Quantification of Public Health Commodities Toolkit

What is quantification?

Quantification is a key logistic function that is made up of forecasting and supply planning. Forecasting is aimed at estimating future consumption and supply planning ensures that adequate quantities of commodities are procured and delivered to satisfy needs of health programs. Quantification relies on knowledgeable professionals, without whom, the commodity needs estimations for health programs would be incorrect, which in turn may lead to either overstock and wastage or understock and denial of critical life-saving products from clients whose health is dependent and sustained by the availability of commodities. It is important to know that supply planning generally informs commodity needs of health programs and more specifically the periodic procurement orders.

Why quantification of public health commodities toolkit?

This toolkit helps to both build and strengthen the capacity of individuals and organizations by providing a one stop place that allows easy and timely access to important information and tools pertaining to quantification. From manuals/guides to databases to country experiences, this toolkit provides a large inventory of publications and resources, which encompass a broad range of public health areas including reproductive health, maternal and child health, HIV&AIDS, malaria, and TB, just to name a few. The main objectives of the toolkit are to:

- present, in a user-friendly way, a vast array of evidence-based information and resources pertaining to quantification of public health commodities, all conveniently located in one place;
- help strengthen the technical knowledge and skills of logisticians and others in forecasting and supply planning of health commodities, and thus improve forecast accuracy; and
- disseminate best practices and country experiences related to quantification exercises.

If you have any comment regarding the toolkit or would like to contribute additional information/resources to it, please feel free to complete the feedback form. You may also go to the site map to link to any specific resource.

What are K4Health Toolkits?

K4Health Toolkits are electronic collections of carefully selected information resources on a particular topic for health policy makers, program managers, and service providers. They are
based on a continuous publishing principle that allows them to evolve after publication to capture additional resources and to identify and fill remaining information gaps.

What is the purpose of this Toolkit?

This Toolkit shares evidenced-based information, resources, and tools for conducting forecasts and developing supply planning of public health commodities in order to satisfy health programs' needs.

Who developed this Toolkit?

The quantification of public health commodities toolkit was created by Therese Muyingo, JSI Capacity Building Advisor for the USAID | DELIVER PROJECT, with contribution from Technical Advisor Michael Egharevba (USAID | DELIVER PROJECT) and Director of Communications Penelope Riseborough (John Snow Inc. and World Education Inc.) Any feedback from an interested organization is welcome.

What types of resources are included?

This Toolkit contains a large inventory of online resources and tools pertaining to quantification, which were selected and vetted based on their relevance, source as well as the intended audience. They include:

- Handbooks and guides
- Databases
- Software applications and other tools
- PowerPoint presentations, videos, and webinars
- Country technical reports
- Training curricula

Commodities discussed within these resources fall into the following general public health areas:

- Family Planning
- Reproductive, Maternal, and Child Health
- HIV/AIDS
- Malaria
- Tuberculosis
- Laboratory
- Community Case Management (CCM)
- Vaccines

Who are the intended audiences?

This Toolkit is for anyone who is directly or indirectly involved in the quantification of public health commodities including logisticians, pharmacists, health services providers, public health professionals, program managers, researchers, trainers, and students, among others.

How do I get started using this Toolkit?
The toolkit content may be browsed in three different fashions:

- Navigation menu on the right-hand side of the page
- Search button located below the navigation menu
- Toolkit site map

**How can I suggest a resource to include in this Toolkit?**

We invite you to contribute to evolving and enhancing this Toolkit. If you have developed or use quality resources that you think should be included in this Toolkit, please fill out our [feedback form](#) with your suggestions. K4Health will review and consider your suggestions.

**How can I make a comment or give feedback?**

If you have comments about the Toolkit, please share them through the [feedback form](#). Your feedback will help to ensure the Toolkit remains up-to-date and is continually improved. For example, you can share ideas about how you have used the Toolkit in your work so that others can learn from and adapt your experiences.

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**Principles of Quantification**

This section provides resources for understanding the general principles of quantification of health commodities and also guides for conducting quantification exercises as part of supply chain management. It offers information on the processes and steps involved in quantification, the associated challenges, as well as some promising practices.

**Resources:**

- [The Supply Chain Manager’s Handbook: A Practical Guide to the Management of Health Commodities](#)
This handbook is the starting point for anyone interested in learning about and understanding the key principles and concepts of supply chain management for health commodities. The concepts described in this handbook will help supply chain managers that are responsible for improving, revising, designing, operating, and monitoring all or part of a supply chain.

- **Quantification of Health Commodities: A Guide to Forecasting and Supply Planning for Procurement**

  This practical guide for quantification of health commodities is a reference on how to conduct a national-level quantification exercise. It is intended for technical advisors, program managers, procurement officers, warehouse managers, service providers, government officials, implementing partners, and donor agencies, among others. Individual members of the quantification team, who are responsible for program planning, budgeting, and mobilizing resources for procuring commodities, will also find this guide useful for using the output from the quantification to support these activities.

  A French translation of the 2014 version of this guide is available below.

- **Promising Practices Quantification: Forecasting and Supply Planning**

  This brief is part of the Promising Practices in Supply Chain Management series, developed by the Supply and Awareness Technical Reference Team (TRT) of the UN Commission on Life-Saving Commodities for Women’s and Children’s Health (the Commission or UNCoLSC). As part of the Every Woman Every Child movement and efforts to meet the health-related Millennium Development Goals by 2015 and beyond, the Commission is leading activities to reduce barriers that block access to essential health commodities. The Supply and Awareness TRT developed this set of briefs on promising practices in supply chain management to guide countries in identifying and addressing key bottlenecks in the supply and distribution of the Commission’s 13 life-saving commodities across the reproductive, maternal, neonatal, and child health continuum of care.

  This series of briefs has been developed for use by in-country stakeholders. The briefs provide both proven and promising practices that may be used to address specific supply chain barriers faced by each country.
Quantifying pharmaceutical requirements

Steps in estimating future consumption (forecasting) and final commodity requirements (supply planning) are presented in light of a number of contextual factors.

• Quick Reference: Quantification Planning

This fact sheet is an overview of the steps in the quantification process.

Data Sources

Data used to inform quantification exercises come from two main sources: (1) In-country data and information, which may include national Health Management Information System (HMIS) and Logistic Management Information System (LMIS) data, national program policies, national strategic plans, program expansion plans, national treatment guidelines, national epidemiological surveillance data, national census data, and special survey studies, past/national procurement prices among others developed within the country; and (2) international databases (described in this section of the toolkit), which provide data on population’s size, health indicators, international funders treatment/intervention targets, scale-up plans and prices, as well as other pieces of information of a nation, region and continent that is also important to forecasting and supplying planning. The choice to which can be used for the quantification exercise depends on how current the data are, their availability, visibility, and relevance. More can be learned about the use of in-country data source or a combination of both by exploring the ?Country experiences? section of the toolkit.

Resources:

• WHO Model List of Essential Medicines for Children

This Model List is intended for use by providers working with children up to 12 years of age. The core list presents a list of minimum medicine needs for a basic health?care system, listing the most efficacious, safe and cost?effective medicines for priority conditions. Priority conditions are selected on the basis of current and estimated future public health relevance and the potential for safe and cost-effective treatment. The complementary list presents essential medicines for priority diseases, for which specialized diagnostic or monitoring
facilities, and/or specialist medical care, and/or specialist training are needed. In the case of doubt, medicines may also be listed as complementary on the basis of consistent higher costs or less attractive cost-effectiveness in a variety of settings.

- **2015 World Population Data Sheet (Population Reference Bureau)**

  The Data Sheet provides the latest data on 20 population, health, and environment indicators for the world, major regions, and more than 200 countries.

- **Contraceptives and Condoms for Family Planning and STI/HIV Prevention: External Procurement Support Report 2013**

  This report, updated annually, contains information and analysis that can influence policy dialogue, advocacy, and interagency work. It aims to enhance coordination among donors, improve partnerships between donors and national governments, and mobilize the resources needed to accelerate progress towards universal access to sexual and reproductive health, and in particular to reduce the unmet need for family planning. The report contains dozens of figures, tables, and graphs, along with analyses data received from individual donors and partner organizations about the support they have provided directly to developing countries for the procurement of contraceptives and condoms. The report is a rich source of data for development that can drive good planning for contraceptive supply, advocacy and resource mobilization.

- **UNFPA Contraceptives Price Indicator?Year 2014**

  This report provides a price comparison for key contraceptives between UNFPA, USAID, and other suppliers.

- **International Drug Price Indicator Guide**
This guide contains a spectrum of prices from pharmaceutical suppliers, international development organizations, and government agencies. The Guide aims to make price information more widely available in order to improve procurement of medicines of assured quality for the lowest possible price. Comparative price information is important for getting the best price, and this is an essential reference for anyone involved in the procurement of pharmaceuticals.

- **Transaction Prices for Antiretroviral Medicines from 2010 to 2013?Summary report**

  This summary report contains information on the price of antiretroviral drugs, abstracted from the Global Price Reporting Mechanism (GPRM). The GPRM contains information on transaction prices, sources, and quantities of antiretroviral medicines (ARVs) purchased by HIV/AIDS programmes in low-income countries, lower middle-income countries and upper middle-income countries.

- **Public Health Procurement Guide and Product Catalog**

  USAID?s Public Health Procurement Guide and Product Catalog 2010 is an annual publication of current contraceptive and condom ordering procedures for Missions and a catalog of condoms and contraceptives provided by USAID. It includes USAID contraceptive ordering procedures and guidance on how to use logistics data and forecasts to calculate contraceptive requirements.

- **Standards for maternal and neonatal care Group 1: General standards of care for healthy pregnancy and childbirth**

  The Standards for maternal and neonatal care are a set of user-friendly leaflets that present WHO key recommendations on the delivery of maternal and neonatal care in health facilities, starting from the first level of care.

  The Standards for maternal and neonatal care are part of the WHO Integrated Management of Pregnancy and Childbirth Care (IMPAC) Package, which provides guidance for countries to improve the health and survival of women and their newborn babies during pregnancy, childbirth and the postnatal period.
SCMS e-catalog

This e-catalog provides a core list of standardized products derived from current HIV/AIDS health needs as defined by clients. The core list is updated based on market trends and new product selections.

• Global Price Reporting Mechanism for HIV, tuberculosis and malaria

The Global Price Reporting Mechanism (GPRM) is a database recording international transactions of HIV, tuberculosis, and malaria commodities purchased by national programmes in low- and middle-income countries.

The information recorded includes the volume of transactions, prices, international commercial terms (INCO), country of destination, and procurement date, among others. The information can be queried using an end user interface that enables searching the database by commodity, country, income group, region and period of time. Summary analyses of the ARV prices and their evolution are published regularly in AMDS summary reports. Finally, data up to the level of individual procurement operations can be made available to research groups upon request and approval by the AMDS partners.

The main data providers of GPRM are the Global Fund, PEPFAR, UNITAID, and the procurement organizations working with them, such as the Clinton Foundation, Crown Agent, the Global Drug Facility (GDF), the International Dispensary Association (IDA HIV/AIDS), USAID | DELIVER Project, Mission Pharma, Management Sciences for Health (MSH), the Partnership for Supply Chain Management (PFSCMS), the United Nations Development Programme (UNDP), the United Nations Children's Fund (UNICEF), and the WHO /Contracting and Procurement Service (WHO/CPS). The dual sourcing of data from funders and procurement organizations requires that duplicates be identified and removed – a challenge addressed successfully in 2011 for medicines with the help of ANRS. A better way to capture information on diagnostics is being developed with FIND.

• Procurement Planning and Monitoring Reports

This report describes the stock status of contraceptive products on a country-by-country basis. It is produced monthly by the USAID | DELIVER Project for the Coordinated Assistance for Reproductive health supplies (CARhs) group at the Reproductive Health Supplies Coalition (RHSC). Data are provided by Ministries of Health, or partners such as Management Sciences for Health (MSH), JSI through the USAID | DELIVER PROJECT,
social marketing organizations such as Population Services International (PSI), DKT, Marie Stopes International (MSI), and UNFPA. As of June 2015, 33 countries report in the Procurement Planning and Monitoring Report. PPMR data can be used by program managers, among others, for supply planning of contraceptives.

- **The Demographic and Health Survey**

Demographic and Health Surveys (DHS) contain national data that are representative of the health and population of a country. It is a household survey that provides data for a wide range of monitoring and impact evaluation indicators in the areas of population, health, and nutrition. Since 1984, The DHS Program has provided technical assistance to more than 300 surveys in over 90 countries, advancing global understanding of health and population trends in developing countries. The data can be used for policy development, program planning, and monitoring and evaluation, among other activities.

- **Database on procurement of HIV and hepatitis products**

This database records data on the procurement of antiretroviral drugs and hepatitis C medicines from sources which do not routinely report on their procurement via the Global Price Reporting Mechanism. Data on the procurement of HIV and hepatitis diagnostics will be included as they become available. The data sources are Ministries of health, WHO Country Offices, and publications and presentations.

The data source is mentioned in all cases. It is organized by country, formulation/product, and by year of procurement. Whenever available, information on manufacturers, mention of whether the product is prequalified by WHO or (tentatively) approved by a stringent regulatory authority, the volumes procured, currency in which the procurement was contracted, and its equivalent in USD (with exchange rate) are provided. However, such data are often missing in the source material.

- **UN Millenium Development Goals: Contraceptive Prevalence Rate (1990-2014)**

The website gives trends on the contraceptive prevalence rate or CPR (1990-2014) for 186 countries around the world. The CPR may be used to prepare contraceptive forecasts based on population (demographic) data.
UNFPA produces a systematic and comprehensive series of annual, model-based estimates and projections of contraceptive prevalence, unmet need for family planning, total demand for family planning and the percentage of demand for family planning that is satisfied among married or in-union women for the period from 1970 to 2030. Median estimates with 80 per cent and 95 per cent uncertainty intervals are provided for 195 countries or areas of the world and for regions and development groups. A Bayesian hierarchical model combined with country-specific time trends was used to generate the estimates, projections and uncertainty assessments. The model advances prior work and accounts for differences by data source, sample population, and contraceptive methods included in measures of prevalence.

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U.S. Census Bureau: International Data Base

The U.S. Census Bureau conducts demographic, economic, and geographic studies of other countries and strengthens statistical development around the world through technical assistance, training, and software products. For over 60 years, the Census Bureau has performed international analytical work and assisted in the collection, processing, analysis, dissemination, and use of statistics with counterpart governments in over 100 countries.

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Couple Years of Protection (CYP)

CYP is the estimated protection provided by contraceptive methods during a one-year period, based upon the volume of all contraceptives sold or distributed free of charge to clients during that period. The CYP is calculated by multiplying the quantity of each method distributed to clients by a conversion factor, to yield an estimate of the duration of contraceptive protection provided per unit of that method. The CYP for each method is then summed for all methods to obtain a total CYP figure. CYP conversion factors are based on how a method is used, failure rates, wastage, and how many units of the method are typically needed to provide one year of contraceptive protection for a couple. The calculation takes into account that some methods, like condoms and oral contraceptives, for example, may be used incorrectly and then discarded, or that IUDs and implants may be removed before their life span is realized.

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RHInterchange (UNFPA)
The Reproductive Health Interchange (RHI) provides access to up-to-date data on contraceptive orders and shipments for over 140 countries. The data can be used for pipeline monitoring, commodity management, analysis, and planning. Users have to register through the AccessRH website to view the data.

Software Applications and Other Tools

This section presents a variety of software applications and other tools that may be used to optimize the quantification process.

Resources:

- **EPI Logistics Forecasting Tool**

  The EPI Logistics Forecasting Tool provides multi-year forecasts for vaccine supplies, storage and transport equipment at national and intermediate levels of the supply chain.

- **Reality check: A planning and advocacy tool for strengthening family planning programs: Version 3 user’s guide**

  Reality Check is an easy-to-use tool that generates data for evidence-based advocacy and strategic planning in FP programs. The tool can be used to set realistic FP goals and plan for service expansion to meet them; it can also provide data for advocacy by estimating program requirements for implementation, along with the health impact of achieving contraceptive goals. The tool enables users (a) to quickly test future goal scenarios, including changes in the method mix, and (b) to compare those future scenarios with past performance to determine whether current goals are feasible.

  This User’s Guide provides instructions for using the tool and explains the methodology and key concepts behind the tool. The complete Reality Check package consists of the tool itself, the User’s Guide, and a flash drive containing an electronic version of the guide, the tool, and additional resources, including electronic copies of the resources used for this guide.

- **Quantimed**
Quantimed is designed to improve the accuracy of order planning and budgeting by providing a systematic approach to organizing and analyzing data. Quantimed facilitates the calculation of programs forecasted consumption using either a single method or a combination of any of the three primary quantification methods: past consumption, morbidity patterns, and proxy consumption.

- **QuanTB**

Ensuring that patients have continuous access to tuberculosis (TB) treatment requires complex projections and calculations by program staff. These projections are becoming more challenging as new diagnostic tools rapidly increase the number of individuals diagnosed, and thus the quantities of medicines needed. If treatment regimens change, national programs must plan carefully for phasing in and out various medicines in order to manage the risks of stock out. QuanTB improves this process by combining morbidity and consumption methods to produce a more accurate estimate.

- **Spectrum**

Spectrum is a suite of policy models that make use of a unified set of Windows-based commands that can easily be learned. The models are used to project the need for FP/RH, MH, and HIV/AIDS services. Most models are available in English, French, and Spanish. Some are also available in Portuguese, Arabic, and Russian. Each model includes a detailed user manual that not only describes how to use the software but also includes sections on data sources, interpretation and use of the results, a tutorial, and a description of the methodology.

- **PipeLine**

To be successful, public health programs must always have enough medicines and supplies to meet the needs of their clients while avoiding surpluses that waste products and money. PipeLine is a best-in-class desktop software tool—it helps program managers plan optimal procurement and delivery schedules for health commodities, and it monitors their orders throughout the supply chain. Policymakers, product suppliers, and donors can generate reports, estimate future product needs, and use the software as a key tool in program planning. This effective tool has been used in more than 40 countries around the world, with products in reproductive health, essential medicines, anti-retroviral testing and treatment, malaria testing and treatment, lab supplies, and tuberculosis treatment.
PipeLine Software Database Administrator’s Guide

This guide will help new and experienced PipeLine users to understand how to set up a PipeLine database, as well as how to perform forecasting, supply planning, and program monitoring with PipeLine. The guide explores the wide variety of programs and settings in which PipeLine is used, and provides advice on ways to manage common supply chain tasks such as forecasting, shipment planning, and program monitoring in PipeLine.

- **Reality Check: A Planning and Advocacy Tool for Strengthening Family Planning Programs (Version 3)**

  Reality Check generates data for evidence-based family planning advocacy and strategic planning by examining the relation between contraceptive prevalence rate (CPR) and population to estimate the resources required to achieve a future goal and the potential impact of achieving that goal.

- **ARV forecasting tool**

  The Clinton Foundation HIV/AIDS Initiative (CHAI) has developed an ARV forecasting tool, intended to assist program managers in quantifying and budgeting ARV demands in the initial 12-month phase of an ART scale-up program.

  Compiled by the Operations Research team of the CHAI Care Consortium, the tool (ARV Procurement Forecast Tool 1.4) calculates the total number of units (capsules, tablets, ml of suspensions) required to meet the demand of the program’s projected scale-up. By inserting pricing information from quotations by pharmaceutical companies, the tool can be used to display the total budget for orders as well as to generate purchase orders to be sent to manufacturers.

  The tool also allows the user to insert program-specific procurement assumptions, such as emergency buffer stock (based on the projected interval between placement of order and arrival of product) and procurement fees.

**Quantification of Selected Public Health Commodities**
This section of the toolkit contains resources that will guide the processes of estimating future commodity consumptions and developing the supply plans of major public health programs to include commodities for HIV/AIDS; malaria; TB; reproductive, maternal, neonatal and child health; vaccines; community case management, and laboratory.

HIV and AIDS

This section contains information on quantification of health commodities used for HIV&AIDS prevention, diagnosis, and treatment and care; including test kits, antiretrovirals for antiretroviral therapy (ART), antiretrovirals for the prevention of mother-to-child transmission (PMTCT), and voluntary medical male circumcision (VMMC).

World Health Organization (WHO) recently updated its 2013 consolidated ARV guidelines for initiating ART, which will have major implications on the future consumption estimation or forecast of HIV and AIDS commodities by national HIV control programs. The new guidelines (to be released in 2016) include two major recommendations: (1) initiation of ART in any individual living with HIV regardless of their CD4 count and, (2) the use of ARVs for pre-exposure prophylaxis (PrEP) in individuals at higher risk of HIV infections.

Prevention and Diagnosis

Resources:

- WHO Annual Meeting with Diagnostic Manufacturers and Stakeholders: Global Forecasts of Diagnostic Demand for 2014-2018

UNAIDS proposed new HIV treatment targets for the post-2015 era during the 20th International AIDS Conference in Melbourne, Australia in July 2014: by 2020 90% of all people living with HIV will know their HIV status, 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy, and 90% of all people receiving antiretroviral therapy will have durable viral suppression. Achieving these targets requires a significant increase in access to tests to diagnose HIV infection and to monitor treatment
efficacy so as to document whether patients using antiretroviral therapy (ART) achieve viral suppression. Access to HIV diagnostics is currently much lower than required to reach the 90-90-90 targets. It is estimated that only 50% of people living with HIV been tested and know their HIV status, and only 25% of people on ART have access to viral load (VL) monitoring. It is in response to this gap that the Diagnostic Access Initiative (DAI) was launched in Melbourne in 2014.

With this meeting, WHO also aims to continue dialogue with diagnostic manufacturers on how they can best collaborate towards closing the gap in access and reach the 90-90-90 targets.

• **Strengthening Condom Supply Chains**

Condoms help prevent unintended pregnancies as well as HIV/AIDS and other sexually transmitted infections. Many high-prevalence HIV countries around the world still face challenges related to condom programming. This presentation examines the general aspects of the condom supply chain and ways to strengthen some of the weak links, including the quantification processes.

• **Quantification, Forecasting, and Monitoring for VMMC**

*Tool 9* in the PEPFAR guide to best practices for voluntary medical male circumcision (VMMC) site operations allows users to forecast and monitor the use of commodities at a VMMC site to ensure adequate stocks of medical supplies.

• **Quantification of Health Commodities: HIV Test Kit Companion Guide Forecasting Consumption of HIV Test Kits**
Successful implementation and expansion of HIV counseling and testing services are dependent on the continuous supply and availability of high-quality HIV test kits and the additional consumable supplies required at HIV testing sites. The variability in HIV testing procedures, the multiple purposes of testing, and the different types of HIV test kits available pose particular challenges in managing HIV test kit supply chains. The primary focus and purpose of this companion guide is to supplement the general guide on Quantification of Health Commodities: A Guide to Forecasting and Supply Planning for Procurement by describing in detail the specific methodology for forecasting consumption of HIV test kits as a critical step in the overall quantification process.

A Commodity Management Planning Guide for the Scale-Up of HIV Counseling and Testing Services

This publication is an update of Commodity Management in VCT Programs: A Planning Guide, published in 2002. The update aims to achieve the same goal, namely, to provide practical guidance on commodity management issues related to establishing, managing, and scaling up a variety of HIV counseling and testing options, including voluntary counseling and testing (VCT) programs, to meet different needs in diverse settings at both national and point-of-service levels. This guide is intended to assist a range of audiences--including national program planners and policy makers, donors currently supporting or planning to support HIV counseling and testing service delivery, and HIV counseling and testing service implementers--in systematizing their approaches to strengthening and scaling up HIV counseling and testing services.

Guidance on ensuring effective supply chain planning for commodities needed for implementation and scale-up of services for the prevention of mother to child transmission (PMTC) of HIV infection

This document outlines general principles for program and supply managers on which to base supply planning for commodities needed for the implementation of current WHO and national guidelines on the Prevention of Mother to Child Transmission (PMTCT) of HIV, Cotrimoxazole prophylaxis, ARV prophylaxis and ARV treatment for pregnant women. It suggests a basic approach that can ensure effective and sustainable supply of PMTCT related commodities.
Successful implementation and expansion of antiretroviral therapy (ART) services depend on the continuous availability of high-quality antiretroviral (ARV) drugs and on the supply of a wide range of HIV & AIDS-related commodities. The nature of ART and the specific characteristics of ARV drugs and how they are used pose particular challenges for managing the supply chain for ARV drugs. The primary focus and purpose of the ARV companion guide is to describe the process and the methods used for forecasting ARV drug needs.

Report on the development of a reliable and replicable methodology for forecasting the global demand for paediatric anti-retroviral medicines

To both inform production and ensure the adequate supply of antiretroviral drugs, it is essential to develop accurate, replicable forecasts for future needs. To this end, the working group on forecasting of the PEPFAR Partnership for Paediatric HIV/AIDS Treatment decided to produce a forecast for antiretroviral needs through the year 2008. The forecast will provide information on the number of paediatric patients expected to be on antiretroviral treatment for the years 2007-2008, as well as the volume and form of products which will be necessary to treat those patients. SCMS developed a standardized procedure to generate a replicable forecast utilizing the SCMS forecasting tool of choice and based on data from the 15 PEPFAR focus countries (plus Zimbabwe) prepared a selective forecast of paediatric ARV demand for 2007 and 2008.

Guide for quantifying ARV drugs

Successful implementation and expansion of antiretroviral therapy (ART) services depend on the continuous availability of high-quality antiretroviral (ARV) drugs and on the supply of a wide range of HIV/AIDS-related commodities. The nature of ART and the specific
characteristics of ARV drugs and how they are used pose particular challenges for managing the supply chain for ARV drugs. Although some general considerations for managing the supply chain for ARV drugs are discussed in this guide, the primary focus and purpose of the guide is to describe the process and the methodologies used for quantifying ARV drug needs. Quantification of health commodities is a process that includes estimating the quantities and the cost of products required to meet customer demand and to fill the pipeline with adequate stock levels, taking into account service delivery capacity, supply pipeline requirements, and resources available for procurement.

Reproductive, Maternal, Neonatal and Child Health

This section contains publications pertaining to quantification of maternal, neonatal and child health (MNCH) which include family planning commodities that are commonly used as well as new and underused commodities, and information on needs estimations of life-saving RMNCH commodities.

Resources:

- Quantification of Health Commodities: RMNCH Supplement

  This guide will assist program managers, service providers, and technical experts when conducting a quantification of commodity needs for the 13 reproductive, maternal, newborn, and child health commodities prioritized by the UN Commission on Life-Saving Commodities for Women and Children. This quantification supplement should be used with the main guide?Quantification of Health Commodities: A Guide to Forecasting and Supply Planning for Procurement.* This supplement describes the steps in forecasting consumption of these supplies when consumption and service data are not available; after which, to complete the quantification, the users should refer to the main quantification guide for the supply planning step.

- Estimating RMNCH Commodity Needs at the Country Level

  This webinar presentation gives a quick overview of the quantification process for the 13 UN-
declared life-saving commodities for women and children. Forecasting algorithms and methods, challenges/bottlenecks, and a Chlorhexidine forecasting example are provided.

- **Estimating demand for a new contraceptive method: Projections for the introduction of Sayana Press**

This document describes a demand estimation exercise conducted in response to an initiative to introduce Sayana Press in Sub-Saharan Africa and South Asia.

**Methods**: Secondary data sources were used to develop estimates of the number of Sayana Press units needed for countrywide introductions in 12 countries. To estimate uptake, the number of women who had stated an intention to use injectables was calculated. Two sets of assumptions (one conservative, one more ambitious) were used to assess conversion to actual use.

**Results**: Even with the use of very conservative assumptions, and assuming no method switching, Sayana Press was estimated to have the potential to cumulatively reach 3?6 million women by 2016.

**Conclusion**: This projected uptake in a relatively short period and at the very beginning of an adoption curve suggests that Sayana Press has promise for countries looking to expand their list of contraceptive choices.

- **A Forecasting Guide for New & Underused Methods of Family Planning?What to Do When There Is No Trend Data?**

This guide provides direction to programs that want to forecast for new and underused methods (NUMs) of family planning. It supports program managers and others involved in forecasting as they plan to (1) introduce a contraceptive technology for the first time in a country, and/or (2) position an underused method for scale up. The guide recognizes that accurate forecasts take into account the larger system into which the NUM will be introduced and scaled, and it offers a framework for building rational assumptions to support accurate forecasting for NUMs, or any family planning method where future demand is inherently difficult to predict. It also identifies common pitfalls in NUMs forecasting and recommends strategies to avoid them.

- **Quantification of Health Commodities: Contraceptive**
Companion Guide Forecasting Consumption of Contraceptive Supplies

The guide describes the steps in forecasting consumption of contraceptive supplies; after which, to complete the quantification, the users should refer to the main quantification guide for the supply planning step. This companion guide also presents a suggested forecasting methodology for the long-acting and permanent methods of contraception (LA/PM) which include the additional medical instruments, expendable medical supplies, pain management drugs, and infection prevention supplies required to provide quality LA/PM services.

Potential Market for CycleBeads®: A Basic Model for Estimating Demand

The purpose of this toolkit is to provide programs with guidelines for establishing an initial supply of CycleBeads® in their country or region. This model is a tool to help program managers use generally available statistics and data to define the potential market for CycleBeads in their area. It is intended to help guide estimations for overall CycleBeads demand in a country for which there is little or no historical data on CycleBeads use.

Regulation, Procurement, and Distribution of a Progestin-Only

Progestin-only ECPs containing levonorgestrel are the preferred product for family planning programs because they are more effective, can be taken in one dose, and have fewer side effects than combined estrogen/progestin ECPs. In 2003, the World Health Organization (WHO) revised the Essential Drugs List to recommend a single dose of 1.5 mg levonorgestrel for emergency contraception instead of two doses of the combined oral contraceptive ethinyl estradiol/levonorgestrel.

This module provides information, as well as specific tools, to help a family planning program prepare for the routine provision of a progestin-only ECPs. Regulation, procurement, and distribution are critical steps in the process of incorporating emergency contraception into a program. Program planners must understand and support these steps to ensure timely provision, adequate quantities, and high quality of the ECP product they plan to provide.

GAP Tool: Gather, Analyze, and Plan
The GAP Tool (Gather, Analyze, and Plan) is a simple Excel-based tool to help policymakers, ministry officials, health officials, and advocates understand and plan for the costs associated with expanding family planning to achieve their country's contraceptive prevalence or fertility goals. The two main outputs produced by the tool are the country's funding gaps for a national family planning program and for family planning commodities.

Malaria

This section of the toolkit presents information on how to develop good forecasts and supply plans for the anti-malaria commodities including ACT, rapid diagnosis tests (RDT) and long-lasting insecticide-treated nests (LLINS) and other antimalarial commodities.

Resources:

- **Global Malaria Diagnostic and Artemisinin Treatment Commodities Demand Forecast 2015 ? 2018**

The Malaria Diagnostics and Artemisinin Treatment Commodities Forecasting Consortium (the Forecasting Consortium) was established by UNITAID to provide better information to policymakers, market participants, and other stakeholders about the size of and trends in the global markets for malaria case management commodities. The Forecasting Consortium comprises the Clinton Health Access Initiative, Inc. (CHAI), IMS Health, and University of California San Francisco (UCSF) Global Health Sciences, is funded by UNITAID, and reports to a Steering Committee made up of UNITAID, the Global Fund to fight AIDS, Tuberculosis, and Malaria (Global Fund), the World Health Organization's Global Malaria Program (WHO-GMP), United States Agency for International Development's President's Malaria Initiative (PMI), and Medicines for Malaria Venture (MMV).

This forecast represents the first in a new series of projections that will be made over the next two years. The initial forecast, presented in this report, provides a baseline projection of the size of the malaria commodity market from 2015 to 2018. Future reports will update and extend the baseline forecast, and also assess different scenarios and events that could impact the market. This forecasting consortium builds on previous models for estimating the size of the market for artemisinin-based combination therapies (ACTs), including WHO-prequalified ACTs (quality-assured ACTs; QAACTs) and ACTs that are not WHO-prequalified(non-quality assured ACTs; non-QAACTs), introduces new information around other categories of antimalarial medicines, such as injectable artesunate and oral artemisinin monotherapies, and estimates the size of the market for malaria rapid diagnostic tests RDTs.
Global Malaria Diagnostic and Artemisinin Treatment Commodities Demand Forecast Forecasting Methodology

Given the past and future uncertainties in the artemisinin market, demand forecasting for QAACTs continues to be important for many stakeholders invested in malaria treatment access. After a sustained period of growth, QAACT demand has reached a plateau that has stabilized artemisinin prices. However, the relatively-low current prices for artemisinin may drive farmers toward planting alternative cash crops, leading to a potential decline in the planted A. annua acreage, and another cycle of artemisinin price fluctuations. Meanwhile, several large-volume countries plan to continue subsidizing QAACTs through private sector co-payments; others that participated in AMFm may lack funding to continue such programs. At the same time, countries are scaling up confirmatory diagnostic testing, particularly with RDTs, meaning that many public sector entities are facing the challenge of funding large RDT procurement volumes while also continuing to pay for the high costs of treatment. Improved market intelligence can help countries and donors improve or develop new strategies to prevent supply shortages and stabilize prices. Such market intelligence would have broad utility for stakeholders throughout the supply chain, including the Artemisia annua farmers, semi-synthetic artemisinin producers, the artemisinin extractors, the manufacturers of rapid diagnostic tests (RDTs), artemisinin-based active pharmaceutical ingredients (APIs), and finished products containing these APIs, the National Malaria Control Programs (NMCPs) and donors.

The new UNITAID forecasting project, whose proposed methods are described herein, aims to forecast ACT and artemisinin monotherapy need, demand, and procurement, as well as RDT demand, and procurement, and artemisinin API demand.

- Quantification, Forecasting, and Planning for Distribution of LLINS

This document briefly describes the requirements as well as challenges associated with the quantification of LLINS. It also gives information on how to calculate the loss rate of LLINS; plan for and execute mass distribution campaigns.

- Good Practices for Selecting and Procuring Rapid Diagnostic Tests for Malaria

This manual, designed as a practical 12-step checklist, provides guidance on the selection and procurement of quality rapid diagnostic tests (RDTs) for malaria. Drawing on the results
of the WHO/TDR-FIND-CDC Product Testing Programme, the manual aims to strengthen the
capacity of national and international procurement officers. It covers all aspects of the
procurement cycle, with special emphasis on product specifications, selection criteria for
different epidemiological settings, different quantification methodologies based on malaria
surveillance and consumption data, as well as quality control through lot testing.

- **Guidelines for Managing the Malaria Supply Chain: A Companion to the Logistics Handbook**

Guidelines for Managing the Malaria Supply Chain: A Companion to the Logistics Handbook
is a practical guidebook on supply chain management with an emphasis on antimalarial
health products. The text should be helpful to program managers who design, manage and
assess logistics systems for malaria programs. Policy makers, system stakeholders, and
others whose jobs relate to antimalarial product supply chains will also find this guide useful.

- **Manual for Quantification of Malaria Commodities**

This manual is designed to provide users, especially those at the malaria program level
including malaria program managers, procurement officers, warehouse managers,
implementing partners, donor agencies and others, with practical steps and guidance on how
to carry out a national-level quantification of artemisinin-based combination therapies (ACTs)
and rapid diagnostic tests (RDTs) for the diagnosis and treatment of uncomplicated malaria.
The manual shows users how to develop a stepwise approach to quantifying ACT and RDT
demand at the program level and to understand the data and the assumptions that are
needed for quantification, especially when the data are imperfect.

- **Quantification for Antimalarial Medicines: A Workbook**

This quantification workbook is a tool designed to assist national malaria programs with the
development of reliable forecasts of their medicine needs. The intended users are both
national and district level pharmacy staff. It will focus on the two main methods for conducting
quantification: the consumption based method and the morbidity method. For new malaria
programs, the adjusted-consumption method is unlikely to be relevant because new
programs have no actual data, and that method requires that estimates be made based on
what is consumed in a comparable location.
Community Case Management

Community case management (CCM) is aimed at reducing mortality from common childhood illnesses among the under-five population at the community level. It is a proven strategy that delivers interventions to include commodities for the most common illnesses especially of childhood nature such as Malaria, Pneumonia, and Diarrhea in places where there is little or no access to facility-based services. CCM is a level of health care that is closest to the community and depends on other higher levels such as the primary and secondary health facilities/levels. Effective CCM leverage on the community resources to bring treatment closer to every household in the community.

This section of the toolkit discusses the strategies for estimating consumption of health products at the community level where there is limited access to health facility services.

Resources:

- **Webinar: Quantification for Community Case Management (CCM)**

  Getting the right quantities of products to community health workers (CHWs) to treat sick children is critical to the success of CCM. Quantification is the first step in ensuring CHWs have the products they need when they need them.

  This webinar will provide program managers with a general overview of the quantification process for CCM, focusing on some of the unique considerations for the community level and potential options to address common challenges.

  This is intended for audiences familiar with CCM but it does not require technical knowledge related to quantification.

- **Quantification for Community Case Management**
CCM brings treatment closer to the community but frequently relies on the same source and flow of products used by facilities. Unless medicines are fully funded and in full supply throughout the system, Community Health Workers (CHWs), who mostly are custodians of commodities for the community, are the most vulnerable to shortages and the most likely to face stock-outs if there is no deliberate effort to ensure products reach them.

- **Quantification of Health Commodities: Community Case Management Products Companion Guide**

Quantification is an important part of ongoing efforts to ensure that countries are able to efficiently procure key products from the local, regional, or global marketplace. This companion guide describes a forecasting methodology that can be used by countries and partners to develop credible demand forecasts for CCM products and to guide planning for procurement and funding.

**Laboratory**

Supply chain management of laboratory commodities is fairly complex, given the varied nature of laboratory equipments, reagents, and consumables involved. Ensuring adequate quantities of these products requires, among other things, good knowledge of laboratory tests and practice that is provided in the resources of this section of the toolkit in detail.

**Resources:**

- **Specifications and Quantities for Efficient Procurement of Essential Equipment and Laboratory Commodities for HIV**

Many low-income and low-middle income countries are developing and implementing national strategic plans for laboratory services as part of the effort towards overall health system strengthening and a key regulatory component that includes laboratory accreditation. In addition, ministries of health are developing cost-saving and time-saving mechanisms to streamline their supply chain management systems. As part of this effort, countries have begun to establish national networks of tiered laboratories with standardized services at each
level. This tool on specifications and quantities for efficient procurement of essential equipment and related laboratory commodities for HIV is part of this effort aiming at increasing performance and efficiency in the delivery of laboratory services.

- **Forecasting diagnostics and strategies to contain cost per test**

This presentation at the 2014 WHO AIDS Medicines and Diagnostics (AMDS) Annual Stakeholders & Partners Meeting discusses, among other things, the particularities of the diagnostics market, cost issues, other uses for the laboratory forecasts (besides commodity needs estimation), challenges associated with lab forecasting, and how the ForLab software program can be of help.

- **Introduction to Laboratory Quantification**

This presentation gives an overview of the laboratory quantification process including the types of laboratory logistic data to be used, the flow and aggregation of laboratory logistic data; the forecasting approaches; and the importance of quantification outputs in decision-making as well as advocacy; among others.

- **Quantification of Health Commodities: Laboratory Commodities Companion Guide for Forecasting Consumption of Laboratory Commodities**

The successful implementation of testing schedules and the expansion of laboratory testing services depends on the continuous availability of high-quality laboratory supplies at all testing facilities. The extensive nature of testing schedules, the variety of equipment and associated reagents and consumables, and the varying characteristics of each of those products pose particular challenges in the management of laboratory commodity supply chains.

The primary focus and purpose of this companion guide is to supplement the general guide, Quantification of Health Commodities: A Guide to Forecasting and Supply Planning for Procurement, by describing, in detail, the specific methodology for forecasting consumption of laboratory commodities as a critical step in the overall quantification process.
The Effect of Standardization on the Procurement & Quantification of Laboratory Commodities

This presentation discusses the general principles of quantification of laboratory commodities, and the impact of laboratory standardization on quantification and procurement, among others. It also gives a quick overview of the laboratory quantification model (tool).

• **Guide for Quantifying Laboratory Supplies**

Laboratory commodities are used to provide preventive and care services that support public health programs, such as human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS), tuberculosis, and malaria. Without adequate laboratory supplies or an effective supply chain to deliver the commodities to facilities on a continuous basis, investments in the provision of these services will not be maximized. The specific characteristics and quantities of laboratory commodities to be handled pose a particular challenge to managing the supply chain. Quantification of health commodities is a process that includes estimating the quantities and the cost of products required to meet customer demand and to fill the pipeline with adequate stock levels, taking into account service delivery capacity, supply pipeline requirements, and resources available for procurement. The primary focus and purpose of this guide is to describe the process and the methodologies used for quantifying laboratory commodities.

• **Introducing ForLab, a new open-source, multi-method laboratory quantification tool**

ForLab is a standardized, open-source tool with clearly defined requirements, improving programs’ ability to collect and analyze data to accurately forecast commodity needs. ForLab performs long- and short-term forecasts and guides improvements in diagnostic services.

Tuberculosis

This section of the toolkit provides information on anti-TB drug management, including estimation of needs (quantification).

Resources:
ANNEX 9?How-to? guide for forecasting drugs needs and tools for quantification and forecasting

National tuberculosis control programmes (NTPs) need to be able to determine how many drugs are needed and to monitor if there is the risk of stockouts, overstocks or expiration. The use of accurate assumptions for quantification of all steps is essential. This requires the central NTP to collaborate with treatment facilities and warehouse personnel to collect and consolidate accurate information on patient treatment, and stock position of second-line anti-TB drugs. Coordination of the NTP with the procurement unit is also important to facilitate drug orders and deliveries.

Operational guide for national tuberculosis control programmes on the introduction and use of fixed-dose combination drugs

The recommendation of WHO and the International Union Against Tuberculosis and Lung Disease (IUATLD) and their partners, for the introduction and use of Fixed Dose Combination (FDC) formulations of the essential anti-TB drugs, forms part of the expanded Direct Observation Therapy (DOT) framework for effective TB control. The main objective of this guide is to assist National Tuberculosis Programme (NTP) managers and personnel, including DOTS strategy implementers, drug procurement officers/personnel at different levels (national, regional, local), DOT providers, and drug regulatory authorities, in making policy decisions and planning to successfully introduce FDCs in their TB control programmes.

Quantification and Pricing

Global Drug facility (GDF) has developed an Excel tool for quantifying TB drug needs. The tool is mainly intended for use by consultants (during their missions) alongside field staff when estimating quantities of commodities to be ordered. Additional information on TB drug management can be found on the Procurement and Supply Management (PSM) Tools web page.

Vaccines

Under or overestimation of vaccine commodity requirements may lead to vaccine
understock/shortages or overstock/wastages which in turn may impact health conditions or costs respectively. This section of the toolkit presents information on vaccine forecasting and the tools used to calculate the right quantities of products and supplies required for immunization programs.

**Resources:**

- **Vaccine forecasting**

  Vaccine, Device, and Cold Chain Forecasting is the first step in ensuring adequate immunization supplies and is the foundation of Vaccine Security. The accuracy of the forecast is important - underestimating the requirements results in vaccine shortages, overestimating results in excess stock - increasing the manufacturers' costs, which in turn increases the cost to UNICEF.

  The goal of vaccine forecasting is to estimate the quantity of goods and financial needs necessary to conduct immunization programmes. The value of the forecast depends on the accuracy - taking into consideration the type of vaccine, the presentation (vial size), the quantity and the timing of delivery of the vaccine. Poor forecasting may result in delays or shortfalls in delivery, additional costs, and reduces UNICEF credibility with manufacturers.

- **Vaccine forecasting and needs estimation**

  The accuracy of vaccine forecasting and needs estimation depends on both the level of implementation (national, district or local service delivery) and the time period of estimation used (month, year, multi-year). Whichever method is applied, the accuracy of the estimation will depend on the quality of data used, as well as the Programme Manager’s knowledge of specific programmatic conditions.

  Multi-year planning for immunization typically covers a three to five year period. The method recommended for estimating vaccine needs for multi-year planning is based upon the target population and is linked to the immunization strategies that have been defined.

- **Immunization Manual for Health Workers**

  This reference manual was developed by the Kenya Expanded Program on Immunization (KEPI) with the aim of improving immunization performance by building capacity of health workers involved in immunization activities. It provides information on all aspects of
immunization (based on the country context) including service delivery, vaccine quality, data management and, forecasting, among others.

Country Experiences

This section of the toolkit contains technical reports from various countries, which detail the processes, steps, and methodologies used in quantification exercises involving different types of health commodities including ARVs, contraceptives, antimalarials, vaccines, anti-TB, and MNCH commodities, among others. The quantification outputs (estimated consumption, final commodity requirements, and costs, gap analysis results etc.) are presented.

Country Experience - HIV & AIDS

Resources:

- Rapport de Quantification des Antirétroviraux: Période Octobre 2014 à Décembre 2017

Au Mali, l'objectif de la Politique pharmaceutique nationale est de garantir un accès équitable aux médicaments essentiels de qualité aux populations et promouvoir leur usage rationnel. Dans ce contexte, la disponibilité des intrants pour la prévention et la prise en charge de l'infection à VIH est une composante essentielle des stratégies globales de lutte contre le VIH et le SIDA préconisée et adoptée par la Cellule Sectorielle de Lutte contre le SIDA (CSLS).

La quantification, composante du cycle de gestion des médicaments, est le processus qui permet l'estimation de la quantité nécessaire d'un produit pour satisfaire les besoins d'approvisionnement. Elle permet d'estimer les quantités requises, le financement nécessaire pour son achat et le calendrier de livraison (plan d'approvisionnement) afin de garantir un approvisionnement continu au sein d'un programme de santé donné.

Pour parvenir à une estimation rationnelle des besoins en produits de santé, la Direction de la Pharmacie et du Médicament (DPM) en coordination avec le CSLS, avec l'appui technique et financier du programme des systèmes pour l'amélioration de l'accès aux produits et services pharmaceutiques (SIAPS par son sigle anglais) implémenté par MSH, a organisé l'atelier de quantification pour les intrants de lutte contre le VIH/SIDA en décembre 2014.

-
Quantification of HIV and AIDS Commodities for April 2014 through March 2016, Swaziland

The Government of Swaziland (GoS) has made significant progress in addressing the HIV and AIDS epidemic through a series of strategic plans and frameworks. An important component of the plans and frameworks is the regular and systematic quantification of HIV and AIDS commodities to ensure the regular and uninterrupted supply of life-saving medicines. This technical report details the quantification exercise carried out by the government, which included antiretroviral medicines (ARVs) for antiretroviral therapy (ART), medicines for prevention of mother-to-child transmission (PMTCT), medicines for opportunistic infections (e.g., co-trimoxazole prophylaxis), medicines for isoniazid preventive therapy (IPT) such as isoniazid (INH), and medicines for Kaposi’s sarcoma.

Botswana: Condom Programming National Condom Quantification and Supply Chain Strengthening

In December 2012, the Ministry of Health of Botswana—with technical assistance from the Supply Chain Management System (SCMS) project and the USAID | DELIVER PROJECT, Task Order 4—conducted a supply chain strengthening exercise of the national condom program. The team also trained a group of stakeholders on the basic principles of quantification and on considerations for quantifying condoms, in particular. This report includes the results of the quantification, as well as the short- and long-term recommendations to improve the condom logistics system in Botswana.

KNASP III COMMODITY PLAN FOR HIV & AIDS COMMODITIES for the financial years 2009/10 to 2012/3
Among the objectives of the KNASP III development are to develop a costed and prioritized Strategic Plan covering the period 2009/10 to 2012/13 with clear vision, goals, and targets. The full and final KNASP III will contain a Commodity Projection Plan (CPP) that is informed by a comprehensive commodity needs and gaps analysis in the areas of prevention, treatment and care as well as systems strengthening. The Commodity plan should propose ways of harmonizing the existing parallel stakeholder commodity plans with an aim of stopping stock-outs. This Commodity plan should focus on harmonizing issues and fill gaps in commodity need, management capacity, procurement policies and systems, quality assurance and quality control, international and national laws, coordination, and commodity management information systems.

- **Kenya: 2020 Supply Chain Modeling Forecasting Demand Over 2020-2024**

In 2010, LLamasoft, with technical assistance from the USAID | DELIVER PROJECT, Task Order 1, developed a modeling framework to forecast public health supply chain needs and enable policymakers to strengthen the logistics situation. Here, the model was applied to understand and analyze the current and future state (2020-2024) supply chain requirements for procuring and distributing essential medical commodities in Kenya. The developed methodology in this report can be employed in any country for any future time frame.

- **HIV/AIDS Related Commodity Requirements for the Federal Republic of Ethiopia: 2009 to 2014**

A comprehensive and effective response to HIV/AIDS requires multi-sectoral and multi-programmatic coordination across a range of programs that rely on a diverse portfolio of commodities. Securing commodities for these programs and sustaining the continuity of commodities in rapidly growing programs necessitates strong supply chain management, resources, coordination, and harmonization. The FHAPCO, stakeholders, and partners consider the routine and comprehensive quantification of HIV/AIDS-related commodities a critical step for effective program implementation and expansion. This third national quantification exercise had two main objectives:

1. Complete the National HIV/AIDS Commodities Quantification for the program years 2009-2014
2. Develop a 2-year Supply Plan for the years 2009 and 2014
Country Experience - Laboratory

Resources:

- Training on ForLab and Long-Term Forecasting and Supply Planning of HIV and AIDS-Related Lab Commodities in Cameroon: Technical Report

A middle-income country in Central Africa, Cameroon had a HIV prevalence of 4.3% in 2011 in the general population 15-49 years of age (2011 DHS). The number of HIV patients on antiretroviral treatment (ART) has grown from a few hundred in 2001 to 78,000 at the end of 2009 and to 131,531 at the end of 2013.

The goal of the Ministry of Health (MoH), along with National AIDS Control Program (Comité National de Lutte contre le Sida; CNLS), US Centers for Disease Control and Prevention/US President’s Emergency Plan for AIDS Relief (CDC/PEPFAR), US Agency for International Development (USAID)/PEPFAR, and the Centrale Nationale d’Approvisionnement en Médicaments et Consommables Médicaux Essentiels (CENAME) in Cameroon is to scale up prevention and comprehensive HIV and AIDS care and treatment. To achieve this goal, the MoH has identified the need to improve the current technical knowledge of quantification of HIV and AIDS commodities, specifically laboratory products.

The USAID Mission in Cameroon has requested that the Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program provide technical assistance to Cameroon to strengthen coordination for quantification with key partners involved in supply chain management to ensure an uninterrupted supply chain for HIV and AIDS commodities through a consolidated and coordinated quantification mechanism.

- Zambia: National quantification of HIV test kits

In December 2008, the Ministry of Health (MOH), with technical assistance from the USAID | DELIVER PROJECT, Task Order 1, with funds from the President’s Emergency Plan for AIDS Relief (PEPFAR), conducted a national long-term forecast of rapid HIV tests for 2008 through 2015. The quantification’s overall objective was to calculate rapid HIV test requirements for each year of the forecast period and to use those requirements to mobilize resources for the country. This report presents the findings of the forecast as well as the methodology used and assumptions made.
Country Experience - Malaria

Resources:

- **Malaria commodities quantification and supply planning review for FY2013/14 Technical Report**

Over the past few years, the Division of Malaria Control (DOMC) in collaboration with partners has been carrying out an annual forecasting & quantification exercise to establish the malaria commodities requirements for the country.

The quantification exercise is spearheaded by the Drug Supply Management Subcommittee (DSMSC) of the Case Management Technical Working group of the DOMC. This committee comprises the DOMC which is also the Chair, Management Sciences for Health (MSH) Health Commodities and Services Management (HCSM) program providing the secretariat, Kenya Medical Supplies Agency (KEMSA), the Department of Pharmacy, Department of Primary Health Care Services and Clinton Health Access Initiative (CHAI). One of the key functions of the DSMSC is to advise the DOMC on commodity security and supply chain related issues for Malaria commodities. The objectives of the exercise this year was to determine the national requirements for Malaria medicines and diagnostics (specifically Rapid Diagnostic Tests (RDTs)) for the financial year 2013-2014 and forecast the Malaria commodities requirements for 2013 ? 2016.

- **Tanzania: Quantification and Supply Planning for Antimalarial Medicines**

In May of 2008, the USAID | DELIVER PROJECT provided technical assistance in quantifying antimalarial medicines and diagnostics and preparing procurement plans for select partners in Tanzania, including the National Malaria Control Programme, the Accredited Drug Dispensing Outlet (ADDO) program, and the United Nations High Commission for Refugees (UNHCR). The overall objective of this technical assistance is to ensure an adequate supply of antimalarial commodities managed by each program or partner by forecasting commodity needs from May 2008 ? 2010 and preparing procurement plans for each commodity by the program. This report presents the findings of this technical assistance activity.
Country Experience - RMNCH

Resources:

- Rapport de Quantification des produits de la planification familiale pour la période de 2015 à 2018

Le gouvernement du Mali à travers le Ministère de la Santé et de l’Hygiène Publique s’est engagé à assurer la sécurité des produits de la santé de la reproduction pour tous les maliens, afin qu’ils soient en mesure de choisir, obtenir et utiliser des contraceptifs de qualité et autres produits de santé en matière de reproduction, où et quand ils en ont besoin. L’un des piliers de la sécurité des produits PF est la disponibilité continue et optimale des produits de PF. Une bonne quantification de ces produits basée sur des évidences est un maillon essentiel dans le cadre de la sécurité des produits, car elle assure la planification et la mobilisation des ressources nécessaires, fournit des données et informations pour l’achat et la distribution efficace des produits. Une bonne quantification peut également réduire les coûts et le gaspillage surtout dans un contexte de ressources limitées.

L’exercice de quantification de 2014 pour les produits de la PF a été fait sur la base 20,1% de PC en 2018 selon le plan d’action PF et les résultats ont montré une surévaluation des besoins du pays. La quantification de 2015 a été menée dans un contexte d’harmonisation de Rapport de quantification des produits de la PF pour la période de 2015 à 2018.

- Enhancing Family Planning Market Knowledge

In December 2014, Zambia’s Ministry of Community Development, Mother and Child Health, with technical assistance from the USAID ? DELIVER PROJECT, conducted a national family planning quantification exercise. The total market data resulting from the collaboration between IMS Health, Medicines for Malaria Venture, Zambia Medicines Regulatory Authority, and the Ministry of Health was reviewed and applied to the quantification exercise. This report includes the data sources, key features, and limitations of the market data; results of the data review; and description of how the data was used to inform the quantification exercise.

- India: Data Drives Forecasting in Haryana and Jharkhand

Forecasting demand and coordinating activities to meet that demand are critical functions.
Forecasting informs supply chain decisions on program need, product selection, funding gaps, procurement, and delivery. Forecasting exercises help program managers identify funding needs and determine the timing for procurement, maximize the use of available resources, and advocate for additional resources to ensure a continuous supply of commodities. In India, the USAID | DELIVER PROJECT has introduced more rigorous forecast methodologies for supply chain needs in the public sector.

Quantification, Procurement and Quality Assurance

The Global Markets, Quality, and Regulation Technical Resource Team is organizing a series of regional workshops in Africa on the optimal procurement of affordable and quality-assured life-saving commodities for maternal health. The workshops are bringing together country representatives to review countries' experiences in quantification, procurement, quality assurance of life-saving maternal health commodities, examine challenges, highlight the most successful interventions in making the products available and share the latest global development and market intelligence on the procurement of essential commodities.

The first of these workshops was organized by the World Health Organization and the Concept Foundation in September 2015 in Uganda, and brought together procurement experts from Kenya, Malawi, Tanzania and Zanzibar, Uganda, Zambia, and Zimbabwe. Participants reviewed each country's experience in terms of quantification, procurement and quality assurance for maternal health commodities, and shared global data on quality assurance and market intelligence for life-saving commodities.

The documents and presentations used during this first workshop could inform subsequent regional meetings.

Quantification of Family Planning Commodities for January 2014 to December 2018

The Government of Swaziland (GOS) is committed to ensuring that reproductive health commodities are available to the people of Swaziland. One of the pillars of family planning commodity security is the continuous and optimal availability of these commodities. With technical assistance from UNFPA and USAID-funded SIAPS, as well as the participation of all major stakeholders, the Ministry of Health conducted a quantification exercise with the objective of producing a forecast and supply plan for the period 2014-2018. The results of this quantification exercise will be used in planning, mobilizing, and securing financial resources for the quantification period and for establishing estimated procurement requirements in the short term.
South Sudan Reproductive Health Commodity Quantification

In November 2013, the South Sudan Ministry of Health, with technical assistance from the USAID | DELIVER PROJECT, Task Order 4, and UNFPA South Sudan conducted the South Sudan Maternal Health and Family Planning Commodity Requirements and Financing Need 2014?2016. This report documents the results of that review.


In May 2014, Subsidy Reinvestment and Empowerment Program on Maternal and Child Health Project Implementing Unit SURE-P MCH PIU, with technical assistance from the USAID | DELIVER PROJECT, Task Order 4, conducted the 2014?2015 SURE-P Maternal and Child Health (MCH) Commodity Requirements and Financing Needs study in Nigeria. The commodity forecast was generated using demographic-based and hybrid morbidity and service statistics?based methodologies. From the forecast, the total commodity needs were generated for a period of 18 months and were estimated to cost $19,167,895 for medicines and $11,044,988 for supplies. This report includes the quantification methodology and results as well as recommendations to improve the continuous availability of MCH commodities for the SURE-P MCH program.

Bangladesh: Forecasting Exercise of the Reproductive, Maternal, Newborn, and Child Health Commodities Prioritized by the UN Commission on Life-Saving Commodities for Women and Children

In September 2012, the United Nations Commission on Life-Saving Commodities for Women and Children released its recommendations for improving access to 13 priority commodities across the reproductive, maternal, newborn, and child health (RMNCH) continuum. These recommendations focused on developing markets, both local and global, for these commodities; strengthening national supply chains; and improving demand. One of the supply chain areas for these commodities that were identified as particularly weak was forecasting and supply planning. For several of these commodities, the data required to estimate need accurately are unavailable in many countries and national forecasts are based on unsubstantiated assumptions and often on data from past procurements. This is the case.
for many commodities procured by the Ministry of Health and Family Welfare (MOHFW) in Bangladesh.

The U.S. Agency for International Development (USAID)/Bangladesh requested assistance from the Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program, implemented by Management Sciences for Health (MSH), to address supply chain management issues related to essential medicines, especially tracer drugs (determined by Forecasting Working Group of the MOHFW) with maternal, newborn, and child health (MNCH) products, helping the Government of Bangladesh (GOB) and other key national stakeholders to improve the security of essential health medicines in the country, strengthen the distribution and management information systems in place, and build local capacity to strengthen health systems. As part of this effort, SIAPS has been working with relevant GOB departments to improve forecasting and supply planning of RMNCH commodities.

National Reproductive Health Commodities Quantification Bangladesh 2012-2016

Bangladesh is one of the world’s most densely populated countries, struggling with the negative effects of high population growth rates. The government has recognized that the massive population is an obstacle to economic development and has developed the National Population Policy to reduce fertility to replacement level by 2016. The Family Planning (FP) Program is implemented by the leadership of the Directorate General of Family Planning (DGFP).

To ensure the sustainable availability of FP commodities and achievement of the goals, commodity demand has to be quantified properly and resources have to be allocated. Thus, this quantification exercise was organized by DGFP in collaboration with SIAPS to develop a five-year (2012-2016) forecast of FP commodities with a two-year supply plan; results of the exercise can be used for evidence-based procurement decisions to guide future procurement actions and ensure sustainable availability of commodities for the program. The exercise sets the stage for the establishment of a consistent mechanism for regular updates of the national forecast and supply plans for FP commodities through DGFP’s forecasting working group (FWG) to ensure FP commodity security at the national level.

Nigeria: Nationwide Forecast and Funding Gap Analysis Maternal, Newborn, and Child Health Commodities

In July and August 2012, the Federal Ministry of Health (FMOH) of Nigeria, with technical assistance from the USAID | DELIVER PROJECT, Task Order 4, conducted a forecast to generate funding gap analysis for commodities for maternal, newborn and child health (MNCH) in Nigeria for one year. The forecast and funding gap analysis would be used to
inform the FMOH strategy for achieving Millennium Development Goals 4 and 5 by 2015 by focusing on integrated maternal and child services at public health facilities. This report includes the findings of the forecast, as well as the funding gap analysis, which can be used for advocacy with key stakeholders to increase the level of funding and, eventually, the availability of commodities for MNCH conditions in Nigeria.

Country Experience - Tuberculosis

Resources:

* National Anti-TB Drugs and Laboratory Reagents and Supplies Quantification: Bangladesh 2012-2016

For TB commodities to be available at a sustainable level and meet the Millennium Development Goals by 2015, the demand for the commodities has to be quantified properly and resources have to be allocated. The National Tuberculosis Control Program organized a quantification exercise in collaboration with SIAPS to develop a five-year (2012-2016) forecast of TB commodities with a two-year supply plan. This plan will provide evidence-based procurement decisions which will guide future procurement actions and ensure sustainable commodity availability for the program. The quantification exercise was undertaken with active participation of the relevant partners in the program. The exercise sets the stage for the establishment of a consistent mechanism for regular updates of the national forecast and supply plans for TB commodities to ensure TB commodity security at national level.

* Second Africa TB Regional Conference on Management of TB Medicines: Country experience in planning, quantification and supply of MDRTB medicines in Kenya

Even though the fight against TB has yielded significant results over the last few decades by almost halving TB mortality since 1990, the disease continues to be a public health burden in many countries. Add to this, the MDR-TB, which represents 3.3% of all new TB cases worldwide. This report describes Kenya’s experience with needs estimations for MDR-TB medicines, including the challenges faced and lessons learnt.
Country Experience - Vaccines

Resources:

- Bangladesh EPI Vaccines Forecasting for 2012-2016

Bangladesh SIAPS is working to strengthen MOHFW's procurement and supply chain management systems; also key directorates (DGFP, DGHS, DGDA, etc.) to assure availability of quality pharmaceutical products.

Advocacy

This section of the toolkit discusses how quantification results may be used as an advocacy tool to influence decision-making with regard to increased access to public health commodities, particularly in the area of family planning.

Resources:

- Reality check: A planning and advocacy tool for strengthening family planning programs: Version 3 user's guide

Reality Check is an easy-to-use tool that generates data for evidence-based advocacy and strategic planning in FP programs. The tool can be used to set realistic FP goals and plan for service expansion to meet them; it can also provide data for advocacy by estimating program requirements for implementation, along with the health impact of achieving contraceptive goals. The tool enables users (a) to quickly test future goal scenarios, including changes in the method mix, and (b) to compare those future scenarios with past performance to determine whether current goals are feasible.

This User's Guide provides instructions for using the tool and explains the methodology and key concepts behind the tool. The complete Reality Check package consists of the tool itself, the User's Guide, and a flash drive containing an electronic version of the guide, the tool, and additional resources, including electronic copies of the resources used for this guide.
Programming the Purchase of Medicines and Supplies in the Dominican Republic’s Public Health System

Until 2010, estimates and programming for the purchase of medicines and supplies in the Dominican Republic’s public health sector were carried out by each individual health facility without the benefit of a standardized methodology. In 2011, the Ministry of Public Health, with the support of SIAPS, conducted a series of national procurement programming exercises using a standard methodology. These programming exercises are making it possible to ascertain for the first time that the resources allocated by the Ministry of Finance were insufficient to finance the needs for medicines and supplies as estimated in the programming exercises.

- **Reality Check: A Planning and Advocacy Tool for Strengthening Family Planning Programs (Version 3)**

  Reality Check generates data for evidence-based family planning advocacy and strategic planning by examining the relation between contraceptive prevalence rate (CPR) and population to estimate the resources required to achieve a future goal and the potential impact of achieving that goal.

- **GAP Tool: Gather, Analyze, and Plan**

  The GAP Tool (Gather, Analyze, and Plan) is a simple Excel-based tool to help policymakers, ministry officials, health officials, and advocates understand and plan for the costs associated with expanding family planning to achieve their country’s contraceptive prevalence or fertility goals. The two main outputs produced by the tool are the country’s funding gaps for a national family planning program and for family planning commodities.

**Training**

This section of the toolkit contains training guides, videos, webinars, workshop PowerPoint slides, and links to training organizations which will help users either acquire new knowledge and skills in quantification or strengthen their expertise.

**Resources:**
The Art and Science of Forecasting

Forecasting is a critical supply chain activity that links information on services and commodities from the facility level with program policies and plans at the national level and is then used to inform higher level decision making on the financing and procurement of commodities. Forecasting is a complex activity in that it involves using hard data to make mathematic calculations, but it also involves using contextual clues to make judgments and predictions. The dual use of both "art and science" in the forecasting process is the main focus of this video. The video combines animated teaching segments with commentary from field experts who share their wisdom, experiences, and advice on this interesting topic.

Quantification of Health Commodities: Trainers Manual and Curriculum

The success of a health care system is highly dependent on the availability of adequate health commodities. Several factors are involved in ensuring their availability. Among them is proper planning and estimation of quantities required for a given period. Determination of these requirements can be tedious and time-consuming. However, the results of the process translate to tangible gains. To achieve consistent and rational supply of health commodities, health care workers at all levels of the healthcare system, and supply chain managers need to be equipped with the necessary knowledge and skills on quantification.

The main goal of this course is to equip senior, middle level and supply chain managers with the necessary knowledge, skills, and attitudes to enable them effectively quantify and forecast their health commodity requirements.

Quantification of Health Commodities: Participants Manual and Curriculum

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the necessary knowledge, skills, and attitudes to enable them effectively quantify and forecast their health commodity requirements.

- **Quantification in Resource-limited Settings**

  This PowerPoint presentation discusses, among others, the main objectives of good quantification, forecasting methods, applications of quantification results, challenges inherent to quantification exercises in resource-limited settings, and some lessons learned.

- **Quantification of health commodities course**

  S BUYS ACADEMY in partnership with the USAID | DELIVER PROJECT will be offering an introductory course in Quantification and Procurement Planning. The goal of this course is to increase participants’ knowledge and skills in using a data-driven process to:

  - Improve accuracy of forecasts.
  - Estimate funding requirements and identify funding sources to meet mid to long term needs.
  - Develop a procurement plan.
  - Understand the utility of software packages in quantification and procurement processes.
  - Evaluate and respond to environmental or policy constraints to forecasting and procurement planning.

- **Quantification of Health Commodities**

  This course instructs participants on how to forecast commodities using a variety of different methods. It discusses the various data sources that can be used for forecasting and how to deal with potential problems with data including what to do if you are missing some data or the data is affected by stockouts that have occurred in the past. It also instructs participants about supply planning, teaching the mathematics behind it, and how to project future stock levels and procurement requirements based on the forecast, current stock and current and planned orders. Finally, it explains how supply planning is related to forecasting. PLEASE REFER TO PDF FILE PROVIDED ONCE YOU HAVE FINISHED THE COURSE.

- **Course Preview of Quantification of Medicines and Health Products**
This short introductory course is a first encounter with the basic concepts and exercises of quantification of medicines and health products. It gives participants a preview of the content and approach offered in our full quantification online session, primarily designed for people who are active in the public health sector of low and middle-income countries (LMIC) or in health programmes which involve the supply of commodities.

• **E-Learning**

While training in health supply chain management is in high demand, many health professionals are not able to attend training courses due to limitations such as lack of funding, timing conflicts, and inability to travel or be away from the workplace.

To make this essential training as accessible as possible to public health logisticians, the USAID | DELIVER PROJECT developed Lessons in Logistics Management for Health Commodities, a set of eight interactive learning sessions which can be accessed online or through a CD that allows the user to work at his or her own pace to learn the basics of logistics management. The sessions include:

- Introduction to Logistics
- Logistics Management Information Systems
- Assessing Stock Status
- Maximum-Minimum Inventory Controls Systems
- Selecting Maximum-Minimum Inventory Controls Systems
- Storage of Health Commodities
- Assessing Logistics Systems
- **Quantification of Health Commodities**

**Source URL:** https://www.k4health.org/toolkits/quantification-public-health-commodities