=z} q(\sum t)\, p$$

where *i (x to z)* represents a set of priority interventions. The second variable, *q* is service quantity, that is, the frequency with which a specific intervention is provided during a year. Service quantity is commonly determined by a population's demography, the disease's epidemiology and service coverage. The third variable, Σ*t*, is the sum of specific tasks necessary to provide a given intervention. Each task is defined by the required skill level, the type of service facility within the health service delivery system, and the time necessary to accomplish the intervention. Finally, variable *p* is productivity. We use a concept of productivity that combines staff productivity and service productivity. Staff productivity is defined as the percentage of working hours that staff spend on productive activities. Service productivity is defined as the proportion of productive staff time that is spent on the delivery of priority interventions.

While the variables of quantity and productivity are unit free, time weights of tasks are expressed in minutes. To arrive at meaningful estimates for human resource requirements, minutes are converted into full-time equivalents. One full-time equivalent equals the number of working minutes per year stipulated by contractual agreements for a fully employed health worker.

The QTP model determines HRH requirements at a specific point in time. In order to estimate incremental change over time, as in the case of scaling up service coverage, the model has to be run twice. In the first run, HRH requirements are calculated for current needs, actual service coverage and productivity and, in the second run, for future health and service coverage and productivity targets. Incremental changes are computed as the difference between the two points in time. Task characteristics may also change over time but it is difficult to predict underlying technological change. Therefore, in the two case studies, we assumed task characteristics as constant over time.

In the following, we provide a more detailed description of the model by describing aspects of the 4 principal variables and how to combine them in order to estimate HRH requirements in FTE's. We illustrate the descriptions of the variables service quantity, tasks, productivity and how to combine them to estimate HRH requirements using, as an example, the treatment line of ambulatory care for clinical anaemia as a pregnancy related complication, i.e. cases of anaemia as a pregnancy related complication that do not receive a blood transfusion. Data are taken from the Tanzania case study.

3.2 Interventions

The current version of the model includes the set of priority interventions recommended by the CMH that addresses the disease burden related to tuberculosis, malaria, diseases of

infancy and childhood, diseases and complications of motherhood and HIV/AIDS (see section 4). In addition to these 5 broad service categories, we included maintenance and administrative tasks at the facility level that are critical to the functioning of a health facility and the district health system.

In the model, each of the broader service categories comprises a subset of interventions or groups of interventions. For example, the service category 'tuberculosis' includes treatment for sputum smear positive, sputum smear negative, and extra-pulmonary tuberculosis, and the service category of 'motherhood diseases and complications' includes antenatal care, emergency obstetric care, and post-partum care. In contrast to the CMH recommendations but consistent with common practice, the service category of motherhood diseases and complications also includes family planning.

The majority of interventions constituting the 5 broad clinical service categories were further broken down into specific treatment lines. Treatment lines were primarily determined by different manifestations of diseases and complications, reflecting the severity of the illness and the corresponding intensity of the treatment necessary. In the case of long-term interventions for chronic diseases and conditions, treatment lines were divided into two sub-treatment lines dependent on whether the recipient of care completes or discontinues the course of treatment. In the tables of the corresponding annex D, we refer to these two sub-treatment lines as "full" versus "default".

3.3 Service quantity

Service quantity is the frequency with which a specific intervention is provided during a year. Countries, however, do not report service quantity but service coverage, which is the number of services provided relative to the number of services needed. The model therefore calculates service quantity based on estimates for the number of services needed and information on service coverage.

Estimating the quantity of needed services

The model calculates estimates for the quantity of needed services based on demographic data and information on risk, incidence and prevalence. In the case of long-term interventions, it produces two different estimates; first, the frequency of a completely delivered intervention and, second, the frequency of a discontinued intervention.

Precision and accuracy of the model is clearly dependent upon the availability of accurate epidemiological data. In low-income countries of SSA, the availability of such data may be a major constraint to the use of the model. Most recent data may offer approximations for currently prevailing epidemiological patterns. In the absence of future projections for risk, prevalence and incidence, current levels may be assumed as constant over time.

Estimates of need in the service category of maintenance and administration hinge on the number of facilities rather than demographic and epidemiological data.

Example: Step 1 - Estimating the quantity of needed services

In the first step, we calculate the total need for the intervention 'clinical anaemia (or severe anaemia) as a pregnancy related complication'. According to WHO guidelines, the condition of severe anaemia is defined as anaemia with haemoglobin levels below 7 g/dl [1].

The total need for treatment of clinical anemia as a pregnancy related complication of a population, that is, the number of cases per year and for a population (N clinical anemia) is calculated as:

Equations and data inputs	Example
N clinical anemia = [pregnancies] [% clinical anemia]	96,372
Where	
[pregnancies] is the number of pregnancies per year calculated as [live births] *(1+[abortion rate corrected]/100)	1,927,435
[live births] is the number of live births per year calculated as: [tot pop size]*[birth rate]/1000	1,752,213
[tot pop size] is the total population size	44,136,356
[birth rate] is the number of births per thousand population	39.7
and	
[% clinical anemia] is the incidence of clinical anemia among pregnant women (Hemoglobin < 7 g/dl)	5%

Estimating service quantity based on estimates of the quantity of services needed and information on service coverage

Countries commonly report service coverage and formulate service coverage targets for a range of priority interventions. In this case, the model calculates service quantity as the product of needed services and service coverage. In low-income countries of SSA, however, information on service coverage is not routinely available for all priority interventions, in particular, for those priority interventions that are not captured by demographic and health surveys. In the absence of baseline data, countries cannot formulate coverage targets. In some instances, it may be justified to fill data gaps for service coverage with information on general access to health services. Furthermore, data on access to health services may be adjusted by information on treatment seeking behavior provided in the literature.

The model uses an alternative approach to fill common information gaps on service coverage in low-income countries of SSA. This approach takes advantage of countries reporting service coverage information for some critical tracer interventions of a broader service package serving the same target population. For example, countries report the coverage of antenatal care and skilled birth attendance as two critical tracer interventions for the safe-motherhood intervention package. The model assumes a relationship between the coverage of tracer interventions and other interventions of the benefit package serving the same target population. Rarely, however, are demand and supply characteristics of interventions so similar that coverage information reported for one can serve as a proxy for another intervention. Frequently, demand and supply characteristics are distinct. Differences are related to the severity of the addressed condition. The model takes advantage of the tendency that information is often available for common, less severe conditions but absent for rare and severe conditions within a benefit package. It adjusts coverage information available for less severe conditions in two ways to estimate service

quantity for similar but more severe conditions. On the supply side, it assumes that the point of service delivery within the health system hierarchy is different. Less severe conditions are completely treated at lower levels of care. In the case of more severe conditions, only the first contact with the delivery system is at the lowest level of care and further treatment, following the referral of the patient, is delivered at a higher level of care. Hence, the model adjusts service coverage data for an intervention addressing a less severe condition by the probability of a successful referral to a higher level of care in order to serve as a proxy for a more severe condition. On the demand side, it assumes that a proportion of the population that does not seek care for the less severe condition will seek care for the more severe condition. In both case studies, information on the variation in treatment seeking behavior dependent on the severity of a condition and the probability of a successful referral were taken from the literature and/or solicited in provider interviews.

Service coverage data commonly reflect averages across different treatment lines. The model, however, distinguishes between treatment lines. Treatment lines differ by the point of service delivery and the intensity of treatment and care. Both factors drive HRH requirements quantitatively and qualitatively and sensitivity analyses demonstrated that resulting differences are significant and cannot be ignored. To adjust service coverage information to individual treatment lines, the model uses a similar approach to that discussed above for interventions constituting a service package with the same target population but different supply side characteristics. In the case of an intervention with an ambulatory treatment line for less severe cases and an inpatient treatment line for more severe conditions, the model makes the following adjustments. The service quantity of the ambulatory treatment line is primarily the need for this treatment line and the average service coverage. The service quantity of the ambulatory treatment line additionally includes the proportion of cases that need inpatient care, but receive ambulatory services because they are not successfully referred to a higher level of care. The service quantity for the inpatient line results from the estimate of the population in need for this treatment line and the average service coverage corrected for the referral probability.

In some cases, as in our example, countries report neither service coverage for an intervention nor its treatment lines. In this case, the model combines the methods described above to adjust service coverage information reported for a similar service first to the intervention and then to individual treatment lines.

Example: Step 2 - Estimating service quantity based on estimates for the quantity of needed services and service coverage

The intervention ‘clinical anemia as a pregnancy related complication’ includes two treatment lines. The first treatment line is offered to patients with a hemoglobin level of 4 g / dl or above. The service is provided on an ambulatory basis and includes a 90 day extra-supply of iron and folic acid. The second treatment line is offered to patients with a hemoglobin level below 4 g / dl. The service is provided on an inpatient basis and includes a blood transfusion. In step 2 of the example, we calculate service quantity for the first treatment line based on the service target recommendations of the CMH.

The Commission report does not provide a specific coverage target for the treatment of pregnancy related clinical anemia, let alone the treatment line of ambulatory care. However, the Commission provides a service coverage target of 90% for antenatal care. During antenatal care, clinical signs of anemia are likely to be detected. However, we cannot simply assume that the service target for antenatal care is the same as

for the treatment of clinical anemia provided on an ambulatory basis. First, antenatal care is commonly delivered at the lowest level of the health service delivery system, for example, the health post, while the diagnosis and treatment of clinical anemia requires basic laboratory equipment and is therefore delivered at the second level of the health service delivery system, for example the health center. Therefore, the number of pregnant women with clinical anemia that receive care depends on the referral probability between the first and second level of the health service delivery system. Second, some pregnant women that do not receive antenatal care will refer themselves for treatment and care. Third, the treatment of patients with clinical anemia in need of a blood transfusion is delivered at the third level in the service delivery system, for example the district hospital. However, not all of the patients in need of this treatment line will be successfully referred. A proportion will fall back on the ambulatory treatment option.

For the above reasons, the service quantity of the ambulatory treatment line of clinical anemia as a pregnancy related complication includes three components:
1. Pregnant women with clinical anemia but not in need of a blood transfusion that receive antenatal care and are successfully referred for treatment to the second level of the delivery system
2. Pregnant women with clinical anemia but not in need of a blood transfusion who do not receive antenatal care but have access to care and refer themselves for treatment
3. Pregnant women with clinical anemia in need of a blood transfusion who receive antenatal care but are not successfully referred to hospital care and therefore seek ambulatory care.

Coverage in the service category of maintenance and administration is defined as the ratio of the number of facilities that is required to ensure a certain level of access to health services relative to the number required to achieve universal access.

Example: Step 2 – Estimating service quantity based on estimates for the quantity of needed services and service coverage (continued)

According to its three components, service quantity is calculated as follows:

Equations and data inputs	Example
[A clinical anaemia ambc] = [N clinical anemia]*((100-[% very severe anemia])*([cove ANC]*[% referral after contact with HS])+(100-[cove ANC])*[access to hs]*[% self-referral without prior contact with HS])+ [% very severe anemia]*[cove ANC]*(100-[% referral after contact with HS]))	54,620
where	
[N clinical anemia]: is the total need for treatment of clinical anemia as a pregnancy related complication	96,372
[% very severe anemia]: is the percentage of pregnant women with very severe anemia (hemoglobin < 4 g/dl) among pregnant women with clinical anemia	10%
[cove ANC]: is the target coverage for antenatal care services	90%
[% referral after contact with HS]: is the percentage of patients with successful referral within the health service delivery system	80%
[access to hs] percentage of the population with access to health services	80%
[% self-referral without prior contact with HS]: is the percentage of patients with a successful self-referral out of the population with no previous contact with the health system but access to health services	20%

3.4 Tasks

The definition and specification of tasks is at the core of the model. The underlying analysis includes two steps. First, interventions or treatment lines are broken down into types of contacts between the patient and the health service delivery system. Each contact is specified by its quantity during the course of the intervention or treatment line and the level of service provision within the hierarchy of the health service delivery system. For

long-term interventions and treatment lines, the model provides information about the quantity of contacts during the completed versus the discontinued course.

The model defines three levels of service that we present in annex D as infrastructure levels A to C. Level A represents the lowest level of the health service delivery system with no laboratory or other diagnostic equipment. Level B represents the intermediate level in the health service delivery system where ambulatory and inpatient care for non severe cases is provided. Basic laboratory equipment is available. Level C represents the highest level within the health service delivery system for priority interventions. Outpatient and inpatient care is provided to diagnostically difficult or severe cases. Advanced laboratory, radiological and surgical equipment is available.

In the second step, each contact with the health service delivery system is broken down into tasks, with each task characterized by the required skills and a time weight. The task analysis is based on a series of treatment guidelines for resource-limited settings published by the World Health Organization [1, 16-19]. In the case studies, these guidelines were adapted to country specific policies. The task analysis resulted in a total of 18 skill classes summarized in table 1. Time weights are expressed in minutes.

Example: Step 3 – Task analysis

The results of the task analysis are provided in annex D. Below, we present the results for the treatment line ambulatory care of the intervention 'clinical anemia as a pregnancy related complication'.

The treatment line consists of three types of contacts with the health service delivery system; the initial contact, a follow up and the laboratory (hemoglobin) analysis. During the course of the intervention, each contact takes place once (see column 'quantity of contacts'). In the case of the treatment line, the model does not distinguish the two sub-treatment lines of a full course (full) and an interrupted course (default) of care. All contacts take place at infrastructure level B.

Each contact consists of various tasks. For example, the initial contact includes the tasks of "take medical history", "examine physically", "order investigation(s)", "prescribe drugs", "document service", "counsel", and "provide drugs". Each task is characterized by skill level and a time weight. In the example, each contact is provided by a single person. Hence, only one skill level is specified for each task (HRH1). In the case of the initial contact, the tasks "take medical history" through "counsel" are provided by a person of skill class 4. The corresponding time weight for all these tasks is 16.5 minutes. The task "provide drugs" is provided by a person of skill class 9. The corresponding time weight is 3.5 minutes.

intervention	contact	tasks	skill level			infrastructure level			time weight	quantity of contacts	
			HRH 1	HRH 2	HRH 3	A	B	C		full	default
clinical anemia ambc	S2AB1	take medical history	4				100%		16.5	1.0	
S2	initial contact	examine physically									
pregnant women with severe anemia receiving ambulatory care		order investigation(s)									
		prescribe drugs									
		document service									
		counsel									
		provide drugs	9				100%		3.5	1.0	
	S2AH1	update medical history	4				100%		16.5	1.0	
	follow up	examine physically									
		prescribe drugs									
		document service									
		counsel									
		provide drugs	9				100%		3.5	1.0	
	S2LE1	inform and instruct patient	7				100%		11.8	1.0	
	hemoglobin analysis	take sample									
		prepare sample									
		analyse sample									
		document service									
		clean equipment	1				100%		0.3	1.0	

The time weights across all contacts of the intervention can be summarized by skill level and infrastructure level as follows:

Skill level	Infrastructure level
	B
1	0.3 min
4	33 min
7	11.8 min
9	7 min

In annex D, the results of the task analysis are presented by interventions, intervention lines and contacts. Certain contacts and tasks are performed in teams. In these cases, various skill levels apply (HRH1, HRH2, HRH3).

In order to permit the comparison between skill requirements and HRH availability, skill levels need to be merged according to professional categories. For example, in the two case studies we merged the 18 skill levels into 5 broader categories consisting of unskilled, nursing and midwifery, clinical, technical and managerial and administrative skills.

Table 1: Definition of skill categories

1	Essential nursing care, including monitoring of vital signs and basic maintenance tasks, for example cleaning of equipment
2	Directly observed treatment
3	Basic and advanced nursing care of inpatients
4	Birth attendance, syndromic management of STIs among female adults
5	Diagnostic and patient management of uncomplicated adult cases of infectious diseases such as tuberculosis, malaria, STIs among male patients; basic palliative care; continuation of complex treatment courses initiated at higher levels of the service delivery system
6	Diagnostic and patient management skills for cases of complicated and severe infectious diseases such as tuberculosis, malaria and HIV/AIDS among children and adults and for emergency care
7	Basic laboratory procedures and maintenance of equipment
8	Basic radiological procedures and maintenance of equipment
9	Distribution (giving out) of drugs
10	Management of drug storage and supply at the facility level
11	Supervision and management of district health system
12	Supervision and management of health facility (other than drug related)
13	Counseling of cases of infectious disease, provision of patients with supplies (e.g. insecticide treated nets)
14	Counseling of pregnancy related risks and family planning, basic obstetric physical examination, monitoring of vital signs, ordering and performance of simple diagnostic tests (e.g. urine protein), provision of basic drugs (e.g. iron) and supplies (e.g. condoms)
15	Syndromic management of pediatric diseases
16	Emergency obstetric surgery
17	Basic anesthetic procedures, including epidural anesthesia
18	Assistance in the operating theatre

3.5 Productivity

The QTP model combines two concepts of productivity. Staff productivity is defined as the proportion of working hours that an employee spends on productive activities such as patient care, outreach activities, administration, meetings, training, cleaning and maintenance. Working hours are commonly stipulated in the contract between the employer and employee. Time and motion studies are considered the gold standard for estimating this dimension of staff productivity. In time and motion studies, researchers observe health workers performing their duties. Other methods to estimate staff productivity have been described in the literature.

The second concept of productivity is specific to the challenge of scaling up priority interventions and we call it ‘service productivity’. Service productivity is defined as the proportion of productive staff time that is spent on the delivery of priority interventions and related functions such as briefings and team meetings. Information on service productivity is commonly not available. In the case studies, we estimated service productivity based on the ratio of HRH requirements, estimated on the basis of current service coverage, to HRH availability. In essence, the concept of service productivity allows for the fact that a sizable proportion of HRH are engaged in areas of the health service delivery system outside of the set of essential interventions.

Combined productivity is the product of staff and service productivity. The model considers combined productivity a generic feature of the health service delivery system. It does not consider productivity variations between individuals, facilities or interventions.

Example: Step 4 – Estimating productivity

The model distinguishes combines two different concepts of productivity. Staff productivity is defined as the proportion of working hours that an employee spends on productive activities. Service productivity is defined as the proportion of staff time spent on the delivery of priority interventions.

Combined productivity is calculated as follows:

Equations and data inputs	Example
[Combined productivity] = [staff productivity]*[service productivity]	36.8%
[staff productivity]	57.5%
[service productivity]	64.0%

3.6 Estimating HRH requirements as FTE's

In the final step of the model, the three principal variables of service quantity, tasks and productivity are combined and the result converted into full-time equivalents. The model calculates first net HRH requirements for each intervention in minutes by multiplying service quantity estimates with task matrices. Subsequently, the results are added together across interventions and then converted into gross HRH requirements by correcting the results for combined productivity. Finally estimates are converted into FTEs.

One FTE is defined as the number of working minutes per year stipulated by contractual arrangements for fully employed health workers. It is important to note that these definitions may vary between different sectors. In the case studies, we used the public sector definition. Information on working minutes per year is commonly not available. The model calculates the number based on net working days per year and working hours per day.

Example: Step 5 – Estimating HRH requirements as FTE's

According to the model's three principal variables, HRH requirements are calculated as follows:

<table>
<tr><td>Calculations</td><td colspan="2">Example</td></tr>
<tr><td rowspan="6">[HRH requirement (clinical anemia ambc)] =
[A clinical anemia ambc]*[task matrix] * [combined productivity] / [FTE]</td><td>Skill level</td><td>Infrastructure level</td></tr>
<tr><td></td><td>B</td></tr>
<tr><td>1</td><td>0.06 FTE's</td></tr>
<tr><td>4</td><td>6.22 FTE's</td></tr>
<tr><td>7</td><td>2.13 FTE's</td></tr>
<tr><td>9</td><td>1.32 FTE's</td></tr>
<tr><td>where</td><td colspan="2"></td></tr>
<tr><td>[A clinical anemia ambc] is the actual service quantity for clinical anemia ambulatory care</td><td colspan="2">54,620</td></tr>
</table>

<table>
<tr><td>and</td><td></td></tr>
<tr><td>[task matrix] is
<table><tr><th>Skill level</th><th colspan="3">Infrastructure level</th></tr><tr><td></td><td>A</td><td>…</td><td>D</td></tr><tr><td>1</td><td></td><td></td><td></td></tr><tr><td>.</td><td></td><td></td><td></td></tr><tr><td>.</td><td></td><td></td><td></td></tr><tr><td>18</td><td></td><td></td><td></td></tr></table></td><td><table><tr><th>Skill level</th><th>Infrastructure level</th></tr><tr><td></td><td>B</td></tr><tr><td>1</td><td>0.3 min</td></tr><tr><td>4</td><td>33 min</td></tr><tr><td>7</td><td>11.8 min</td></tr><tr><td>9</td><td>7 min</td></tr></table></td></tr>
<tr><td>and</td><td></td></tr>
<tr><td>[combined productivity] is the product of staff productivity and service productivity</td><td>36.8%</td></tr>
<tr><td>and</td><td></td></tr>
<tr><td>[FTE] is the full-time equivalent calculated as:
[net work days p.a.]*[working hours p.d]*60

[net work days p.a.] are the net working days per year calculated as:
52*[work days p.w.]-[pub holidays p.a.]-[holidays p.a.]-[sick leave p.a.]
[work days p.w.] are work days per week
[pub holidays p.a.] are the number of public holidays per year
[holidays p.a.] are the average number of holidays per year as stipulated in the contractual arrangements of full-time employees
[sick leave p.a.] are the average number of days of sick leave per year

[working hours p.d.] are the net working hours per day defined as in the contractual arrangements of full-time employees</td><td>106,560

222

5
8

20

10

7.5</td></tr>
</table>

4. References

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Annex A: Service categories, intervention groups, interventions and treatment lines

Service category	Intervention groups	Interventions	Treatment lines
Tuberculosis		Directly Observed Treatment (DOTS) for pulmonary smear-positive tuberculosis	Complete Treatment-ambulatory
			Complete Treatment-inpatient
			Incomplete Treatment-ambulatory
			Incomplete Treatment-inpatient
		DOTS for pulmonary smear-negative tuberculosis	Complete Treatment-ambulatory
			Complete Treatment-outpatient
			Complete Treatment-inpatient
			Incomplete Treatment-ambulatory
			Incomplete Treatment-outpatient
			Incomplete Treatment-inpatient
		DOTS for extra pulmonary tuberculosis	Complete Treatment-ambulatory
			Complete Treatment-outpatient
			Complete Treatment-inpatient
			Incomplete Treatment-ambulatory
			Incomplete Treatment-outpatient
			Incomplete Treatment-inpatient
Malaria		Diagnosis and treatment of malaria	Ambulatory
			Inpatient
		Insecticide Treated Nets (ITN)	
Childhood diseases	**Integrated Management of Childhood Illnesses (IMCI)**	Diagnosis and treatment of acute respiratory infections (ARI)	Upper ARI
			Lower ARI -ambulatory
			Lower ARI –inpatient
		Diagnosis and treatment of diarrhea	Non-dysentery, no dehydration - ambulatory
			Non-dysentery, w/ dehydration - ambulatory
			Non-dysentery, w/ dehydration – inpatient
			Dysentery, no dehydration - ambulatory
			Dysentery, w/dehydration –ambulatory
			Dysentery, w/dehydration - inpatient
		Diagnosis and treatment of malaria	Ambulatory
			Inpatient
		Diagnosis and treatment of fever	Ambulatory
			Inpatient
		Diagnosis and treatment of stunting	Ambulatory
			Inpatient
		Diagnosis and treatment of wasting	Ambulatory
			Inpatient
		Diagnosis and treatment of anemia	Ambulatory
			Inpatient
	Expanded Program on Immunization (EPI)	DPT	
		Measles	
		BCG	

Diseases and complications of motherhood		Antenatal care	
		Skilled birth attendance	
	Emergency Obstetric Care	Anemia	Without transfusion
			With transfusion
		Hemorrhage	
		Eclampsia	
		Obstructed Labor	
		Puerperal sepsis	
		Newborn complications	
		Abortion complications	
		Postpartum care	
		Family planning	Recurrent
			IUD
			Surgical
HIV/AIDS		Voluntary Counseling and Testing (VCT)	
		Prevention of Mother to Child Transmission (P MTCT)	
		Antiretroviral treatment (HAART_	Screening of immune status
			Complete monitoring for treatment
			Incomplete monitoring for treatment
			Complete treatment
			Incomplete treatment
		Palliative Care	
		Opportunistic Infections (OI), local	
		Opportunistic Infections, systemic	Ambulatory
			Inpatient
		Prophylactic treatment of TB	
		Prophylactic treatment of PcP	
		Condom distribution in public outlets	
		HIV education in schools	
		STI syndromic management	
Administrative and Maintenance Functions at Facility Level		Drug stock management	
		Cold chain maintenance	
		Laboratory equipment maintenance	
		Surgical equipment sterilization	
		Radiology equipment maintenance	
		Reporting to health management and information system	

Note: The IMCI conditions were corrected for co-incidence in the final analysis of need.

Annex B: Estimating service quantity: Data input requirements

Input	Description
Demography	
tot pop size	Total population size
% 0q4	Percentage of population under 5 years
% 5q9	Percentage of population under 10 years and over 4 years
% 5q9 male	Percentage of population under 10 years and over 4 years and male
% 5q9 female	Percentage of population under 10 years and over 4 years and female
% 10q14	Percentage of population under 15 years and over 9 years
% 10q14 male	Percentage of population under 15 years and over 9 years and male
% 10q14 female	Percentage of population under 15 years and over 9 years and female
% 15q99	Percentage of population over than 14 years
% 15q49 male	Percentage of population aged 15 to 49 years and male
% 15q49 female	Percentage of population aged 15 to 49 years and female
% 15q49	Percentage of population aged 15 to 49 years
aver household size	Average household size
birth rate	Birth per 1,000 population
infant mortality rate	Infant deaths per 1,000 live births
abortion rate raw	Abortions per 100 live births
access to hs	Proportion of the population with access to health services
% urban population	Percentage of population living in urban areas
dispensary urban catchment size	Average population catchment size of urban dispensaries
dispensary rural catchment size	Average population catchment size of rural dispensaries
health center urban catchment size	Average population catchment size of urban health centers
health center rural catchment size	Average population catchment size of rural health centers
district hospital urban catchment size	Average population catchment size of urban district hospitals
district hospital rural catchment size	Average population catchment size of rural district hospitals
Epidemiology and service characteristics	
Tuberculosis	
tb inc	Incidence ofTB per 100,000 population
pulm ss+ inc	Incidence of smear-positive pulmonary TB per 100,000 population
% xpulm inc / tb inc	Percentage of extrapulmonary tuberculosis cases out of all tuberculosis cases
% pulm ss+ complic ipdc	Percentage of patients diagnosed as smear-positive tb with clinical complications that require inpatient care at DH
% pulm ss- ref invest opdc	Percentage of patients with symptoms suspicious for pulmonary tb and smear-negative test results that are referred to OPD DH for further investigation
% pulm ss- ref invest opdc admit ipdc	Percentage of patients suspicious for pulmonary tb and smear-negative test results referred for further investigations to DH that require inpatient care
% pulm ss- complic ipdc	Percentage of patients with symptoms suscpicious for pulmonary tb, smear-negative test results and clinical complications that require inpatient care
% xpulm ref invest opdc	Percentage of patients with system suspicious for extrapulmonary tb that are referred to OPD DH for further investigation
% xpulm ref invest opdc admit ipdc	Percentage of patients suspicious for extrapulmonary tb referred for further investigations to DH that require inpatient care
% xpulm complic ipdc	Percentage of patients with symptoms suscpicious for extrapulmonary tb and clinical complications that require inpatient care
% tb default	Percentage of patients treated for tuberculosis that either die, fail, default or are transferred.
Malaria	
% pop AFRO no risk	Percentage of population according to transmission risk category (AFRO no risk)
% pop AFRO epidemic	Percentage of population according to transmission risk category (AFRO epidemic)
% pop AFRO endemic	Percentage of population according to transmission risk category (AFRO endemic)
% pop SAFRO endemic	Percentage of population according to transmission risk category (SAFRO endemic)
inc mal AFRO epidemic 5q9	Incidence of malaria dependent on age and transmission risk category (AFRO epidemic 5q9)
inc mal AFRO epidemic 10q14	Incidence of malaria dependent on age and transmission risk category (AFRO epidemic 10q14)
inc mal AFRO epidemic 15q99	Incidence of malaria dependent on age and transmission risk category (AFRO epidemic 15q99)
inc mal AFRO endemic 5q9	Incidence of malaria dependent on age and transmission risk category (AFRO endemic 5q9)
inc mal AFRO endemic 10q14	Incidence of malaria dependent on age and transmission risk category (AFRO endemic 10q14)
inc mal AFRO endemic 15q99	Incidence of malaria dependent on age and transmission risk category (AFRO endemic 15q99)
inc mal SAFRO endemic 5q9	Incidence of malaria dependent on age and transmission risk category (SAFRO endemic 5q9)
inc mal SAFRO endemic 10q14	Incidence of malaria dependent on age and transmission risk category (SAFRO endemic 10q14)
inc mal SAFRO endemic 15q99	Incidence of malaria dependent on age and transmission risk category (SAFRO endemic 15q99)
% malaria ipdc	Percentage of patients with symptoms suspicious for malaria that are referred for inpatient care because of clinical complications
half life of ITN	Half life of Insecticide Treated Nets
number of nets per household	Average number of Insecticide Treated Nets required per household

IMCI	
ARI inc dens 0q4	Incidence density of Acute Respiratory Infections per child under 5 years
% UARI	Proportion of Upper Respiratory Infections among ARI
% LARI non severe	Proportion of non severe Lower Respiratory Infections among ARI
% LARI severe	Proportion of severe Lower Respiratory Infections among ARI
% ARI inc dens with fever	Percentage of Acute Respiratory Infections with fever
dia inc dens 0q4	Incidence density of diarrhea per child under 5 years
dys inc dens 0q4	Incidence density of dystenteria per child under 5 years
% dia inc no dehydration	Percentage of diarrhea cases not complicated by dehydration
% dia inc no severe dehydration	Percentage of diarrhea cases with not severe dehydration
% dia inc severe dehydration	Percentage of diarrhea cases with severe dehydration
% dia inc dens with fever	Percentage of diarrhea cases with fever
fever inc density 0q4	Incidence density of fever
inc mal AFRO epidemic 0q4	Malaria incidence dependent on age and transmission risk category (AFRO epidemic 0q4) per 1,000 0q4
inc mal AFRO endemic 0q4	Malaria incidence dependent on age and transmission risk category (AFRO endemic 0q4) per 1,000 0q4
inc mal SAFRO endemic 0q4	Malaria incidence dependent on age and transmission risk category (SAFRO endemic 0q4) per 1,000 0q4
% fever severe 0q4	Percentage of fever cases (no malaria) with severe disease
% malaria severe 0q4	Percentage of malaria cases with severe disease
weight/height < 3s.d. prev 0q4	Prevalence of weight over height smaller than 3 standard deviations in children under 5 years
weight/age < 3s.d. prev 0q4	Prevalence of weight over age smaller than 3 standard deviations in children under 5 years
aver duration of weight/height < 3s.d. 0q4	Average duration of stunting among 0q4
aver duration of weight/age < 3s.d. 0q4	Average duration of wasting among 0q4
anemia prev 0q4	Prevalence of anemia among children under 5 years
aver duration of anemia 0q4	Average duration of anemia among 0q4
% anemia clinical symptoms	Percentage of anemia cases with clinical symptoms
% anemia clinic severe disease	Percentage of severe disease among anemia with clinical symptoms
% of ambc cases with 1 condition	Percentage of IMCI cases with only one pathological condition
% of ambc cases with 2 conditions	Percentage of IMCI cases with two pathological conditions
% of ambc cases with 3 or more conditions	Percentage of IMCI cases with three or more pathological conditions
HIV/AIDS	
% sexually active 15q49	Percentage of population aged 15 to 49 years that is sexually active
frequency of VCT per year among 15q49 sexually active	Frequency of voluntary counseling and testing among sexually active population aged 15 to49 years
prev HIV among pregnant women	HIV prevalence among pregnant women
prevalence HIV male 15q49	HIV prevalence among males aged 15 to 49 years
prevalence HIV female 15q49	HIV prevalence among females aged 15 to 49 years
% HIV and severe immune suppression	Percentage of individuals infected with HIV and CD4 cell counts below 200/mm
% HIV and mild immune suppression	Percentage of individuals infected with HIV and CD4 cell counts below 500/mm
% criteria HAART of HIV+ and CD4<200	Percentage of individuals infected with HIV and CD4 cell counts below 300/mm that meet additional criteria for commencing HAART
% default HAART	Percentage of patients expected to default under HAART
inc palliative episodes HIV+ 15q49	Incidence of episodes requiring palliative care in patients HIV+ per 100 patient years
inc local oi HIV+ 15q49	Incidence of local opportunistic infections in patients HIV+ per 100 patient years
inc systemic oi HIV+ 15q49	Incidence of systemic opportunistic infections (excluding TB) in patients HIV+ per 100 patient years
% systemic oi HIV+ 15q49 ipdc	Percentage of systemic opportunistic infections among HIV+ aged 15 to 49 years with severe complications that require inpatient care
tine test positive among HIV infected without active TB	Probability of positive tine test among among HIV+ aged 15 to 49 years without active TB
life expectancy PLWHA	Average life expectancy of PLWHA
% default under prophylactic TB treatment	Percentage of patients expected to default under prophylactic treatment of tuberculosis
inc syphilis female	Incidence of syphilis among women aged 15q49
% syphilis female sypmptomatic	Probability of clinical symptoms among women with syphilis
inc gonorrhoea female	Incidence of gonorrhea among women aged 15q49
% gonorrhoea female symptomatic	Probability of clinical symptoms among women with gonorrhea
inc chlamydia female	Incidence of chlamydia among women aged 15q49
% chlamydia female symptomatic	Probability of clinical symptoms among women with chlamydia
inc trichomoniasis female	Incidence of tichomonasis among women aged 15q49
% trichomoniasis female symptomatic	Probability of clinical symptoms among women with trichomonasis
% treatment partner (syphilis, gonorrhoea, chlamydia)	Probability of treating the partner of women with STI (syphilis, gonorrhoea, chlamydia)
number of public outlets per hc urban	Number of public outlets used for condom distribution in catchment area of urban health center
number of public outlets per hc rural	Number of public outlets used for condom distribution in catchment area of rural health center
frequency outlet service per year	Frequency of outlet service provided per outlet per year
primary school enrolment male	Net primary school enrolment of males
primary school enrolment female	Net primary school enrolment of females
secondary school enrolment male	Net secondary school enrolment of males
secondary school enrolment female	Net secondary school enrolment of females
average class size primary	Average class size primary school
average class size secondary	Average class size secondary school
years of primary education	Years of primary education
years of secondary education	Years of secondary education

EPI	
quantity of vaccinations type a (bcg)	Number of vaccinations type a (BCG)
quantity of vaccinations type b (dpt)	Number of vaccinations type b (DPT)
quantity of vaccinations type c (measles)	Number of vaccinations type c (Measles)
SMI	
% clinical anemia	Incidence of severe anemia per pregnancy (Hb<7 g/dl)
% very severe anemia	Percentage of pregnant women with very severe anemia (Hb <4 g/dl) among pregnant women with severe anemia
% haemorrhage	Incidence of postpartum haemorrhage per pregnancy
% eclampsia	Incidence of eclampsia per pregnancy
p caesarean in eclampsia	Percentage of eclampsia cases requiring caesarean section
% obstructed labor	Incidence of obstructed birth per birth
% puerperal sepsis	Incidence of puerperal sepsis per birth
% nb complications	Incidence of newborn complications per birth
% abortion complications	Incidence of complications per abortion
FP use	Women aged 15 to 49 years currently using modern family planning methods
FP unmet need	Women aged 15 to 49 years with unmet need of family planning
% FP sterilization	Percentage of women choosing sterilization as preferred method for family planning
% FP IUD	Percentage of women choosing intrauterine devices as preferred method for family planning
Support functions	
working days disp	Working days per week in dispensaries
working days hc	Working days per week in health centers
working days dh	Working days per week in district hospitals
HMIS rep freq per year	Frequency of producing reports for Health Management and Information System
Service coverage	
TB	
cove ss+	Coverage of cases of pulmonary smear-positive uncomplicated tuberculosis
cove nss+	Coverage of cases of pulmonary non smear-positive uncomplicated tuberculosis
Malaria	
coverage mal Dx Rx	Coverage of diagnosis and treatment of uncomplicated malaria
coverage mal ITN	Coverage of ITN
IMCI	
cove UARI 0q4	Coverage of uncomplicated upper acute respiratory tract infections of children under 5 years
cove LARI 0q4	Coverage of non-severe lower acute respiratory tract infections of children under 5 years
cove non-dys diarrhea s dehy	Coverage of non-dysenteric diarrhea without dehydration of children under 5 years treated on an ambulatory basis
cove non-dys diarrhea c dehy	Coverage of non-dysenteric diarrhea with non-severe dehydration of children under 5 years
cove dysenteria s dehy	Coverage of non-severe dysenteria of children under 5 years treated on an ambulatory basis
cove malaria 0q4 ambc	Coverage of uncomplicated malaria of children under 5 years
cove fever 0q4 ambc	Coverage of uncomplicated cases of fever of children under 5 years treated on an ambulatory basis
cove stunting 0q4 ambc	Coverage of uncomplicated stunting of children under 5 years treated on an ambulatory basis
cove wasting 0q4 ambc	Coverage of uncomplicated wasting of children under 5 years treated on an ambulatory basis
cove anemia 0q4 ambc	Coverage of uncomplicated anemia of children under 5 years treated on an ambulatory basis
EPI	
cove type a (bcg)	Coverage of type a vaccinations (BCG)
cove type b (dpt)	Coverage of type b vaccinations (DPT)
cove type c (measles)	Coverage of type c vaccinations (Measles)
SMI	
cove ANC	Coverage of antenatal care
cove SBA	Coverage of skilled birth attendance
cove FP	Coverage of family planning
HIV	
cove VCT	Coverage of Voluntary Counseling and Testing
cove MTCT	Coverage of the Prevention of Mother-To-Child-Transmission
cove HAART	Coverage of Highly Active Antiretroviral Treatment
cove palliative care	Coverage of palliative care
cove OI local	Coverage of local opportunistic infections
cove OI systemic	Coverage of systemic opportunistic infections
cove prophylactic treatment TB	Coverage of prophylactic treatment for tuberculosis
cove prophylactic treatment PcP	Coverage of prophylactic treatment for Pneumocystis carinii Pneumonia
cove condom distribution through public outlets	Coverage of condom distribution through public outlets
cove HIV school education	Coverag of school education
cove STI syndromic management	Coverage of Syndromic Management of Sexually Transmitted Infections
Referral probability	
% referral after contact with HS	Percentage of patients with successful referral within the health service delivery system
% self-referral without prior contact with HS	Percentage of patients with a successful self-referral out of the opuplation with no prior contact to the health service delivery system but access to health services

Annex C: Estimating service quantity: Equations

VARIABLE	DESCRIPTION	EQUATION
Demography		
0q4	Population under 5 years	[tot pop size]*[% 0q4]
5q9	Population under 10 years and over 4 years	[tot pop size]*[% 5q9]
5q9 male	Population under 10 years and over 4 years and male	[tot pop size]*[% 5q9 male]
5q9 female	Population under 10 years and over 4 years and female	[tot pop size]*[% 5q9 female]
10q14	Population under 15 years and over 9 years	[tot pop size]*[% 10q14]
10q14 male	Population under 15 years and over 9 years and male	[tot pop size]*[% 10q14 male]
10q14 female	Population under 15 years and over 9 years and female	[tot pop size]*[% 10q14 female]
15q99	Population over 14 years	[tot pop size]*[% 15q99]
15q49	Population aged 15 to 49 years	[tot pop size]*[% 15q49]
15q49 male	Population aged 15 to 49 years and male	[tot pop size]*[% 15q49 male]
15q49 female	Population aged 15 to 49 years and female	[tot pop size]*[% 15q49 female]
live births	Number of births per year	[tot pop size]*[birth rate]/ 1,000
0q12months	Population under 12 months	[live births]-[infant mortality rate]*[live births]
epi target group	Estimate of the population eligible for vaccinations between months 1 and 10	([live births]+[0q12months])/2
pregnancies	Number of pregnancies per year	[live births]*(1+[Abortion rate corrected]/100)
abortion rate corrected	Abortion rate corrected	If [abortion rate raw]<10 then [abortion rate corrected]=10
0q4 per household	Number of children under 5 years per household	[0q4]/[aver household size]/[tot pop size]
corrected 0q4 per household	Number of children under 5 years per household corrected for minimum	If [0q4 per household]<1 then [0q4 per household]=1
Tuberculosis		
non pulm ss+ inc	Incidence non smear-positive pulmonary tb	[tb inc]-[pulm ss+ inc]
xpulm inc	Incidence extra-pulmonary tb	[tb inc]-[% xpulm inc / tb inc]
pulm ss- inc	Incidence smear negative pulmonary tb	[non pulm ss+ inc]-[xpulm inc]
% pulm ss+ ambc	Percentage of patients diagnosed with smear-positive pulmonary tuberculosis and considered for ambulatory treatment at the health center level	100-[% pulm ss+ complic ipdc]
% pulm ss- ambc	Percentage of patients diagnosed with smear-negative pulmonary tuberculosis and considered for ambulatory treatment at the health center level	100-[% pulm ss- ref invest opdc]-[% pulm ss+ complic ipdc]
% xpulm ambc	Percentage of patients diagnosed with extra-pulmonary tuberculosis and considered for ambulatory treatment at the health center level	100-[% xpulm ref invest opdc]-[% xpulm complic ipdc]
N pulm ss+ full	Expected cases: pulmonary smear-positive tuberculosis that would receive full treatment	[tot pop size]*[pulm ss+ inc]*(100-[% tb default])
N pulm ss+ def	Expected cases: pulmonary smear positive tuberculosis that would default during treatment	[tot pop size]*[pulm ss+ inc]*[% tb default]
N pulm ss- full	Expected cases: pulmonary smear negative tuberculosis that would receive full treatment	[tot pop size]*[pulm ss- inc]*(100-[])
N pulm ss- def	Expected cases: pulmonary smear negative tuberculosis that would default during treatment	[tot pop size]*[pulm ss- inc]*[% tb default]
N xpulm full	Expected cases: extrapulmonary tuberculosis that would receive full treatment	[tot pop size]*[xpulm inc]*(100-[% tb default])
N xpulm def	Expected cases: extrapulmonary tuberculosis that would default during treatment	[tot pop size]*[xpulm inc]*[% tb default]
A pulm ss+ full ambc	Number of cases: pulmonary smear-positive tuberculosis that receive the full treatment regime per ambulatory services and exclusively at the primary level of care	[N pulm ss+ full]*[cove ss+]*([% pulm ss+ ambc]+[% pulm ss+ complic ipdc]*(100-[% referral after contact with HS]))
A pulm ss+ full ipdc	Number of cases: pulmonary smear-positive tuberculosis that receive the full treatment regime provided on an inpatient and ambulatory (primary care) basis	[N pulm ss+ full]*[cove ss+]*[% pulm ss+ complic ipdc]*[% referral after contact with HS]
A pulm ss+ def ambc	Number of cases: pulmonary smear-positive tuberculosis that default during the treatment regime provided on an ambulatory basis and exclusively at the primary level of care	[N pulm ss+ def]*[cove ss+]*([% pulm ss+ ambc]+[% pulm ss+ complic ipdc]*(100-[% referral after contact with HS]))*(100-[% referral after contact with HS]
A pulm ss+ def ipdc	Number of cases: pulmonary smear-positive tuberculosis that default during the treatment regime provided on an inpatient and ambulatory (primary care) basis	[N pulm ss+ def]*[cove ss+]*[% pulm ss+ complic ipdc]*[% referral after contact with HS]
A pulm ss- full ambc	Number of cases: pulmonary smear-negative tuberculosis that receive the full treatment regime per ambulatory services and exclusively at the primary level of care	[N pulm ss- full]*[cove nss+]+([% pulm ss- ambc]+[% pulm ss- ref invest opdc]*(100-[% referral after contact with HS])+[% pulm ss- complic ipdc]*(100-[% referral after contact with HS])
A pulm ss- full opdc	Number of cases: pulmonary smear-negative tuberculosis that receive the full treatment regime per ambulatory services (primary and secondary level of care)	[N pulm ss- full]*[cove nss+]*[% pulm ss- ref invest opdc]*(100-[% pulm ss- ref invest opdc admit ipdc])*[% referral after contact with HS]
A pulm ss- full ipdc	Number of cases: pulmonary smear-negative tuberculosis that receive the full treatment regime provided on an inpatient and ambulatory (primary care) basis	[N pulm ss- full]*[cove nss+]*([% pulm ss- ref invest opdc]*[% pulm ss- ref invest opdc admit ipdc]*[% referral after contact with HS]+[% pulm ss- complic ipdc]*[% referral after contact with HS])
A pulm ss- def ambc	Number of cases: pulmonary smear-negative tuberculosis that default during the treatment regime provided on an ambulatory basis and exclusively at the primary level of care	[N pulm ss- def]*[cove nss+]*([% pulm ss- ambc]+[% pulm ss- ref invest opdc]*(100-[% referral after contact with HS])+[% pulm ss- complic ipdc]*(100-[% referral after contact with HS]))
A pulm ss- def opdc	Number of cases: pulmonary smear-negative tuberculosis that default during the treatment regime provided on an ambulatory basis (primary and secondary level of care)	[N pulm ss- def]*[cove nss+]*[% pulm ss- ref invest opdc]*(100-[% pulm ss- ref invest opdc admit ipdc])*[% referral after contact with HS]

A pulm ss- def ipdc	Number of cases: pulmonary smear-negative tuberculosis that default during the treatment regime provided on an inpatient and ambulatory (primary care) basis	[N pulm ss- def]*[cove nss+]*([% pulm ss- ref invest opdc]*[% pulm ss- ref invest opdc admit ipdc]*[% referral after contact with HS]+[% pulm ss- complic ipdc]*[% referral after contact with HS])
A xpulm full ambc	Number of cases: extrapulmonary smear-negative tuberculosis that default during the treatment regime provided on an inpatient and ambulatory (primary care) basis	[N xpulm full]*[cove nss+]+([% xpulm ambc]+[% xpulm ref invest opdc]*(100-[% referral after contact with HS])+[% xpulm complic ipdc]*(100-[% referral after contact with HS])
A xpulm full opdc	Number of cases: extrapulmonary tuberculosis that receive the full treatment regime per ambulatory services (primary and secondary level of care)	[N xpulm full]*[cove nss+]*[% xpulm ref invest opdc]*(100-[% xpulm ref invest opdc admit ipdc])*[% referral after contact with HS]
A xpulm full ipdc	Number of cases: extrapulmonary tuberculosis that receive the full treatment regime provided on an inpatient and ambulatory (primary care) basis	[N xpulm full]*[cove nss+]*([% xpulm ref invest opdc]*[% xpulm ref invest opdc admit ipdc]*[% referral after contact with HS]+[% xpulm complic ipdc]*[% referral after contact with HS])
A xpulm def ambc	Number of cases: extrapulmonary tuberculosis that default during the treatment regime provided on an ambulatory basis and exclusively at the primary level of care	[N xpulm def]*[cove nss+]*([% xpulm ambc]+[% xpulm ref invest opdc]*(100-[% referral after contact with HS])+[% xpulm complic ipdc]*(100-[% referral after contact with HS]))
A xpulm def opdc	Number of cases: extrapulmonary tuberculosis that default during the treatment regime provided on an ambulatory basis (primary and secondary level of care)	[N xpulm def]*[cove nss+]*[% xpulm ref invest opdc]*(100-[% pulm ss- ref invest opdc admit ipdc])*[% referral after contact with HS]
A xpulm def ipdc	Number of cases: extrapulmonary tuberculosis that default during the treatment regime provided on an inpatient and ambulatory (primary care) basis	[N xpulm def]*[cove nss+]*([% xpulm ref invest opdc]*[% xpulm ref invest opdc admit ipdc]*[% referral after contact with HS]+[% xpulm complic ipdc]*[% referral after contact with HS])
Malaria		
N mal 5q99	Expected cases of malaria in population older 5 years	([% pop AFRO epidemic]*([5q9]*[inc mal AFRO epidemic 5q9]+[10q14]*[inc mal AFRO epidemic 10q14]+[15q99]*[inc mal AFRO epidemic 15q99]+[% pop AFRO endemic]*([5q9]*[inc mal AFRO endemic 0q4]+[10q14]*[inc mal AFRO endemic 10q14]+[15q99]*[inc mal AFRO endemic 15q99]+[% pop SAFRO endemic]*([5q9]*[inc mal SAFRO endemic 5q9]+[10q14]*[inc mal SAFRO endemic 10q14]+[15q99]*[inc mal SAFRO endemic 15q99])/1000
N households at risk	Households in endemic or epidemic areas facing risk of malaria transmission	[tot pop size]*[% pop at risk]/[aver household size]
A mal 5q99 dx rx ambc	Number of cases: malaria diagnosed and treated on an ambulatory basis	[N mal 5q99]*[coverage Dx Rx sca]*((100-[% malaria ipdc])+[% malaria ipdc]*(100-[% referral after contact with HS]))
A mal 5q99 dx rx ipdc	Number of cases: malaria diagnosed and treated on an inpatient care basis	[N mal 5q99]*[coverage Dx Rx sca]*[% malaria ipdc]*[% referral after contact with HS]
A itn provision	Number of: insecticide treated nets provided	[N households at risk]*[number of nets per household]/[half life of ITN]*[coverage ITN sca]
EPI		
A epi type A (bcg)	Number of contacts type a (BCG)	[live births]*[quantity of vaccinations type a (bcg)]*[cove type a (bcg)]
A epi type B (dpt)	Number of contacts type b (DPT)	[epi target group]*[quantity of vaccinations type b (dpt)]*[cove type b (dpt)]
A epi type C (measles)	Number of contacts type c (Measles)	[epi target group]*[quantity of vaccinations type c (measles)]*[cove type c (measles)]
A epi total	Number of contacts: Expanded Program on Immunization	[A epi type A (bcg)]+[A epi type B (dpt)]+[A epi type C (measles)]
IMCI		
non dys inc dens 0q4	Incidence density of non dysenteric diarrhea per child under 5 years	[dia inc dens 0q4]-[dys inc dens 0q4]
fever inc density 0q4 corr	Incidence density of fever corrected for cases with Acute Respiratory Infections with fever and cases with diarrhea and fever per child under 5 years	[fever inc density 0q4]-[ARI inc dens 0q4]*[% ARI inc dens with fever]-[dia inc dens 0q4]*[% dia inc dens with fever]
stunting case rate 0q4	Case rate of stunting per 1,000 children under 5 years	[weight/height < 3s.d. prev 0q4]/[aver duration of weight/height < 3s.d. 0q4]/1000
wasting case rate 0q4	Case rate of wasting per 1,000 children under 5 years	[weight/age < 3s.d. prev 0q4]/[aver duration of weight/age < 3s.d. 0q4]/1000
anemia clinic case rate 0q4	Case rate of anemia with clinical symptoms per 1,000 children under 5 years	[anemia case rate 0q4]*[% anemia clinical symptoms]
N ARI	Expected cases: ARI among children under 5 years	[0q4]*[ARI inc dens 0q4]
N non dys diarrhea	Expected cases: non-dysenteric diarrhea among 0q4	[0q4]*[non dys inc dens 0q4]
N dysenteria	Expected cases: dysenteria among 0q4	[0q4]*[dys inc dens 0q4]
N malaria	Expected cases: malaria among children under 5 years	[0q4]*([% pop AFRO epidemic]*[inc mal AFRO epidemic 0q4]+[% pop AFRO endemic]*[inc mal AFRO endemic 0q4]+[% pop SAFRO endemic]*[inc mal SAFRO endemic 0q4])/1,000
N fever	Expected cases: fever among children under 5 years	([0q4]*[fever inc density 0q4 corr]-[N malaria]
N stunting	Expected cases: stunting among children under 5 years	[0q4]*[stunting case rate 0q4]\1,000
N wasting	Expected cases: wasting among children under 5 years	[0q4]*[wasting case rate 0q4]\1,000
N clinical anemia	Expected cases: non-severe anemia among children under 5 years	[0q4]*[anemia clinic case rate 0q4]\1,000
AD UARI 0q4	Number of cases: UARI among children under 5 years that receive ambulatory care	[N ARI]*[cove UARI 0q4 sca]*[% UARI]
AD LARI ambc 0q4	Number of cases: LARI among children under 5 years that receive ambulatory care	[N ARI]*[cove LARI 0q4 sca]*([% LARI non severe]+[% LARI severe]*(100-[% referral after contact with HS])
AD LARI ipdc 0q4	Number of cases: severe LARI among children under 5 years that receive inpatient care	[N ARI]*[cove LARI 0q4 sca]*[% LARI severe]*[% referral after contact with HS]
AD non dys diarrhea ambc no dehy	Number of cases: non-dysenteric diarrhea without dehydration among children under 5years that receive ambulatory care	[N non dys diarrhea]*[cove non-dys diarrhea s dehy sca]*[% dia inc no dehydration]

AD non dys diarrhea ambc dehy	Number of cases: non-dysenteric diarrhea with not severe dehydration among children under 5 years that receive ambulatory care	[N non dys diarrhea]*[cove non-dys diarrhea c dehy sca]*([% dia inc no severe dehydration]+([% dia inc severe dehydration]*(100-[% referral after contact with HS])
AD non dys diarrhea ipdc dehy	Number of cases: non-dysenteric diarrhea with severe dehydration among Oq4 that receive inpatient care	[N non dys diarrhea]*[cove non-dys diarrhea c dehy sca]*[% dia inc severe dehydration]*[% referral after contact with HS]
AD dysenteria ambc no dehy	Number of cases: dysenteria without dehydration among Oq4 that receive ambulatory care	[N dysenteria]*[cove dysenteria s dehy sca]*[% dia inc no dehydration]
AD dysenteria ambc dehy	Number of cases: dysenteria with not severe dehydration among Oq4 that receive ambulatory care	[N dysenteria]*[cove dysenteria c dehy sca]*([% dia inc no severe dehydration]+([% dia inc severe dehydration]*(100-[% referral after contact with HS])
AD dysenteria ipdc dehy	Number of cases: dysenteria with severe dehydration among Oq4 that receive inpatient care	[N dysenteria]*[cove dysenteria c dehy sca]*[% dia inc severe dehydration]*[% referral after contact with HS]
AD malaria ambc	Number of cases: non-severe malaria among children under 5 years that receive ambulatory care	[N malaria]*[cove malaria Oq4 ambc sca]+((100-[% malaria severe Oq4])+[% malaria severe Oq4]*[% referral after contact with HS])
AD malaria ipdc	Number of cases: severe malaria among children under 5 years that receive inpatient care	[N malaria]*[cove malaria Oq4 ambc sca]*[% malaria severe Oq4]*[% referral after contact with HS]
AD fever ambc	Number of cases: non-severe fever among children under 5 years that receive ambulatory care	[N fever]*[cove fever Oq4 ambc sca]+((100-[% fever severe Oq4])+[% fever severe Oq4]*[% referral after contact with HS])
AD fever ipdc	Number of cases: severe fever among children under 5 years that receive inpatient care	[N fever]*[cove fever Oq4 ambc sca]*[% fever severe Oq4]*[% referral after contact with HS]
AD stunting ambc	Number of cases: non-severe stunting among children under 5 years that receive ambulatory care	[N stunting]*[cove stunting Oq4 ambc sca]+((100-[% stunting Oq4 severe disease])+[% stunting Oq4 severe disease]*[% referral after contact with HS])
AD stunting ipdc	Number of cases: severe stunting among children under 5 years that receive inpatient care	[N stunting]*[cove stunting Oq4 ambc sca]*[% stunting Oq4 severe disease]*[% referral after contact with HS]
AD wasting ambc	Number of cases: non-severe wasting among children under 5 years that receive ambulatory care	[N wasting]*[cove wasting Oq4 ambc sca]+((100-[% wasting Oq4 severe disease])+[% wasting Oq4 severe disease]*[% referral after contact with HS])
AD wasting ipdc	Number of cases: severe wasting among children under 5 years that receive inpatient care	[N wasting]*[cove wasting Oq4 ambc sca]*[% wasting Oq4 severe disease]*[% referral after contact with HS]
AD clinical anemia ambc	Number of cases: severe wasting among children under 5 years that receive inpatient care	[N clinical anemia]*[cove anemia Oq4 ambc sca]+((100-[% anemia clinic severe disease])+[% anemia clinic severe disease]*[% referral after contact with HS])
AD clinical anemia ipdc	Number of cases: severe wasting among children under 5 years that receive inpatient care	[N clinical anemia]*[cove anemia Oq4 ambc sca]*[% anemia clinic severe disease]*[% referral after contact with HS]
AG ambc other diseases	Number of: conditions except malnutrition (stunting, wasting) and anemia among children under 5 years that receive ambulatory care	[AD UARI Oq4]+[AD LARI ambc Oq4]+[AD non dys diarrhea ambc no dehy]+[AD non dys diarrhea ambc dehy]+[AD dysenteria ambc no dehy]+[AD dysenteria ambc dehy]+[AD malaria ambc]+[AD fever ambc]
AG ambc malnutrition/anemia	Number of: conditions of malnutrition (stunting, wasting) and anemia among children under 5 years that receive ambulatory care	[AD stunting ambc]+[AD wasting ambc]*[AD clinical anemia ambc]
AG ipdc	Number of: conditions of IMCI diseases among children under 5 years that receive inpatient care	[AD LARI ipdc Oq4]+[AD non dys diarrhea ipdc dehy]+[AD dysenteria ipdc dehy]+[AD malaria ipdc]+[AD fever ipdc]+[AD stunting ipdc]+[AD wasting ipdc]+[AD clinical anemia ipdc]
A other diseases ambc	Number of cases: only one IMCI disease except malnutrition (stunting, wasting) and anemia among children under 5 years that receive ambulatory care	[AG ambc other diseases]*[% of ambc cases with 1 condition]/([% of ambc cases with 1 condition]+[% of ambc cases with 2 conditions]*2+[% of ambc cases with 3 or more conditions]*3)
A malnutrition/anemia ambc	Number of cases: only one condition of malnutrition (stunting, wasting) or anemia among children under 5 years that receive ambulatory care	[AG ambc malnutrition/anemia]*[% of ambc cases with 1 condition]/([% of ambc cases with 1 condition]+[% of ambc cases with 2 conditions]*2+[% of ambc cases with 3 or more conditions]*3)*[corrected Oq4 per household]
A multiple IMCI conditions ambc	Number of cases: multiple IMCI conditions among children under 5 years that receive ambulatory treatment	([AG ambc malnutrition/anemia]+[AG ambc other diseases])*[% of ambc cases with 2 conditions]/([% of ambc cases with 1 condition]+[% of ambc cases with 2 conditions]*2+[% of ambc cases with 3 or more conditions]*3)+([AG ambc malnutrition/anemia]+[AG ambc other diseases])*[% of ambc cases with 3 or more conditions]/([% of ambc cases with 1 condition]+[% of ambc cases with 2 conditions]*2+[% of ambc cases with 3 or more conditions]*3)
A IMCI ipdc	Number of cases: IMCI disease that receive inpatient care	AG ipdc
Safe Motherhood and Family Planning		
FP total need	Percentage of women aged 15 to 49 years with need for family planning	[FP use]+[FP unmet need]
% FP recurrent	Percentage of women choosing recurrent methods as preferred method for family planning	100-[% FP sterilization]-[% FP IUD]
N ANC	Pregnant women in need of antenatal care	[pregnancies]-[N obstructed labour]-[N eclampsia]*[p caesarean in eclampsia]
N clinical anemia	Pregnant women with severe anemia	[pregnancies]*[% clinical anemia]
N SBA	Women giving birth	[live births]
N haemorrhage	Birth complicated by haemorrhage	[live births]*[% haemorrhage]
N eclampsia	Pregancies complicated by eclampsia	[pregnancies]*[% eclampsia]
N obstructed labour	Birth complicated by obstructed labor	[live births]*[% obstructed labor]
N puerperal sepsis	Women with puerperal sepsis	[live births]*[% puerperal sepsis]
N nb complications	Newborns with postnatal complications	[live births]*[% nb complications]
N abortion complications	Women after abortions in need of care	[pregnancies]*[% abortion complications]
N postpartum care	Women in need of postpartum care	[live births]
N familiy planning recurrent	Women in need of family planning (recurrent methods)	[15q49 female]*[FP total need]*[% FP recurrent]
N family planning IUD	Women in need of family planning (intrauterine device)	[15q49 female]*[FP total need]*[% FP IUD]

N family planning surgical	Women in need of family planning (sterilization)	[15q49 female]*[FP total need]*[% FP sterilization]
A ANC	Number of: pregnant women receiving antenatal care	[N ANC]*[cove ANC]
A clinical anemia ambc	Number of: pregnant women with severe anemia receiving ambulatory care	[N clinical anemia]*((100-[% very severe anemia])*([cove ANC]*[% referral after contact with HS]+(100-[cove ANC])*[access to hs]*[% self-referral without prior contact with HS]))+[% very severe anemia]*[cove ANC]*(100-[% referral after contact with HS]))
A clinical anemia ipdc	Number of: pregnant women with very severe anemia receiving inpatient care	[N clinical anemia]*[% very severe anemia]*([cove ANC]*[% referral after contact with HS]+(100-[cove ANC])*[access to hs]*[% self-referral without prior contact with HS])
A SBA	Number of: women giving birth under skilled birth attendance (SBA)	[N SBA]*[cove SBA]
A haemorrhage	Number of: women giving birth complicated by hemorrhage that receive care	[N haemorrhage]*([cove SBA]*[% referral after contact with HS]+(100-[cove SBA])*[access to hs]*[% self-referral without prior contact with HS])
A eclampsia	Number of: pregnant women with eclampsia receiving care	[N eclampsia]*([cove ANC]*[% referral after contact with HS]+(100-[cove ANC])*[access to hs]*[% self-referral without prior contact with HS])
A obstructed labour	Number of: women giving birth complicated by obstruted labor receiving care (cesarean section)	[N obstructed labour]*([cove SBA]*[% referral after contact with HS]+(100-[cove SBA])*[access to hs]*[% self-referral without prior contact with HS])
A puerperal sepsis	Number of: women with puerperal sepsis receiving care	[N puerperal sepsis]*([cove SBA]*[% referral after contact with HS]+(100-[cove SBA])*[access to hs]*[% self-referral without prior contact with HS])
A nb complications	Number of: newborns with postnatal complications receiving care	[N nb complications]*([cove SBA]*[% referral after contact with HS]+(100-[cove SBA])*[access to hs]*[% self-referral without prior contact with HS])
A abortion complications	Number of: women after abortions receiving care	[N abortion complications]*([cove ANC]*[% referral after contact with HS]+(100-[cove ANC])*[access to hs]*[% self-referral without prior contact with HS])
A postpartum care	Number of: women receiving postpartum care	[N postpartum care]*[cove SBA]
A fp recurrent	Number of: women receiving family planning (recurrent methods)	[N familiy planning recurrent]*[cove FP]
A fp IUD	Number of: women receiving family planning (intrauterine device)	[N family planning IUD]*[cove FP]
A fp surgical	Number of: women receiving family planning (sterilization)	[N family planning surgical]*[cove FP]
HIV/AIDS		
N VCT	Expected need: VCT	([15q49]-[N monitoring HAART full]-[N monitoring HAART default]-[N HAART full]-[N HAART default]-[N ANC])*[% sexually active 15q49]*[frequency of VCT per year among 15q49 sexually active]
N MTCT	Expected cases: HIV among women giving birth	[live births]*[prev HIV among pregnant women]
N screening for HAART monitoring & rx	Number of: persons newly tested positive with investigation of immune status	[15q49 male]*[prevalence HIV male 15q49]+[15q49 female]*[prevalence HIV female 15q49]
N monitoring HAART full	Expected cases HIV positive without indication for HAART followed over the course of the year	([15q49 male]*[prevalence HIV male 15q49]+[15q49 female]*[prevalence HIV female 15q49])*(100-(([% HIV and mild immune suppression]+[% HIV and severe immune suppression]*2)/3*[% criteria HAART of HIV+ and CD4<200])*(100-[% default monitoring for HAART])
N monitoring HAART default	Expected cases: HIV positive without indication for HAART that default during monitoring	([15q49 male]*[prevalence HIV male 15q49]+[15q49 female]*[prevalence HIV female 15q49])*(100-(([% HIV and mild immune suppression]+[% HIV and severe immune suppression]*2)/3*[% criteria HAART of HIV+ and CD4<200])*[% default monitoring for HAART])
N HAART full	Expected cases: clinical indication for HAART that would receive full treatment course	([15q49 male]*[prevalence HIV male 15q49]+[15q49 female]*[prevalence HIV female 15q49])*([% HIV and mild immune suppression]+[% HIV and severe immune suppression]*2)/3*[% criteria HAART of HIV+ and CD4<200]*(100-[% default HAART])
N HAART default	Expected cases: clinical indication for HAART that would default during treatment course	([15q49 male]*[prevalence HIV male 15q49]+[15q49 female]*[prevalence HIV female 15q49])*([% HIV and mild immune suppression]+[% HIV and severe immune suppression]*2)/3*[% criteria HAART of HIV+ and CD4<200]*[% default HAART]
N palliative care	Expected events: HIV+ that require palliative care	([15q49 male]*[prevalence HIV male 15q49]+[15q49 female]*[prevalence HIV female 15q49])*[inc palliative episodes HIV+ 15q49]/100
N oi local	Expected cases: localized opportunistic infections in HIV+ patients aged 15q49	([15q49 male]*[prevalence HIV male 15q49]+[15q49 female]*[prevalence HIV female 15q49])*[inc local oi HIV+ 15q49]/100
N OI systemic	Expected cases: non-severe systemic opportunistic infections treated ambulatory without referral	([15q49 male]*[prevalence HIV male 15q49]+[15q49 female]*[prevalence HIV female 15q49])*[inc systemic oi HIV+ 15q49]/100
N prophylactic treatment TB full	Expected cases: HIV+ individuals requiring prophylactic treatment of tuberculosis that would receive a full treatment course	([15q49 male]*[prevalence HIV male 15q49]+[15q49 female]*[prevalence HIV female 15q49])*[tine test positive among HIV infected without active TB]/[life expectancy PLWHA]*(100-[% default under prophylactic TB treatment])
N prophylactic treatment TB default	Expected cases: HIV+ individuals requiring prophylactic treatment of tuberculosis that would default during treatment course	([15q49 male]*[prevalence HIV male 15q49]+[15q49 female]*[prevalence HIV female 15q49])*[tine test positive among HIV infected without active TB]/[life expectancy PLWHA]*[% default under prophylactic TB treatment]

N prophylactic treatment PcP full	Expected cases: HIV+ requiring prophylactic treatment of pneumocystis carinii pneumonia that would receive a full treatment course	([15q49 male]*[prevalence HIV male 15q49]+[15q49 female]*[prevalence HIV female 15q49])*[% HIV and mild immune suppression]*(100-[% default under prophylactic TB treatment])
N prophylactic treatment PcP default	Expected cases: HIV+ requiring prophylactic treatment of pneumocystis carinii pneumonia that would default during treatment course	([15q49 male]*[prevalence HIV male 15q49]+[15q49 female]*[prevalence HIV female 15q49])*[% HIV and mild immune suppression]*[% default under prophylactic TB treatment]
N condom distribution through public outlets	Expected cases: Maintenance services potentially provided to public outlets of condoms	[tot pop size]*[frequency outlet service per year]*([% urban population]/[health center urban catchment size]*[number of public outlets per hc urban]+[tot pop size]*(100-[% urban population])/[health center rural catchment size]*[number of public outlets per hc rural])
N HIV school education	Expected number: HIV/AIDS sessions at primary and secondary schools provided by health personnel	([5q9 male]*[primary school enrolment male]*[5q9 female]*[primary school enrolment female])/[average class size primary]*[years of primary education]/5+([10q14 male]*[secondary school enrolment male]+[10q14 female]*[secondary school enrolment female])/[average class size secondary]*[years of secondary education]/5)*[session frequency per class per year]
N syndromic management syphilis women & partners	Expected cases: non-pregnant women in need for syndromic management of syphilis	[15q49 female]*[inc syphilis female]*[% syphilis female sypmptomatic]
N syndromic management cervical infections women & partners	Expected cases: non-pregnant women in need for syndromic management of cervical infections	[15q49 female]*([inc gonorrhoea female]*[% gonorrhoea female symptomatic])+([inc chlamydia female]*[% chlamydia female symptomatic])
N syndromic management vaginal infections women	Expected cases: non-pregnant women in need for syndromic management of vaginal infectionssyphilis	[15q49 female]*[inc trichomoniasis female]*[% trichomoniasis female symptomatic]
A VCT	Number of: persons receiving VCT	[N VCT]*[cove VCT]
A MTCT	Number of: pregnant women receiving treatment to prevent maternal to child transmission	[N MTCT]*[cove MTCT]
A screening HAART	Number of: persons newly tested positive with investigation of immune status	[N screening for HAART monitoring & rx]*[cove VCT]
A monitoring HAART full	Number of: patients monitored for the indication to receive HAART 12 months a years	[N monitoring HAART full]*[cove monitoring HAART]
A monitoring HAART default	Number of: patients that default under monitoring for the indication to receive HAART	[N monitoring HAART default]*[cove monitoring HAART]
A HAART full	Number of: patients receiving highly active antiretroviral treatment for AIDS that will receive a full treatment cycle	[N HAART full]*[cove HAART]
A HAART default	Number of: patients receiving highly active antiretroviral treatment for AIDS that will default during treatment cycle	[N HAART default]*[cove HAART]
A palliative care	Number of: services of palliative care provided to people living with HIV/AIDS	[N palliative care]*[cove palliative care]
A oi local	Number of: local opportunisitic infections treated	[N oi local]*[cove OI local]
A oi systemic ambc	Number of: episodes of systemic opportunistic infections treated on ambulatory basis at primary care level	[N OI systemic]*[cove OI systemic]*(([100-% systemic oi HIV+ 15q49 opdc]-[% systemic oi HIV+ 15q49 ipdc])+[% systemic oi HIV+ 15q49 opdc]*(100-[% referral after contact with HS])+[% systemic oi HIV+ 15q49 ipdc]*(100-[% referral after contact with HS]))
A oi systemic opdc	Number of: episodes of systemic opportunistic infections treated on ambulatory basis with referral to outpatient department	[N OI systemic]*[% systemic oi HIV+ 15q49 opdc]*[cove OI systemic]*[% referral after contact with HS]
A oi systemic ipdc	Number of: episodes of systemic opportunistic infections treated on an inpatient basis	[N OI systemic]*[% systemic oi HIV+ 15q49 ipdc]*[cove OI systemic]*[% referral after contact with HS]
A prophylactic treatment TB full	Number of: patients receiving prophylactic treatment of tuberculosis and receiving the full course of treatment	[N prophylactic treatment TB full]*[cove prophylactic treatment TB sca]
A prophylactic treatment TB default	Number of: patients receiving prophylactic treatment of tuberculosis and defaulting during the course of treatment	[N prophylactic treatment TB default]*[cove prophylactic treatment TB sca]
A prophylactic treatment PcP full	Number of: patients receiving prophylactic treatment of PcP and receiving the full course of treatment	[N prophylactic treatment PcP full]*[cove prophylactic treatment PcP sca]
A prophylactic treatment PcP default	Number of: patients receiving prophylactic treatment of PcP and defaulting during the course of treatment	[N prophylactic treatment PcP default]*[cove prophylactic treatment PcP sca]
A condom distribution pub sector	Number of: maintenance services of public condom outlets provided	[N condom distribution through public outlets]*[cove condom distribution through public outlets sca]
A school teaching	Number of: HIV/AIDS teaching sessions provided at primary and secondary schools by trained health personnel	[N HIV school education]*[cove HIV school education]
A sm syphilis women and partners	Number of cases: non-pregnant women managed syndromatically for syphilis	[N syndromic management syphilis women & partners]*[cove STI syndromic management]
A sm cervical infections women and partners	Number of cases: non-pregnant women managed syndromatically for cervical infections	[N syndromic management cervical infections women & partners]*[cove STI syndromic management]
A sm vaginal infections women	Number of cases: non-pregnant women managed syndromatically for vaginal infections	[N syndromic management vaginal infections women]*[cove STI syndromic management]

Support Functions		
N daily responsibilities disp	Expected: daily responsibilities per year at dispensary level	[tot pop size]*([% urban population]/[dispensary urban catchment size]+(100-[% urban population])/[dispensary rural catchment size])*[working days disp]*52
N daily responsibilities hc	Expected: daily responsibilities per year at health center level	[tot pop size]*([% urban population]/[health center urban catchment size]+(100-[% urban population])/[health center rural catchment size])*[working days hc]*52
N daily responsibilities dh	Expected: daily responsibilities per year at district hospital level	[tot pop size]*([% urban population]/[district hospital urban catchment size]+(100-[% urban population])/[district hospital rural catchment size])*[working days dh]*52
N hmis disp	Expected: information submissions to HMIS per year at dispensary level	[tot pop size]*([% urban population]/[dispensary urban catchment size]+(100-[% urban population])/[dispensary rural catchment size])*[HMIS rep freq per year]
N hmis hc	Expected: information submissions to HMIS per year at health center level	[tot pop size]*([% urban population]/[health center urban catchment size]+(100-[% urban population])/[health center rural catchment size])*[HMIS rep freq per year]
N hmis hosp	Expected: information submissions to HMIS per year at district hospital level	[tot pop size]*([% urban population]/[district hospital urban catchment size]+(100-[% urban population])/[district hospital rural catchment size])*[HMIS rep freq per year]
A pharma mgt disp	Number of: management of supply with pharmaceuticals at dispensary level	[N daily responsibilities disp]*[access to hs]
A pharma mgt hc	Number of: management of supply with pharmaceuticals at health center level	[N daily responsibilities hc]*[access to hs]
A pharma mgt dh	Number of: management of supply with pharmaceuticals at district hospital level	[N daily responsibilities dh]*[access to hs]
A chold chain maint disp	Number of: maintenance of cold chain at dispensary level	[N daily responsibilities disp]*[access to hs]
A chold chain maint hc	Number of: maintenance of cold chain at health center level	[N daily responsibilities hc]*[access to hs]
A cold chain maint dh	Number of: maintenance of cold chain at district hospital level	[N daily responsibilities dh]*[access to hs]
A lab maint hc	Number of: maintenance of laboratory equipment at health center level	[N daily responsibilities hc]*[access to hs]
A lab maint dh	Number of: maintenance of laboratory equipment at district hospital level	[N daily responsibilities dh]*[access to hs]
A equip steriliz hc	Number of: sterilization of equipment at health center level	[N daily responsibilities hc]*[access to hs]
A equip steriliz dh	Number of: sterilization of equipment at district hospital level	[N daily responsibilities dh]*[access to hs]
A radiol equip maint	Number of: maintenance of radiological equipment at district hospital level	[N daily responsibilities dh]*[access to hs]
A HMIS reporting disp	Number of: information collection and submission to HMIS per year at dispensary level	[N hmis disp]*[access to hs]
A HMIS reporting hc	Number of: information collection and submission to HMIS per year at health center level	[N hmis hc]*[access to hs]
A HMIS reporting dh	Number of: information collection and submission to HMIS per year at district hospital level	[N hmis hosp]*[access to hs]

Annex D: Task analysis

Tuberculosis

interventions	contacts	tasks	skill level	infrastructure levels			time weights	quantity of contacts	
				A	B	C		full	default
pulm ss+ ambc	T1AE1	take medical history	5		100%		10.0	1.00	1.00
T1	initial contact	examine physically							
pulmonary smear-positive tuberculosis that receive the full treatment regime per ambulatory services and exclusively at the primary level of care and pulmonary smear-positive tuberculosis that default during the treatment regime provided on an ambulatory basis and exclusively at the primary level of care		counsel							
		order investigation(s)							
		document service							
	T1AE2	update medical history	5		100%		13.2	1.00	1.00
	follow up, initiation of long-term treatment	examine physically							
		counsel							
		document service							
		directly observe treatment	2		100%		5.0	1.00	1.00
	T1AH1	directly observe treatment	2	100%			5.0	95.86	36.57
	directly observed treatment, repeated	document service							
	T1AH2	update medical history	5		100%		8.9	2.00	1.00
	follow up, repeated, with investigations	examine physically							
		counsel							
		order investigation(s)							
		prescribe drugs							
		document service							
		directly observe treatment	2		100%		5.0	2.00	1.00
	T1AH3	update medical history	5		100%		8.9	5.00	1.00
	follow up, repeated, no investigations	examine physically							
		counsel							
		prescribe drugs							
		document service							
		directly observe treatment	2		100%		5.0	5.00	1.00
	T1LA1	inform and instruct patient	7			100%	19.6	9.00	3.00
	sputum smear examination	take sample							
		prepare sample							
		stain sample							
		analyse per microscopy							
		document service							
		clean equipment	1			100%	0.3	9.00	3.00
pulm ss+ ipdc	T2AC1	take medical history	5		100%		10.0	1.00	1.00
T2	initial contact, initiation of referal or admission, emergency	examine physically							
pulmonary smear-positive tuberculosis that receive the full treatment regime provided on an inpatient and ambulatory (primary care) basis plus pulmonary smear-positive tuberculosis that default during the treatment regime provided on an inpatient and ambulatory (primary care) basis		counsel							
		initiate referral/admission							
		document service							
	T2AH1	directly observe treatment	2	100%			5.0	94.14	34.86
	directly observed treatment, repeated	document service							
	T2AH2	update medical history	5		100%		8.9	2.00	1.00
	follow up, repeated, with investigations	examine physically							
		counsel							
		order investigation(s)							
		prescribe drugs							
		document service							
		directly observe treatment	2		100%		5.0	2.00	1.00
	T2AH3	update medical history	5		100%		8.9	5.00	1.00
	follow up, repeated, no investigations	examine physically							
		counsel							
		prescribe drugs							
		document service							
		directly observe treatment	2		100%		5.0	5.00	1.00
	T2XX1	take medical history	6		16%	84%	17.5	1.00	1.00
	initial contact, secondary care level, emergency	examine physically							
		counsel							
		order investigation(s)							
		order treatment							
		initiate admission							
		document service							

interventions	contacts	tasks	skill level	infrastructure levels			time weights	quantity of contacts	
				A	B	C		full	default
	T2DA1	take medical history	6		16%	84%	10.0	2.87	2.87
	medical care, inpatient, repeated	examine physically							
		counsel							
		order investigation(s)							
		order treatment							
		document service							
	T2HD1	take nursing history	3		20%	80%	23.7	3.20	3.20
	nursing care, inpatient, repeated, morning shift	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		prepare bed	1		20%	80%	2.4	3.20	3.20
	T2HD2	take nursing history	3		20%	80%	30.0	7.68	7.68
	nursing care, inpatient, repeated, afternoon & night shift	monitor vital signs							
		administer drugs							
		counsel							
		document service	3		20%	80%			
	T2HF1	take nursing history	3			100%	29.5	0.80	0.80
	nursing care, inpatient, repeated, severe cases, morning, repeated	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		prepare bed	1			100%	25.6	0.80	0.80
		wash and dress							
		feed							
		change position							
	T2HF2	take nursing history	3			100%	26.7	1.60	1.60
	nursing care, inpatient, repeated, severe cases, afternoon & night shift	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		feed	1			100%	13.3	1.60	1.60
		change position							
	T2LA1	inform and instruct patient	7			100%	19.6	9.00	3.00
	sputum smear examination	take sample							
		prepare sample							
		stain sample							
		analyse per microscopy							
		document service							
		clean equipment	1			100%	0.3	9.00	3.00
pulm ss- ambc	T7AE1	take medical history	5		100%		10.0	1.00	1.00
T7	initial contact	examine physically							
pulmonary smear-negative tuberculosis that receive the full treatment regime per ambulatory services and exclusively at the primary level of care plus pulmonary smear-negative tuberculosis that default during the treatment regime provided on an ambulatory basis and exclusively at the primary level of care		counsel							
		order investigation(s)							
		document service							
	T7AE2	update medical history	5		100%		13.2	1.00	1.00
	follow up, initiation of long-term treatment	examine physically							
		counsel							
		document service							
		directly observe treatment	2		100%		5.0	1.00	1.00
	T7AH1	directly observe treatment	2	100%			5.0	95.86	36.57
	directly observed treatment, repeated	document service							
	T7AH3	update medical history	5		100%		8.9	7.00	2.00
	follow up, repeated, no investigations	examine physically							
		counsel							
		prescribe drugs							
		document service							
		directly observe treatment	2		100%		5.0	7.00	2.00
	T7LA1	inform and instruct patient	7			100%	19.6	3.00	3.00
	sputum smear examination	take sample							
		prepare sample							
		stain sample							
		analyse per microscopy							
		document service							
		clean equipment	1			100%	0.3	3.00	3.00

interventions	contacts	tasks	skill level	infrastructure levels			time weights	quantity of contacts	
				A	B	C		full	default
pulm ss- opd	T3AF1	take medical history	5		100%		10.0	1.00	1.00
T3	initial contact	examine physically							
pulmonary smear-negative tuberculosis that receive the full treatment regime per ambulatory services (primary and secondary level of care) plus pulmonary smear-negative tuberculosis that default during the treatment regime provided on an ambulatory basis (primary and secondary level of care)		counsel							
		order investigation(s)							
		document service							
	T3AF2	update medical history	5		100%		10.0	1.00	1.00
	follow up, initiation of referral	examine physically							
		counsel							
		initiate referral							
		document service							
	T3AH1	directly observe treatment	2	100%			5.0	95.86	36.57
	directly observed treatment, repeated	document service							
	T3AH3	update medical history	5		100%		8.9	7.00	2.00
	follow up, repeated, no investigations	examine physically							
		counsel							
		prescribe drugs							
		document service							
		directly observe treatment	2		100%		5.0	7.00	2.00
	T3XX1	take medical history	6			100%	17.5	2.00	2.00
	repeated contact, secondary care level, diagnostic	examine physically							
		counsel							
		order investigation(s)							
		order treatment							
		initiate admission							
		document service							
	T3LA1	inform and instruct patient	7			100%	19.6	3.00	3.00
	sputum smear examination	take sample							
		prepare sample							
		stain sample							
		analyse per microscopy							
		document service							
		clean equipment	1			100%	0.3	3.00	3.00
	T3RA1	inform and instruct patient	8			100%	22.5	2.00	2.00
	x-ray	position patient							
		take image							
		develop film							
		document service							
pulm ss- ipdc	T4AC1	take medical history	5		100%		10.0	1.00	1.00
T4	initial contact, initiation of referal or admission, emergency	examine physically							
pulmonary smear-negative tuberculosis that receive the full treatment regime provided on an inpatient and ambulatory (primary care) basis plus pulmonary smear-negative tuberculosis that default during the treatment regime provided on an inpatient and ambulatory (primary care) basis		counsel							
		initiate referral/admission							
		document service							
	T4AH1	directly observe treatment	2	100%			5.0	93.93	35.37
	directly observed treatment, repeated	document service							
	T4AH3	update medical history	5		100%		8.9	7.00	2.00
	follow up, repeated, no investigations	examine physically							
		counsel							
		prescribe drugs							
		document service							
		directly observe treatment	2		100%		5.0	7.00	2.00
	T4XX1	take medical history	6		16%	84%	17.5	1.00	1.00
	initial contact, secondary care level, emergency	examine physically							
		counsel							
		order investigation(s)							
		order treatment							
		initiate admission							
		document service							
	T4DA1	update medical history	6		16%	84%	10.0	3.37	3.37
	medical care, inpatient, repeated	examine physically							
		counsel							
		order investigation(s)							
		order treatment							
		document service							

interventions	contacts	tasks	skill level	infrastructure levels			time weights	quantity of contacts	
				A	B	C		full	default
	T4HD1	take nursing history	3		20%	80%	23.7	3.60	3.60
	nursing care, inpatient, repeated, morning shift	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		prepare bed	1		20%	80%	2.4	3.60	3.60
	T4HD2	update nursing history	3		20%	80%	30.0	7.20	7.20
	nursing care, inpatient, repeated, afternoon & night shift	monitor vital signs							
		administer drugs							
		counsel							
		document service							
	T4HF1	take nursing history	3			100%	29.5	0.90	0.90
	nursing care, inpatient, repeated, severe cases, morning, repeated	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		prepare bed	1			100%	25.6	0.90	0.90
		wash and dress							
		feed							
		change position							
	T4HF2	update nursing history	3			100%	26.7	1.80	1.80
	nursing care, inpatient, repeated, severe cases, afternoon & night shift	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		feed	1			100%	13.3	1.80	1.80
		change position							
	T4LA1	inform and instruct patient	7			100%	19.6	3.00	3.00
	sputum smear examination	take sample							
		prepare sample							
		stain sample							
		analyse per microscopy							
		document service							
		clean equipment	1			100%	0.3	3.00	3.00
	T4RA1	inform and instruct patient	8			100%	22.5	2.00	2.00
	x-ray	position patient							
		take image							
		develop film							
		document service							
xpulm ambc	T8AD1	take medical history	5		100%		8.8	1.00	1.00
T8	initial contact	examine physically							
extrapulmonary smear-negative tuberculosis that default during the treatment regime provided on an inpatient and ambulatory (primary care) basis plus extrapulmonary tuberculosis that default during the treatment regime provided on an ambulatory basis and exclusively at the primary level of care		counsel							
		document service							
	T8AH1	directly observe treatment	2	100%			5.0	95.86	36.57
	directly observed treatment, repeated	document service							
	T8AH3	update medical history	5		100%		8.9	7.00	2.00
	follow up, repeated, no investigations	examine physically							
		counsel							
		prescribe drugs							
		document service							
		directly observe treatment	2		100%		5.0	7.00	2.00
xpulm opdc	T5AC1	take medical history	5		100%		10.0	2.00	2.00
T5	initial contact, initiation of referal or admission, emergency	examine physically							
extrapulmonary tuberculosis that receive the full treatment regime per ambulatory services (primary and secondary level of care) plus extrapulmonary tuberculosis that default during the treatment regime provided on an ambulatory basis (primary and secondary level of care)		counsel							
		initiate referral							
		document service							
	T5AH1	directly observe treatment	2	100%			5.0	95.86	36.57
	directly observed treatment, repeated	document service							
	T5AH3	update medical history	5		100%		8.9	7.00	2.00
	follow up, repeated, no investigations	examine physically							
		counsel							
		prescribe drugs							
		document service							
		directly observe treatment	2		100%		5.0	7.00	2.00

interventions	contacts	tasks	skill level	infrastructure levels			time weights	quantity of contacts	
				A	B	C		full	default
	T5XX1	take medical history	5			100%	17.5	2.00	2.00
	single contact, secondary care level, diagnostic	examine physically							
		counsel							
		order investigation(s)							
		order treatment							
		initiate admission							
		document service							
	T5LB1	inform and instruct patient	6			100%	7.3	0.75	0.75
	cytological investigation	take sample							
		prepare sample	7			100%	14.5	0.75	0.75
		stain sample							
		analyse per microscopy							
		document service							
		clean equipment	1			100%	1.1	0.75	0.75
	T5RA1	inform and instruct patient	8			100%	22.5	1.50	1.50
	x-ray	position patient							
		take image							
		develop film							
		document service							
xpulm ipdc	T6AC1	take medical history	5		100%		10.0	1.00	1.00
T6	initial contact, initiation of referal or admission, emergency	examine physically							
extrapulmonary tuberculosis that receive the full treatment regime provided on an inpatient and ambulatory (primary care) basis and extrapulmonary tuberculosis that default during the treatment regime provided on an inpatient and ambulatory (primary care) basis		counsel							
		initiate referral/admission							
		document service							
	TXAH1	directly observe treatment	2	100%			5.0	93.71	34.43
	directly observed treatment, repeated	document service							
	T1AH3	update medical history	5		100%		8.9	7.00	2.00
	follow up, repeated, no investigations	examine physically							
		counsel							
		prescribe drugs							
		document service							
		directly observe treatment	2		100%		5.0	7.00	2.00
	T2XX1	take medical history	6		16%	84%	17.5	1.00	1.00
	initial contact, secondary care level, emergency	examine physically							
		counsel							
		order investigation(s)							
		order treatment							
		initiate admission							
		document service							
	T2DA1	update medical history	5		16%	84%	10.0	3.87	3.87
	medical care, inpatient, repeated	examine physically							
		counsel							
		order investigation(s)							
		order treatment							
		document service							
	XHD1	take nursing history	3		20%	80%	23.7	4.00	4.00
	nursing care, inpatient, repeated, morning shift	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		prepare bed	1		20%	80%	2.4	4.00	4.00
	XHD2	update nursing history	3		20%	80%	30.0	8.00	8.00
	nursing care, inpatient, repeated, afternoon & night shift	monitor vital signs							
		administer drugs							
		counsel							
		document service							
	XHF1	take nursing history	3			100%	29.5	1.00	1.00
	nursing care, inpatient, repeated, severe cases, morning, repeated	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		prepare bed	1			100%	25.6	1.00	1.00
		wash and dress							
		feed							
		change position							

interventions	contacts	tasks	skill level	infrastructure levels			time weights	quantity of contacts	
				A	B	C		full	default
	XHF2	update nursing history	3			100%	26.7	2.00	2.00
	nursing care, inpatient, repeated, severe cases, afternoon & night shift	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		feed	1			100%	13.3	2.00	2.00
		change position							
	T6LB1	inform and instruct patient	5			100%	7.3	0.75	0.75
	cytological investigation	take sample							
		prepare sample	7			100%	14.5	0.75	0.75
		stain sample							
		analyse per microscopy							
		document service							
		clean equipment	1			100%	1.1	0.75	0.75
	T3RA1	inform and instruct patient	8			100%	22.5	1.50	1.50
	x-ray	position patient							
		take image							
		develop film							
		document service							

Malaria

intervention	contact	tasks	skill level	infrastructure level			time weight	quantity of contacts	
			primary	A	B	C		full	default
mal dx rx ambc	M1AA1	take medical history	5	100%			8.7	0.90	
M1	initial contact, no investigations	examine physically							
malaria diagnosed and treated on an ambulatory basis		counsel							
		prescribe drugs							
		document service							
		provide drugs	1	100%			3.5	0.90	
	M1AB1	take medical history	5		100%		9.0	0.10	
	initial contact, with investigations	examine physically							
		counsel							
		order investigation(s)							
		prescribe drugs							
		document service							
		provide drugs	9		100%		3.5	0.10	
	M1AH2	update medical history	5	100%			13.4	0.18	
	follow up	examine physically							
		counsel							
		prescribe drugs							
		document service							
		provide drugs	9	100%			3.5	0.18	
	M1LD1	inform and instruct patient	7		100%		16.4	0.10	
	malaria parasitology examination	take sample							
		prepare sample							
		stain sample							
		analyse per microscopy							
		document service							
		clean equipment	1		100%		0.2	0.10	
	M1LE1	inform and instruct patient	7		100%		11.8	0.05	
	hemoglobin analysis	take sample							
		prepare sample							
		perform photometer analysis							
		document service							
		clean equipment	1		100%		0.3	0.05	
mal dx rx ipdc	M2AC1	take medical history	5	100%			12.0	1.00	
M2	initial contact, initiation of referal, diagnostic	examine physically							
malaria diagnosed and treated on an inpatient care basis		order investigation(s)							
		counsel							
		administer emergency treatment							
		initiate referral							
		document service							
	M2XX1	take medical history	5		16%	84%	15.0	1.00	
	initial contact, secondary care level, emergency	examine physically							
		counsel							
		order investigation(s)							
		order treatment							
		initiate admission							
		document service							
	M2DA1	update medical history	5		16%	84%	15.0	2.00	
	medical care, inpatient, repeated	examine physically							
		counsel							
		order investigation(s)							
		order treatment							
		document service							
	M2HD1	take nursing history	3		20%	80%	23.7	2.70	
	nursing care, inpatient, repeated, morning shift	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		prepare bed	1		20%	80%	2.4	2.70	
	M2HD2	update nursing history	3		20%	80%	30.0	5.40	
	nursing care, inpatient, repeated, afternoon & night shift	monitor vital signs							
		administer drugs							
		counsel							
		document service							

intervention	contact	tasks	skill level	infrastructure level			time weight	quantity of contacts	
			primary	A	B	C		full	default
	M2HF1	update nursing history	3			100%	29.5	0.30	
	nursing care, inpatient, repeated, severe cases, morning, repeated	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		prepare bed	1			100%	25.6	0.30	
		wash and dress							
		feed							
		change position							
	M2HF2	update nursing history	3			100%	26.7	0.60	
	nursing care, inpatient, repeated, severe cases, afternoon & night shift	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		feed	1			100%	13.3		
		change position							
	M2LD1	inform and instruct patient	7		16%	84%	16.4	1.00	
	malaria parasitology examination	take sample							
		prepare sample							
		stain sample							
		analyse per microscopy							
		document service							
		clean equipment	1		16%	84%	0.2	1.00	
	M2LE1	inform and instruct patient	7		16%	84%	11.8	1.00	
	hemoglobin analysis	take sample							
		prepare sample							
		perform photometer analysis							
		document service							
		clean equipment	1		16%	84%	0.3	1.00	
ma itn provision	M3AB1	counsel and educate	13	100%			7.8	1.00	
M3	single contact, primary care level	document service							
insecticide treated nets provided		provide itn	1	100%			2.2	1.00	

Childhood diseases

intervention	contact	tasks	skill level	infrastructure level			time weight	quantity of contacts	
			primary	A	B	C		full	default
IMCI no malnutr/anemia ambc	I1AA1	document weight/age	1	100%			4.4	1.0	
I1	initial contact	check immunization status							
conditions except malnutrition (stunting, wasting) and anemia among children under 5 years that receive ambulatory care		take medical history	15	100%			11.9	1.0	
		examine physically							
		counsel							
		prescribe drugs							
		document service							
		provide drugs	9	100%			3.5	1.0	
	I1AH2	update medical history	3	100%			10.0	0.2	
	follow up	examine physically							
		counsel							
		document service							
IMCI malnutr/anemia ambc	I2AA2	document weight/age	1	100%			3.7	1.0	
I2	initial contact	check immunization status							
conditions of malnutrition (stunting, wasting) and anemia among children under 5 years that receive ambulatory care		take medical history	15	100%			12.3	1.0	
		examine physically							
		counsel							
		document service							
	I2AH2	update medical history	15	100%			10.0	0.2	
	follow up	examine physically							
		counsel							
		document service							
multiple IMCI conditions ambc	I3AA1	document weight/age	1	100%			3.7	1.0	
I3	initial contact	check immunization status							
multiple IMCI conditions among children under 5 years that receive ambulatory treatment		take medical history	15	100%			12.3	1.0	
		examine physically							
		counsel							
		prescribe drugs							
		document service							
		provide drugs	9	100%				1.0	
	I3AH2	update medical history	15	100%			10.0	0.2	
	follow up	examine physically							
		counsel							
		document service							
IMCI ipdc	I4AC1	document weight/age	1	100%			2.3	1.0	
I4	initial contact, initiation of referal or admission, emergency	check immunization status							
IMCI disease that receive inpatient care		take medical history	15	100%			12.7	1.0	
		examine physically							
		counsel							
		administer emergency treatment							
		initiate referral							
		document service							
	I4XX1	take medical history	6			100%	17.5	1.0	
	initial contact, secondary care level, emergency	examine physically							
		counsel							
		order investigation(s)							
		order treatment							
		initiate admission							
		document service							
	I4DA1	update medical history	6			100%	25.0	2.0	
	medical care, inpatient, repeated	examine physically							
		counsel							
		order investigation(s)							
		order treatment							
		document service							
	I4HD1	take nursing history	3			100%	23.7	2.4	
	nursing care, inpatient, repeated, morning shift	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		prepare bed	1			100%	2.4	2.4	

intervention	contact	tasks	skill level	infrastructure level			time weight	quantity of contacts	
			primary	A	B	C		full	default
	I4HD2	update nursing history	3			100%	30.0	4.8	
	nursing care, inpatient, repeated, afternoon & night shift	monitor vital signs							
		administer drugs							
		counsel							
		document service							
	I4HF1	take nursing history	3			100%	29.5	0.6	
	nursing care, inpatient, repeated, severe cases, morning, repeated	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		prepare bed	1			100%	25.6	0.6	
		wash and dress							
		feed							
		change position							
	I4HF2	update nursing history	3			100%	26.7	0.6	
	nursing care, inpatient, repeated, severe cases, afternoon & night shift	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		feed	1			100%	13.3	0.6	
		change position							
	I4LE4	inform and instruct patient	7			100%	11.8	0.3	
	hemoglobin analysis	take sample							
		prepare sample							
		analyse per photometer							
		document service							
		clean equipment	1			100%		0.3	
	I4LI4	inform and instruct patient	7			100%	33.5	0.3	
	white blood count	take sample							
		prepare sample							
		analyse per microscopy							
		document service							
		clean equipment	1			100%	0.4	0.3	
	I4LJ4	informing and instructing pat	7			100%	25.0	0.3	
	leucocyte differential	take sample							
		prepare thin film							
		stain sample							
		analyse per microscopy							
		document service							
		clean equipment	1			100%	0.6	0.3	
	I4LC4	informing and instructing pat	8			100%	27.5	0.3	
	x-ray	position patient							
		take image							
		develop film							
		document service							
epi total	I5AB1	counsel	3	100%			10.0	1.0	
I5	repeated contacts, primary care level	administer vaccines							
Expanded Program on Immunization		document service							

Motherhood related conditions and diseases

intervention	contact	tasks	skill level			infrastructure level			time weight	quantity of contacts	
			HRH 1	HRH 2	HRH 3	A	B	C		full	default
anc	S1AB1	take medical history	14			100%			26.5	1.0	
S1	initial contact	examine physically									
pregnant women receiving antenatal care		counsel									
		order investigation(s)									
		test for urinary protein									
		prescribe drugs									
		document service									
		provide drugs	9						3.5	1.0	
	S1AI1	update medical history	14			100%			11.5	3.0	
	follow up, repeated, with investigations	examine physically									
		counsel									
		order investigation(s)									
		test for urinary protein									
		prescribe drugs									
		document service									
		provide drugs	9			100%			3.5	3.0	
	S1LE1	inform and instruct patient	7				100%		24.0	0.4	
	hemoglobin analysis	take sample									
		prepare sample									
		analyse per photometer									
		document service									
		clean equipment	1				100%		1.1	0.4	
	S1LF1	inform and instruct patient	7				100%		24.0	0.4	
	ABO Rh blood group test	take sample									
		prepare sample									
		analyse sample									
		document service									
		clean equipment	1				100%		1.1	0.4	
	S1LG1	inform and instruct patient	7				100%		25.8	0.4	
	RPR syphilis	take sample									
		prepare sample									
		analyse sample									
		document service									
		clean equipment	1				100%		0.8	0.4	
	S1 LH1	inform and instruct patient	7				100%		26.3	0.4	
	HIV rapid test	take sample									
		prepare sample									
		analyse sample									
		document service									
		clean equipment	1				100%		1.1	0.4	
clinical anemia ambc	S2AB1	take medical history	4				100%		16.5	1.0	
S2	initial contact	examine physically									
pregnant women with severe anemia receiving ambulatory care		order investigation(s)									
		prescribe drugs									
		document service									
		counsel									
		provide drugs	9				100%		3.5	1.0	
	S2AH1	update medical history	4				100%		16.5	1.0	
	follow up	examine physically									
		prescribe drugs									
		document service									
		counsel									
		provide drugs	9				100%		3.5	1.0	
	S2LE1	inform and instruct patient	7				100%		11.8	1.0	
	hemoglobin analysis	take sample									
		prepare sample									
		analyse sample									
		document service									
		clean equipment	1				100%		0.3	1.0	
clinical anemia ipdc	S3AC1	take medical history	4			100%			17.5	1.0	
S3	initial contact, initiation of referal or admission, emergency	examine physically									
pregnant women with very severe anemia receiving inpatient care		order investigation(s)									
		initiate referral									
		document service									
		counsel									

intervention	contact	tasks	skill level			infrastructure level			time weight	quantity of contacts	
			HRH 1	HRH 2	HRH 3	A	B	C		full	default
	S3XX1	take medical history	6					100%	20.0	1.0	
	initial contact, secondary care level, emergency	examine physically									
		initiate admission									
		order investigation(s)									
		order treatment									
		document service									
		counsel									
	S3DA1	update medical history	6					100%	15.0	1.0	
	medical care, inpatient, repeated	examine physically									
		counsel									
		order investigation(s)									
		order treatment									
		document service									
	S3HD1	take nursing history	3					100%	23.7	1.9	
	nursing care, inpatient, repeated, morning shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		prepare bed	1					100%	2.4	1.9	
	S3HD2	update nursing history	3					100%	30.0	3.8	
	nursing care, inpatient, repeated, afternoon & night shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
	S3HF1	take nursing history	3					100%	29.5	0.1	
	nursing care, inpatient, repeated, severe cases, morning, repeated	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		prepare bed	1					100%	25.6	0.1	
		wash and dress									
		feed									
		change position									
	S3HF2	update nursing history	3					100%	26.7	0.2	
	nursing care, inpatient, repeated, severe cases, afternoon & night shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		feed	1					100%	13.3	0.2	
		change position									
	S3LE1	inform and instruct patient	7					100%	11.8	1.0	
	hemoglobin analysis	take sample									
		prepare sample									
		analyse per photometer									
		document service									
		clean equipment	1					100%	0.3	1.0	
	S3LF1	inform and instruct patient	7					100%	24.0	1.0	
	ABO Rh blood group test	take sample									
		prepare sample									
		analyse sample									
		document service									
		clean equipment	1					100%	1.1	1.0	
	S3 LH1	inform and instruct patient	7					100%	26.3	1.0	
	HIV rapid test	take sample									
		prepare sample									
		analyse sample									
		document service									
		clean equipment	1					100%	1.1	1.0	
	S3IA1	inform and instruct patient	3					100%	60.0	1.0	
	blood transfusion	collect blood from donor									
		administer drugs									
		transfuse blood to receptor									
		monitor vital signs of donor									
		monitor vital signs of receptor									
		document service									

intervention	contact	tasks	skill level			infrastructure level			time weight	quantity of contacts	
			HRH 1	HRH 2	HRH 3	A	B	C		full	default
SBA	S7AA1	take medical history	4				100%		15.0	1.0	
S7	initial contact	examine physically									
women giving birth under skilled birth attendance (SBA)		monitor vital signs									
		examine birth progress									
		counsel									
		document service									
	S7AG1	monitor vital signs	4				100%		20.0	4.0	
	follow up, repeated	examine birth progress									
		counsel									
		document service									
	S7AG2	inform and instruct patient	4				100%		12.5	0.4	
	follow up, repeated, birth induction, birth stage II [per hour]	administer drugs									
		document service									
	S7AG3	monitor vital signs	4				100%		15.0	4.0	
	follow up, repeated, post partum monitoring [per hour]	counsel									
		document service									
	S7IB1	deliver baby and placenta	4				100%		25.0	0.7	
	birth	care for newborn									
		administer drugs									
		massage uterus									
		inspect									
		counsel									
		document service									
	S7IC1	inform and instruct patient	4				100%		36.0	0.3	
	birth, complicated	perform episotomie & evtl. rupture membranes									
		deliver baby and placenta									
		care for newborn									
		administer drugs									
		massage uterus									
		inspect									
		repair episotomie and/or tears									
		document service									
	S7IG1	open airways	4				100%		15.0		
	resuscitation, newborn	support respiration									
		examine physically									
		administer drugs									
		monitor vital signs									
		counsel									
		document service									
haemorrhage	S8AC1	take medical history	4			100%			15.0	1.0	
S8	initial contact, initiation of referal or admission, emergency	examine physically									
women giving birth complicated by hemorrhage that receive care		initiate referral									
		document service									
		counsel									
	S8XX1	take medical history	6				40%	60%	20.0	1.0	
	initial contact, secondary care level, emergency	examine physically									
		initiate admission									
		order investigation(s)									
		order treatment									
		counsel									
		document service									
	S8DA1	take history update	6				40%	60%	15.0	1.5	
	medical care, inpatient, repeated	examine physically									
		order investigation(s)									
		order treatment									
		document service									
		counsel									
	S8HD1	take nursing history	3				50%	50%	23.7	2.0	
	nursing care, inpatient, repeated, morning shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		prepare bed	1				50%	50%	2.4	2.0	

intervention	contact	tasks	skill level			infrastructure level			time weight	quantity of contacts	
			HRH 1	HRH 2	HRH 3	A	B	C		full	default
	S8HD2	update nursing history	3				50%	50%	30.0	4.0	
	nursing care, inpatient, repeated, afternoon & night shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
	S8HF1	take nursing history	3					100%	29.5	0.5	
	nursing care, inpatient, repeated, severe cases, morning, repeated	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		prepare bed	1					100%	25.6	0.5	
		wash and dress									
		feed									
		change position									
	S8HF2	update nursing history	3					100%	26.7	1.0	
	nursing care, inpatient, repeated, severe cases, afternoon & night shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		feed	1					100%	13.3	1.0	
		change position									
	S8LE1	inform and instruct patient	7				40%	60%	11.8	1.0	
	hemoglobin analysis	take sample									
		prepare sample									
		analyse per photometer									
		document service									
		clean equipment	1				40%	60%	0.3	1.0	
	S8LF1	inform and instruct patient	7				40%	60%	24.0	1.0	
	ABO Rh blood group test	take sample									
		prepare sample									
		analyse sample									
		document service									
		clean equipment	1				40%	60%	1.1	1.0	
	S8LH1	inform and instruct patient	7				40%	60%	26.3	1.0	
	HIV rapid test	take sample									
		prepare sample									
		analyse sample									
		document service									
		clean equipment	1				40%	60%	1.1	1.0	
	S8IA1	inform and instruct patient	3					100%	60.0	0.5	
	blood transfusion	collect blood from donor									
		administer drugs									
		transfuse blood to receptor									
		monitor vital signs of donor									
		monitor vital signs of receptor									
		document service									
	S8ID1	inform and instruct patient	4				40%	60%	30.0	0.6	
	clinical management, hemorrhage	massage uterus									
		catherization									
		repair episotomie and/or tears									
		document service									
eclampsia	S9AC1	take medical history	4			100%			20.0	1.0	
S9	initial contact, initiation of referal or admission, emergency	examine physically									
pregnant women with eclampsia receiving care		test for urinary protein									
		administer emergency treatment									
		initiate referral									
		counsel									
		document service									
	S9XX1	take medical history	6					100%	15.0	1.0	
	initial contact, secondary care level, emergency	examine physically									
		initiate admission									
		order investigation(s)									
		order treatment									
		document service									
		counsel									

intervention	contact	tasks	skill level			infrastructure level			time weight	quantity of contacts	
			HRH 1	HRH 2	HRH 3	A	B	C		full	default
	S9DA1	update medical history	6					100%	15.0	6.0	
	medical care, inpatient, repeated	examine physically									
		order investigation(s)									
		order treatment									
		document service									
		counsel									
	S9HD1	take nursing history	3					100%	23.7	5.6	
	nursing care, inpatient, repeated, morning shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		prepare bed	1					100%	2.4	5.6	
	S9HD2	update nursing history	3					100%	30.0	11.2	
	nursing care, inpatient, repeated, afternoon & night shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
	S9HF1	take nursing history	3					100%	29.5	1.4	
	nursing care, inpatient, repeated, severe cases, morning, repeated	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		prepare bed	1					100%	25.6	1.4	
		wash and dress									
		feed									
		change position									
	S9HF2	update nursing history	3					100%	26.7	2.8	
	nursing care, inpatient, repeated, severe cases, afternoon & night shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		feed	1					100%	13.3	2.8	
		change position									
	S9LE1	inform and instruct patient	7					100%	11.8	1.0	
	hemoglobin analysis	take sample									
		prepare sample									
		analyse per photometer									
		document service									
		clean equipment	1					100%	0.3	1.0	
	S9LF1	inform and instruct patient	7					100%	24.0	1.0	
	ABO Rh blood group test	take sample									
		prepare sample									
		analyse sample									
		document service									
		clean equipment	1					100%	1.1	1.0	
	S9LH1	inform and instruct patient	7					100%	26.3	1.0	
	HIV rapid test	take sample									
		prepare sample									
		analyse sample									
		document service									
		clean equipment	1					100%	1.1	1.0	
	S9LI1	inform and instruct patient	7					100%	33.5	1.0	
	white blood count	take sample									
		prepare sample									
		analyse per microscopy									
		document service									
		clean equipment	1					100%	0.4	1.0	
	S9LJ1	inform and instruct patient	7					100%	25.0	1.0	
	leucocyte differential	take sample									
		prepare sample									
		stain sample									
		analyse per microscopy									
		document service									
		clean equipment	1					100%	0.6	1.0	

intervention	contact	tasks	skill level			infrastructure level			time weight	quantity of contacts	
			HRH 1	HRH 2	HRH 3	A	B	C		full	default
	S9IE1	update medical history	16					100%	50.0	0.1	
	caesarean section	inform and instruct patient									
		document service									
		dress wound		17	18			100%	35.7	0.1	
		prepare patient									
		administer anaesthesia and supportive rx									
		perform surgical procedure									
obstructed labour	S10AC1	take medical history	4				100%		15.0	1.0	
S10	initial contact, initiation of referal or admission, emergency	examine physically									
women giving birth complicated by obstruted labor receiving care (cesarean section)		initiate referral									
		counsel									
		document service									
	S10XX1	take medical history	6					100%	15.0	1.0	
	initial contact, secondary care level, emergency	examine physically									
		initiate admission									
		order investigation(s)									
		order treatment									
		document service									
		counsel									
	S10DA1	update medical history	6					100%	15.0	6.0	
	medical care, inpatient, repeated	examine physically									
		order investigation(s)									
		order treatment									
		document service									
		counsel									
	S10HD1	take nursing history	3					100%	23.7	5.6	
	nursing care, inpatient, repeated, morning shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		prepare bed	1					100%	2.4	5.6	
	S10HD2	update nursing history	3					100%	30.0	11.2	
	nursing care, inpatient, repeated, afternoon & night shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
	S10HF1	take nursing history	3					100%	29.5	1.4	
	nursing care, inpatient, repeated, severe cases, morning, repeated	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		prepare bed	1					100%	25.6	1.4	
		wash and dress									
		feed									
		change position									
	S10HF2	update nursing history	3					100%	26.7	2.8	
	nursing care, inpatient, repeated, severe cases, afternoon & night shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		feed	1					100%	13.3	2.8	
		change position									
	S10LE1	inform and instruct patient	7					100%	11.8	1.0	
	hemoglobin analysis	take sample									
		prepare sample									
		analyse per photometer									
		document service									
		clean equipment	1					100%	0.3	1.0	
	S10LF1	inform and instruct patient	7					100%	24.0	1.0	
	ABO Rh blood group test	take sample									
		prepare sample									
		analyse sample									
		document service									
		clean equipment	1					100%	1.1	1.0	

intervention	contact	tasks	skill level			infrastructure level			time weight	quantity of contacts	
			HRH 1	HRH 2	HRH 3	A	B	C		full	default
	S10LH1	inform and instruct patient	7					100%	26.3	1.0	
	HIV rapid test	take sample									
		prepare sample									
		analyse sample									
		document service									
		clean equipment	1					100%	1.1	1.0	
	S10IE1	update medical history	16					100%	50.0	1.0	
	caesarean section	inform and instruct patient									
		document service									
		dress wound		17	18			100%	35.7	1.0	
		prepare patient									
		administer anaesthesia and supportive rx									
		perform surgical procedure									
puerperal sepsis	S11AC1	take medical history	4			100%			15.0	1.0	
S11	initial contact, initiation of referal or admission, emergency	examine physically									
Puerperal sepsis		administer emergency treatment									
		initiate referral									
		counsel									
		document service									
	S11XX1	take medical history	5				40%	60%	15.0	1.0	
	initial contact, secondary care level, emergency	examine physically									
		initiate admission									
		order investigation(s)									
		order treatment									
		document service									
		counsel									
	S11DA1	take history update	5				40%	60%	15.0	4.0	
	medical care, inpatient, repeated	examine physically									
		order investigation(s)									
		order treatment									
		document service									
		counsel									
	S11HD1	take nursing history	3				50%	50%	23.7	4.0	
	nursing care, inpatient, repeated, morning shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		prepare bed	1				50%	50%	2.4	4.0	
	S11HD2	update nursing history	3				50%	50%	30.0	8.0	
	nursing care, inpatient, repeated, afternoon & night shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
	S11HF1	take nursing history	3					100%	29.5	1.0	
	nursing care, inpatient, repeated, severe cases, morning, repeated	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		prepare bed	1					100%	25.6	1.0	
		wash and dress									
		feed									
		change position									
	S11HF2	update nursing history	3					100%	26.7	2.0	
	nursing care, inpatient, repeated, severe cases, afternoon & night shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		feed	1					100%	13.3	2.0	
		change position									

intervention	contact	tasks	skill level			infrastructure level			time weight	quantity of contacts	
			HRH 1	HRH 2	HRH 3	A	B	C		full	default
	S11LE1	inform and instruct patient	7				40%	60%	11.8	1.0	
	hemoglobin analysis	take sample									
		prepare sample									
		analyse per photometer									
		document service									
		clean equipment	1				40%	60%	0.3	1.0	
	S11LF1	inform and instruct patient	7				40%	60%	24.0	1.0	
	ABO Rh blood group test	take sample									
		prepare sample									
		analyse sample									
		document service									
		clean equipment	1				40%	60%	1.1	1.0	
	S11LI1	inform and instruct patient	7				40%	60%	33.5	1.0	
	white blood count	take sample									
		prepare sample									
		analyse per microscopy									
		document service									
		clean equipment	1				40%	60%	0.4	1.0	
	S9LJ1	inform and instruct patient	7				40%	60%	25.0	1.0	
	leucocyte differential	take sample									
		prepare sample									
		stain sample									
		analyse per microscopy									
		document service									
		clean equipment	1				40%	60%	0.6	1.0	
nb complications	S12XX1	take medical history	5					100%	20.0	1.0	
S12	initial contact, secondary care level, emergency	examine physically									
newborns with postnatal complications receiving care		initiate admission									
		order investigation(s)									
		order treatment									
		document service									
		counsel									
	S12DA1	update medical history	5					100%	15.0	5.0	
	medical care, inpatient, repeated	examine physically									
		order investigation(s)									
		order treatment									
		document service									
		counsel									
	S12HD1	take nursing history	3					100%	23.7	3.0	
	nursing care, inpatient, repeated, morning shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		prepare bed	1					100%	2.4	3.0	
	S12HD2	update nursing history	3					100%	30.0	6.0	
	nursing care, inpatient, repeated, afternoon & night shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
	S12HF1	take nursing history	3					100%	29.5	3.0	
	nursing care, inpatient, repeated, severe cases, morning, repeated	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		prepare bed	1					100%	25.6	3.0	
		wash and dress									
		feed									
		change position									
	S12HF2	update nursing history	3					100%	26.7	6.0	
	nursing care, inpatient, repeated, severe cases, afternoon & night shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		feed	1					100%	13.3	6.0	
		change position									

intervention	contact	tasks	skill level			infrastructure level			time weight	quantity of contacts	
			HRH 1	HRH 2	HRH 3	A	B	C		full	default
	S12LE1	inform and instruct patient	7					100%	11.8	0.2	
	hemoglobin analysis	take sample									
		prepare sample									
		analyse per photometer									
		document service									
		clean equipment	1					100%	0.3	0.2	
	S12LF1	inform and instruct patient	7					100%	24.0	0.2	
	ABO Rh blood group test	take sample									
		prepare sample									
		analyse sample									
		document service									
		clean equipment	1					100%	1.1	0.2	
	S12LI1	inform and instruct patient	7					100%	33.5	0.2	
	white blood count	take sample									
		prepare sample									
		analyse per microscopy									
		document service									
		clean equipment	1					100%	0.4	0.2	
	S12LJ1	inform and instruct patient	7					100%	25.0	0.2	
	leucocyte differential	take sample									
		prepare sample									
		stain sample									
		analyse per microscopy									
		document service									
		clean equipment	1					100%	0.6	0.2	
post partum care	S13AA1	take medical history	14			100%			11.5	1.0	
S13	repeated contacts, primary care level	examine physically									
women receiving postpartum care		prescribe drugs									
		document service									
		counsel									
		provide drugs	9			100%			3.5	1.0	
abortion complications	S14AC1	take medical history	4			100%			15.0	1.0	
S14	initial contact, initiation of referal or admission, emergency	examine physically									
women after abortions receiving care		administer emergency treatment									
		initiate referral									
		counsel									
		document service									
	S14XX1	take medical history	5					100%	37.5	1.0	
	initial contact, secondary care level, emergency	examine physically									
		initiate admission									
		order treatment									
		order investigation(s)									
		counsel									
		document service									
	S14DA1	update medical history	5					100%	20.0	5.0	
	medical care, inpatient, repeated	examine physically									
		order investigation(s)									
		order treatment									
		document service									
		counsel									
	S14HD1	take nursing history	3					100%	23.7	4.8	
	nursing care, inpatient, repeated, morning shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		prepare bed	1					100%	2.4	4.8	
	S14HD2	update nursing history	3					100%	30.0	9.6	
	nursing care, inpatient, repeated, afternoon & night shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									

intervention	contact	tasks	skill level			infrastructure level			time weight	quantity of contacts	
			HRH 1	HRH 2	HRH 3	A	B	C		full	default
	S14HF1	take nursing history	3					100%	29.5	1.2	
	nursing care, inpatient, repeated, severe cases, morning, repeated	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		prepare bed	1					100%	25.6	1.2	
		wash and dress									
		feed									
		change position									
	S14HF2	update nursing history	3					100%	26.7	2.4	
	nursing care, inpatient, repeated, severe cases, afternoon & night shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		feed	1					100%	13.3	2.4	
		change position									
	S14LE1	inform and instruct patient	7					100%	11.8	0.8	
	hemoglobin analysis	take sample									
		prepare sample									
		analyse per photometer									
		document service									
		clean equipment	1					100%	0.3	0.8	
	S14LF1	inform and instruct patient	7					100%	24.0	0.8	
	ABO Rh blood group test	take sample									
		prepare sample									
		analyse sample									
		document service									
		clean equipment	1					100%	1.1	0.8	
	S14LI1	inform and instruct patient	7					100%	33.5	0.8	
	white blood count	take sample									
		prepare sample									
		analyse per microscopy									
		document service									
		clean equipment	1					100%	0.4	0.8	
	S14LJ1	take medical history									
	leucocyte differential	inform and instruct patient	7					100%	25.0	0.8	
		take sample									
		prepare sample									
		stain sample									
		analyse per microscopy									
		document service									
		clean equipment	1					100%	0.6	0.8	
	S14IA1	inform and instruct patient	3					100%	60.0	0.1	
	blood transfusion	collect blood from donor									
		administer drugs									
		transfuse blood to receptor									
		monitor vital signs of donor									
		monitor vital signs of receptor									
		document service									
	S14II1	update medical history	4					100%	37.5	0.4	
	repair of vaginal & cervical lacerations	inform and instruct patient									
		give local anaesthesia									
		inspect and repair lacerations									
		document service									
	S14IJ1	update medical history	16					100%	30.0	0.8	
	intervention uterine evacuation/curetage	inform and instruct patient									
		administer drugs									
		exam and perform aspiration or curretage									
		document service									
	S14IK1	update medical history	16					100%	90.0	0.1	
	repair of uterine perforations/hysterectomie	inform and instruct patient									
		document service									
		administer anaesthesia and supportive rx		17	18			100%	71.5	0.1	
		prepare patient									
		perform surgical procedure									
		dress wound									

intervention	contact	tasks	skill level			infrastructure level			time weight	quantity of contacts	
			HRH 1	HRH 2	HRH 3	A	B	C		full	default
fp recurrent	S15AA1	take medical history	14			100%			29.0	0.3	
S15	initial contact	counsel									
women receiving family planning (recurrent methods)		provide condoms, pills or administer injection									
		document service									
	S15AH1	update medical history	14			100%			15.0	3.7	
	follow up, repeated	counsel									
		provide condoms, pills or administer injection									
		document service									
fp iud	S16AA1	take medical history	14			100%			20.0	1.0	
S16	initial contact	counsel									
women receiving family planning (intrauterine device)		document service									
	S16AH1	update medical history	14			100%			15.0	1.0	
	follow up, initiation of referral	initiate referral									
		counsel									
		document service									
	S16AH2	update medical history	14			100%			15.0	1.0	
	follow up, post intervention	examine physically									
		counsel									
		document service									
	S16IL1	take medical history	4				100%		22.5	1.0	
	IUD insertion	examine physically									
		counsel									
		insert iud									
		document service									
fp surgical	S17AA1	take medical history	14			100%			20.0	1.0	
S17	initial contact	counsel									
women receiving family planning (sterilization)		document service									
	S17AH1	update medical history	14			100%			15.0	1.0	
	follow up, initiation of referral	initiate referral									
		counsel									
		document service									
	S17AH2	update medical history	14			100%			15.0	1.0	
	follow up, post intervention	examine physically									
		counsel									
		document service									
	S17DA1	update medical history	5					100%	15.0	1.5	
	medical care, inpatient, repeated	examine physically									
		order investigation(s)									
		order treatment									
		document service									
		counsel									
	S17HD1	take nursing history	3					100%	23.7	1.5	
	nursing care, inpatient, repeated, morning shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
		prepare bed	1					100%	2.4	1.5	
	S17HD2	update nursing history	3					100%	30.0	3.0	
	nursing care, inpatient, repeated, afternoon & night shift	monitor vital signs									
		administer drugs									
		counsel									
		document service									
	S17	take medical history	16					100%	45.0	1.0	
	tube ligation	inform and instruct patient									
		examine physically									
		document service									
		prepare patient		17	18			100%	29.7	1.0	
		dress wound									
		administer drugs									
		perform surgical procedure									

HIV/AIDS

intervention	contact	tasks	skill level	infrastructure level			time weight	quantity of contacts	
			primary	A	B	C		full	default
hiv vct	H1AD1	counsel and educate	13	100%			45.0	1.0	
H1	initial contact	order investigation(s)							
persons receiving VCT		document service							
	H1AD2	counsel and educate	13	100%			30.0	1.0	
	follow up	document service							
	H1LH1	inform and instruct patient	7		100%		26.3	1.0	
	HIV rapid test	take sample							
		prepare sample							
		analyse sample							
		document service							
		clean equipment	1		100%		0.8	1.0	
hiv pmtct	H2AE1	counsel and educate	13		100%		60.0	1.0	
H2	initial contact	order investigation(s)							
pregnant women receiving treatment to prevent maternal to child transmission		document service							
	H2AE2	take medical history	4		100%		37.5	1.0	
	second contact	counsel							
		prescribe drugs							
		document service	9		100%		3.5	1.0	
		counsel and educate	13		100%		20.0	1.0	
		provide drugs	9		100%		3.5	5.0	
	H2AH2	take medical history	4		100%		32.0	5.0	
	follow up, repeated	counsel							
		prescribe drugs							
		document service							
		counsel and educate	13		100%		20.0	5.0	
		provide drugs	9		100%		3.5	5.0	
	H2LH1	inform and instruct patient	7		100%		26.3	1.0	
	HIV rapid test	take sample							
		prepare sample							
		analyse sample							
		document service							
		clean equipment	1		100%		0.8	1.0	
screening for haart	H17AE1	take medical history	6		100%		30.0	1.0	
H17	initial contact	examine physically							
persons newly tested positive with investigation of immune status		counsel							
		order investigation(s)							
		document service							
		counsel and educate	13		100%		15.0	1.0	
	H17AE2	update medical history	6		100%		30.0	1.0	
	second contact	examine physically							
		counsel							
		document service							
		counsel and educate	13		100%		15.0	1.0	
	H17LI1	inform and instruct patient	7		100%		33.5	2.0	1.0
	white blood count	take sample							
		prepare sample							
		analyse per microscopy							
		document service							
		clean equipment	1		100%		0.4	2.0	1.0
	H17LJ1	inform and instruct patient	7		100%		25.0	2.0	1.0
	leucocyte differential	take sample							
		prepare sample							
		stain sample							
		analyse per microscopy							
		document service							
		clean equipment	1		100%		0.6	2.0	1.0
monitoring for haart	H15AH3	update medical history	6		100%		30.0	2.0	1.0
H15	follow up, single, without diagnostic procedures	examine physically							
patients monitored for the indication to receive HAART 12 months a years plus patients that default under monitoring for the indication to receive HAART		counsel							
		order investigation(s)							
		document service							
		counsel and educate	13		100%		15.0	2.0	1.0

intervention	contact	tasks	skill level	infrastructure level			time weight	quantity of contacts	
			primary	A	B	C		full	default
	H15LI1	inform and instruct patient	7		100%		33.5	2.0	1.0
	white blood count	take sample							
		prepare sample							
		analyse per microscopy							
		document service							
		clean equipment	1		100%		0.4	2.0	1.0
	H15LJ1	inform and instruct patient	7		100%		25.0	2.0	1.0
	leucocyte differential	take sample							
		prepare sample							
		stain sample							
		analyse per microscopy							
		document service							
		clean equipment	1		100%		0.6	2.0	1.0
haart	H3AE1	take medical history	6		100%		60.0	1.0	1.0
H3	initial contact	examine physically							
patients receiving highly active antiretroviral treatment for AIDS that will receive a full treatment cycle plus patients receiving highly active antiretroviral treatment for AIDS that will default during treatment cycle		counsel							
		order investigation(s)							
		document service							
	H3AE2	update medical history	6		100%		21.2	1.0	1.0
	follow up, initiation of long-term treatment	examine physically							
		counsel							
		prescribe drugs							
		document service							
		counsel and educate	13		100%		35.3	1.0	1.0
		provide drugs	9		100%		3.5	1.0	1.0
	H3AH1	directly observe treatment	2	100%			5.0	145.0	73.0
	directly observed treatment, repeated	document service							
	H3AH2	update medical history	6		100%		27.6	6.0	3.0
	follow up, repeated, no investigations	examine physically							
		counsel							
		prescribe drugs							
		document service							
		counsel and educate	13		100%		11.6	6.0	3.0
		provide drugs	9		100%		3.5	6.0	3.0
	H3AH3	update medical history	6		100%		30.0	5.0	2.0
	follow up, repeated, with investigations	examine physically							
		counsel							
		order investigation(s)							
		prescribe drugs							
		document service							
		counsel and educate	13		100%		15.0	5.0	2.0
		provide drugs	9		100%		3.5	5.0	2.0
	H3LH1	inform and instruct patient	7		100%		26.3	1.0	1.0
	HIV rapid test	take sample							
		prepare sample							
		analyse sample							
		document service							
		clean equipment	1		100%		0.8	1.0	1.0
	H3LE1	inform and instruct patient	7		100%		11.8	6.0	3.0
	hemoglobin analysis	take sample							
		prepare sample							
		analyse per photometer							
		document service							
		clean equipment	1		100%		0.3	6.0	3.0
	H3LI1	inform and instruct patient	7		100%		33.5	6.0	3.0
	white blood count	take sample							
		prepare sample							
		analyse per microscopy							
		document service							
		clean equipment	1		100%		0.4	6.0	3.0
	H3LJ1	inform and instruct patient	7		100%		25.0	6.0	3.0
	leucocyte differential	take sample							
		prepare sample							
		stain sample							
		analyse per microscopy							
		document service							
		clean equipment	1		100%		0.6	6.0	3.0

intervention	contact	tasks	skill level	infrastructure level			time weight	quantity of contacts	
			primary	A	B	C		full	default
prevention oi/tb	H5AE1	take medical history	6			100%	30.0	1.0	1.0
H5	initial contact, with investigations	examine physically							
patients receiving prophylactic treatment of tuberculosis and receiving the full course of treatment plus patients receiving prophylactic treatment of tuberculosis and defaulting during the course of treatment		counsel							
		order investigation(s)							
		document service							
		counsel and educate	13			100%	27.0	1.0	1.0
	H5AE2	update medical history	6			100%	25.0	1.0	1.0
	follow up, initiation of long-term treatment	examine physically							
		counsel							
		prescribe drugs							
		document service							
		counsel and educate	13			100%	15.0	1.0	1.0
		provide drugs	9			100%	3.5	1.0	1.0
	H5AH2	update medical history	5	100%			19.3	5.0	2.0
	follow up, repeated, no investigations	examine physically							
		counsel							
		prescribe drugs							
		document service							
		counsel and educate	13	100%			21.4	5.0	2.0
		provide drugs	9	100%			3.5	5.0	2.0
	H5LA1	inform and instruct patient	7			100%	19.6	3.0	3.0
	sputum smear examination	take sample							
		prepare sample							
		stain sample							
		analyse per microscopy							
		document service							
		clean equipment	1			100%	0.3	3.0	3.0
	H5RA1	inform and instruct patient	8			100%	22.5	1.0	1.0
	x-ray	position patient							
		take image							
		develop film							
		document service							
	H5IN1	inform and instruct patient	7			100%	5.0	1.0	1.0
	tine test	apply t-test							
		document service							
prevention of oi/cotrimoxazol	H6AB1	take medical history	5	100%			30.0	1.0	1.0
H6	initial contact, initiation of long-term treatment	examine physically							
patients receiving prophylactic treatment of PcP and receiving the full course of treatment plus patients receiving prophylactic treatment of PcP and defaulting during the course of treatment		counsel							
		prescribe drugs							
		document service							
		counsel and educate	13	100%			24.5	1.0	1.0
		provide drugs	9	100%			3.5	1.0	1.0
	H6AH2	update medical history	5	100%			18.8	5.0	2.0
	follow up, repeated, no investigations	examine physically							
		counsel							
		prescribe drugs							
		document service							
		counsel and educate	13	100%			22.5	5.0	2.0
		provide drugs	9	100%			3.5	5.0	2.0
hiv/aids palliative care	H4AA1	take medical history	5	100%			36.6	1.0	
H4	single contact, primary care level	examine physically							
services of palliative care provided to people living with HIV/AIDS		counsel							
		prescribe drugs							
		document service							
		provide drugs	9	100%			3.5	1.0	
Rx of local infections	H7AA1	take medical history	5	100%			29.2	1.0	
H7	initial contact	examine physically							
local opportunisitic infections treated		counsel							
		prescribe drugs							
		document service							
		provide drugs	9	100%			3.5	1.0	
	H7AH1	update medical history	5	100%			15.0	0.2	
	follow up	examine physically							
		counsel							
		prescribe drugs							
		document service							
		provide drugs	9	100%			3.5	0.2	

intervention	contact	tasks	skill level	infrastructure level			time weight	quantity of contacts	
			primary	A	B	C		full	default
Rx oi ambc	H8AA1	take medical history	5	100%			24.5	1.0	
H8	initial contact	examine physically							
episodes of systemic opportunistic infections treated on ambulatory basis at primary care level		counsel							
		prescribe drugs							
		document service							
		provide drugs	9	100%			3.5	1.0	
	H8AH1	update medical history	5	100%			15.0	0.2	
	follow up	examine physically							
		counsel							
		prescribe drugs							
		document service							
		provide drugs	9	100%			3.5	0.2	
Rx oi opdc	H16AA1	take medical history	5	100%			22.3	1.0	
H16	initial contact, initiation of referal or admission, emergency	examine physically							
episodes of systemic opportunistic infections treated on ambulatory basis with referral to outpatient department		counsel							
		initiate referral							
		document service							
	H16XX1	take medical history	6			100%	31.4	1.0	
	initial contact, secondary care level, emergency	examine physically							
		counsel							
		order investigation(s)							
		order treatment							
		document service							
		provide drugs	9			100%	3.5	1.0	
	H16LE1	inform and instruct patient	7			100%	11.8	1.0	
	hemoglobin analysis	take sample							
		prepare sample							
		analyse per photometer							
		document service							
		clean equipment	1			100%	0.3	1.0	
	H16LI1	inform and instruct patient	7			100%	33.5	1.0	
	white blood count	take sample							
		prepare sample							
		analyse per microscopy							
		document service							
		clean equipment	1			100%	0.4	1.0	
	H16LJ1	inform and instruct patient	7			100%	25.0	1.0	
	leucocyte differential	take sample							
		prepare sample							
		stain sample							
		analyse per microscopy							
		document service							
		clean equipment	1			100%	0.6	1.0	
rx oi ipdc	H9AC1	take medical history	5	100%			30.0	1.0	
H9	initial contact, initiation of referal or admission, emergency	examine physically							
episodes of systemic opportunistic infections treated on an inpatient basis		counsel							
		administer emergency treatment							
		initiate referral							
		document service							
	H9XX1	take medical history	6			100%	35.0	0.9	
	initial contact, secondary care level, emergency	examine physically							
		counsel							
		order investigation(s)							
		order treatment							
		initiate admission							
		document service							
	H9DA1	update medical history	6		15%	85%	30.0	11.2	
	medical care, inpatient, repeated	examine physically							
		counsel							
		order investigation(s)							
		order treatment							
		document service							

intervention	contact	tasks	skill level	infrastructure level			time weight	quantity of contacts	
			primary	A	B	C		full	default
	H9HD1	take nursing history	3		20%	80%	48.4	9.0	
	nursing care, inpatient, repeated, morning shift	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		prepare bed	1		20%	80%	5.2	9.0	
	H9HD2	update nursing history	3		20%	80%	45.0	18.0	
	nursing care, inpatient, repeated, afternoon & night shift	monitor vital signs							
		administer drugs							
		counsel							
		document service							
	H9HF1	take nursing history	3			100%	42.6	3.0	
	nursing care, inpatient, repeated, severe cases, morning, repeated	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		prepare bed	1			100%	42.6	3.0	
		wash and dress							
		feed							
		change position							
	H9HF2	update nursing history	3			100%	37.8	6.0	
	nursing care, inpatient, repeated, severe cases, afternoon & night shift	monitor vital signs							
		administer drugs							
		counsel							
		document service							
		feed	1			100%	22.2	6.0	
		change position							
	H9LE1	inform and instruct patient	7		15%	85%	11.8	1.0	
	hemoglobin analysis	take sample							
		prepare sample							
		analyse per photometer							
		document service							
		clean equipment	1		15%	85%	0.3	1.0	
	H9LI1	inform and instruct patient	7		15%	85%	33.5	1.0	
	white blood count	take sample							
		prepare sample							
		analyse per microscopy							
		document service							
		clean equipment	1		15%	85%	0.4	1.0	
	H9LJ1	inform and instruct patient	7		15%	85%	25.0	1.0	
	leucocyte differential	take sample							
		prepare sample							
		stain sample							
		analyse per microscopy							
		document service							
		clean equipment	1		15%	85%	0.6	1.0	
	H9RA1	inform and instruct patient	8			100%	22.5	0.7	
	x-ray	position patient							
		take image							
		develop film							
		document service							
condom dis pub sec	H10AB1	travel	13		100%		60.0	1.0	
H10	visit to outlets	counsel and educate							
maintenance services of public condom outlets provided		document service							
school education	H11AB1	travel	13		100%		60.0	1.0	
H11	visit to educational facilities	counsel and educate							
HIV/AIDS teaching sessions provided at primary and secondary schools by trained health personnel		document service							

intervention	contact	tasks	skill level	infrastructure level			time weight	quantity of contacts	
			primary	A	B	C		full	default
rx syndromic syphilis	H12AA1	take medical history	4	100%			20.0	1.0	
H12	initial contact	examine physically							
non-pregnant women managed syndromatically for syphilis		counsel							
		administer drugs							
		document service							
	H12AH1	update medical history	4	100%			15.0	0.5	
	follow up	examine physically							
		counsel							
		document service							
	H12AD1	take medical history	5	100%			20.0	0.8	
	initial contact, partner	examine physically							
		counsel							
		administer drugs							
		document service							
	H12AI1	update medical history	5	100%			15.0	0.4	
	follow up, partner	examine physically							
		counsel							
		document service							
rx vaginal infection non-pregnant wo	H13AA1	take medical history	4	100%			20.0	1.0	
H13	initial contact	examine physically							
non-pregnant women managed syndromatically for vaginal infections		counsel							
		prescribe drugs							
		administer drugs							
		document service							
			9	100%			3.5	1.0	
	H13AH1	update medical history	4	100%			15.0	0.5	
	follow up	examine physically							
		counsel							
		document service							
	H13AD1	update medical history	5	100%			20.0	0.8	
	initial contact, partner	examine physically							
		counsel							
		prescribe drugs							
		administer drugs							
		document service							
		provide drugs	9	100%			3.5	0.8	
	H13AI1	update medical history	5	100%			15.0	0.4	
	follow up, partner	examine physically							
		counsel							
		document service							
rx cervical infection	H14AA1	take medical history	4	100%			20.0	1.0	
H14	initial contact	examine physically							
non-pregnant women managed syndromatically for cervical infections		counsel							
		prescribe drugs							
		document service							
		provide drugs	9	100%			3.5	1.0	
	H14AH1	update medical history	4	100%			15.0	0.5	
	follow up	examine physically							
		counsel							
		document service							

Support functions

intervention	contact	tasks	skill level	infrastructure level				time weight	quantity of contacts	
			primary	A	B	C	D		full	default
pharma mgt disp	aqdm1a	review stock	10	100%				27.5	1.0	
aqdma	task, daily	document service								
management of supply with pharmaceuticals at dispensary level										
	aqdm2a	order and store supplies	10	100%				2.8	1.0	
	task, daily									
pharma mgt hc	aqdm1b	review stock	10		100%			35.8	1.0	
aqdmb	task, daily	document service								
management of supply with pharmaceutic										
	aqdm2b	order and store supplies	10		100%			2.3	1.0	
	task, daily									
pharma mgt dh	aqdm1c	review stock	10			100%		55.0	1.0	
aqdmc	task, daily	document service								
management of supply with pharmaceutic										
	aqdm2c	order and store supplies	10			100%		2.0	1.0	
	task, daily									
chold chain maint disp	aqcc1a	document temperature	1	100%				10.0	1.0	
aqcca	task, daily	maintain refridgerator								
maintenance of cold chain at dispensary level										
chold chain maint hc	aqcc1b	document temperature	1		100%			13.0	1.0	
aqccb	task, daily	maintain refridgerator								
maintenance of cold chain at health center level										
cold chain maint dh	aqcc1c	document temperature	1			100%		20.0	1.0	
aqccc	task, daily	maintain refridgerator	1			100%				
maintenance of cold chain at district hospital level										
lab maint hc	lqlm1b	maintain lab equipment	7		100%			30.0	1.0	
lqlmb	task, daily	order and store supplies								
maintenance of laboratory equipment at health center level										
lab maint dh	lqlm1c	maintain lab equipment	7			100%		51.0	1.0	
lqlmc	task, daily	order and store supplies								
maintenance of laboratory equipment at district hospital level										
equip steriliz hc	aqse1b	sterilize surgical equipment	1		100%			20.0	1.0	
aqseb	task, daily	documentation								
sterilization of equipment at health center level										
equip steriliz dh	aqse1b	sterilize surgical equipment	1			100%		44.0	1.0	
aqsec	task, daily	documentation								
sterilization of equipment at district hospital level										
		maintain x-ray equipment	8			100%		20.0	1.0	
radiol equip maint	rqrm1c	documentation								
rqrmc	task, daily									
maintenance of radiological equipment at district hospital level										
HMIS reporting disp	aqds1a	review information	12	100%				120.0	1.0	
aqdsa	task, monthly	report								
information collection and submission to HMIS per year at dispensary level										
HMIS reporting hc	aqds1b	review information	12		100%			156.0	1.0	
aqdsb	task, monthly	report								
information collection and submission to HMIS per year at health center level										

intervention	contact	tasks	skill level	infrastructure level				time weight	quantity of contacts	
			primary	A	B	C	D		full	default
HMIS reporting dh	aqds1c	review information	12			100%		240.0	1.0	
aqdsc	task, monthly	report								
information collection and submission to HMIS per year at district hospital level										