District Health Commodities Forecasting & Supply Planning Guidelines

2020

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CONTENTS

ACRONYMS

BHS	Basic Health Services
DHIS	District Health Information System
DHPMT	District Health and Population Management Team
EML	Essential Medicines List
FASP	Forecasting & Supply Planning
GHSC-PSM	Global Health Supply Chain Program-Procurement and Supply Management
HMIS	Health Management Information System
KP	Khyber Pakhtunkhwa
LMIS	Logistics Management Information System
M&E	Monitoring and Evaluation
MCC	Medicines Coordination Cell
MICS	Multi Indicator Cluster Survey
MISes	Management Information Systems
NGO	Non-Governmental Organization
NIPS	National Institute of Population Studies
PDHS	Pakistan Demographic and Health Survey
TB	Tuberculosis
TWG	Technical Working Group
USAID	U.S. Agency for International Development

ACKNOWLEDGEMENT

The key challenge encountered by the districts is the uninterrupted and timely supply of health commodities at all levels of supply chain, most critically the last mile. Admittedly, the outcome of ensuring commodity security at the last mile could only be effectively accomplished through cascading of the fundamental supply chain functions at the district and sub-district levels.

We proudly put forward the completed version of the District Level Supply Chain Package, which was prepared after months of effort. The package containing supply chain guidelines will help the district staff to ensure best supply chain practices at the district and below levels, contributing towards improved access of health commodities to the people.

The Health Department, Government of Khyber Pakhtunkhwa is committed to improve the health and quality of life for all, particularly women, children and marginalized communities, through access to essential quality health services which are accessible, equitable, culturally acceptable, affordable, and sustainable.

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PREFACE

The District Health Commodities Forecasting and Supply Planning Guidelines will serve as a key document for the officials working in the health department at the district level who are involved directly or indirectly in supply chain and forecasting and supply planning activities. The aim of these guidelines is to outline the forecasting and supply planning related guidelines based on international best practices. These guidelines are widely applicable to a broad range of health commodities, including but not limited to essential drugs for basic health services, vaccines, contraceptives, malaria rapid diagnostic tests, antimalarial, typhoid and tuberculosis (TB) medicines.

PREAMBLE

In order to increase access to health commodities for the population, it is imperative to ensure their availability at service delivery points. This availability hinges on realistic forecasting of supply requirements. Forecasting and quantification is a critical supply chain activity that links information on services and commodities at the facility level to the program policies and plans at the district level; it is then used to inform decision-making on the financing and procurement of commodities.

The key challenge facing districts is the uninterrupted and timely supply of health commodities at all levels of supply chain, most critically at the last mile. To address the challenge of health commodity security, there is a need for forecasting and quantification policy relying on high quality and reliable data, knowledgeable personnel, and the strengthened coordination of key stakeholders. Without these three key components, quantification exercises often lead to inadequate forecasts of commodity needs, resulting in an under or oversupply of lifesaving commodities.

OBJECTIVE

The objective of the Forecasting and Quantification guidelines is to pave the way for a fully functional and structured forecasting and supply planning (FASP) mechanism that systematically determines district specific commodity requirements, estimates their financial costs, and coordinates fulfillment of projected needs to support the continuous availability of commodities. These guidelines will enable the districts to institutionalize forecasting and supply planning at the district level and ensure accurate and timely forecasting and quantification of the health commodities needed for primary and secondary health service delivery.

STANDARD GUIDELINES

COMMODITY SECURITY

Commodity security exists when every person can obtain and use quality essential health supplies whenever they need them. Multiple factors can affect availability of the entire range of medicines at a district store, including but not limited to: budget, space, diseases burden, emergencies, and human resource capacity. Given these limiting factors, there is a need to prioritize the medicines list and district requirements. It is generally the healthcare providers' decision which specific drug is required to treat the patients (a patient will not choose what size needle to use for a suture, for example).

PRODUCT SELECTION

Product selection is an important step that precedes quantification and helps district managers select which products they intend to provide and bring into the district health care system. Limiting the number of products and medicines have several benefits including:

- making the supply chain more manageable – can set up a logistics system more quickly which can ensure better product availability;
- improves staff familiarity with products – working with fewer products allows district and sub-district level staff to become more familiar with them from district storekeeper to dispenser in facility

Product selection and standardization lies at the heart of supply chain function. At the provincial level, Medicine Coordination Cell (MCC) undertakes national competitive bidding for selection and rate contracting of drugs and medicines, surgical disposals, and non-drug items (hospital supplies). The MCC contracts out the unit rates of selected pharmaceutical products from pre-qualified and responsive pharmaceutical firms. The bulk of the selected products are in turn purchased by the districts for their respective facilities. Use of these rates lists is understood to be compulsory for districts. Since the MCC rate list is very extensive and caters to a wide range of medicine classifications required for various specialties and sub-specialties in a health system, there is a need to identify a priority list of medicines from within the same MCC list that should be available in full supply at the district health facilities catering to basic health services.

QUANTIFICATION

Quantification is the process of estimating the quantities and costs of the products required for a specific health program (or service) and determining when the products would be delivered to ensure an uninterrupted supply for the health care continuum.

QUANTIFICATION ACTIVITIES

- **Forecasting:** estimating the quantities of the health commodities required for a specific health program (or service)
- **Supply planning:** determining the cost and when the health commodities should be delivered to ensure an uninterrupted supply for the program

IMPORTANCE OF QUANTIFICATION

The results of a quantification exercise help district level managers:

- Identify the funding needs and gaps for procurement of necessary commodities
- Leverage the sources, amounts, and timing of funding commitments to maximize the use of available resources
- Advocate for additional resources, when needed
- Ensure procurement is coordinated with forecasted supply needs to ensure a continuous supply of commodities

Quantification depends on health commodity selection (i.e. the right products), data from service delivery points (through LMIS, HMIS, DHIS and vertical MISes), district/program level data on program policies, (e.g. Standard Treatment Guidelines), strategies for service delivery, program expansion plans, and external data availability of health commodities in the market.

OVERVIEW OF STEPS IN QUANTIFICATION

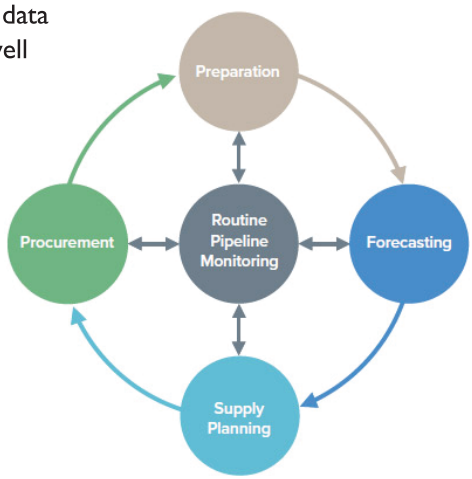
1. PREPARATION

Prior to beginning any data collection for quantification, the following steps should be taken:

1.1 Assembling a team. Most quantification teams have 6-10 members who represent stakeholders from across the supply chain. They can be: district health officers, district coordinators or program managers, logistics officers, HMIS or DHIS coordinators, procurement specialists, M&E staff, storekeepers, provincial representatives, facility management or any officials who directly involved in supply chain matters within the district. Members from the private sector with relevant expertise can also be contacted if needed, provided they have no conflict of interest. The team members should have:

- Skills related to the specific program area
- Knowledge about the commodities and their use
- Computer literacy
- A proficiency in Excel
- Commitment to conducting ongoing data collection and monitoring,
- The ability to create and manage databases

Additionally, team members should be contributing to updating data pertaining to forecasting, assumptions, and supply planning, as well as findings compilations and presentation.



1.2 Defining the purpose and scope of the quantification exercise.

This step includes:

- Identifying the specific list of products to be quantified, including all formulations, dosages, and brands of products required for the health program
- Determining if products are quantified for use in the public sector program, NGO sector, or faith-based organizations.

- Defining the geographical outreach of the health program that products are to be quantified for. This allows all stakeholders to know full extent of commodity needs to coordinate mobilization and allocation of resources for procurement.
- Defining the timeframe for the quantification. A two-year period is recommended for procurement quantification. Quantifications for longer periods (5 years or 7 years) may be conducted for advocacy to secure financial commitments and resource mobilization.

1.3 Collecting required data. For the forecasting step, it is recommended to collect as many types of data from as many sources as possible to crosscheck and validate the forecast. Generally, four different types of data are used for forecasting health commodities:

i. **Consumption Data**: Forecasting based on consumption data involves working directly with the quantities of products being dispensed or used over a specified period. The data can be acquired from LMIS & HMIS reports. If the LMIS or DHIS/HMIS does not accurately report consumption, then supply orders or purchase orders from the districts could also serve as tools for compiling and gleaning information pertaining to the commodities ordered over a specified period. When forecasting is based on consumption data, a major assumption is that products are dispensed according to the dispensing protocols.

ii. **Service Data:** The number of specific services provided, or number of patients/client visits over a specified period. The data can be extracted from HMIS reports and examples include:
- Number of pregnant women who received an HIV test
- Number of cases of TB treated
- Number of new clients or number of first time visits
- Number of returning clients or number of returning visits
- Number of children with acute respiratory infections treated
- Number of births having taken place at the health facilities

iii. **Morbidity Data:** Morbidity data may be of two types:

- Facility-based morbidity data is based on the number of cases of a disease or health condition treated. As such, morbidity data is linked to services data since cases treated are services that were provided at the service delivery level. This data can be extracted from HMIS reports and can be used for estimating the quantities of products that would be required to treat all cases. In the absence of consumption or services data of health facilities, an estimated number of cases of the disease or health condition that will be treated is used.
- Population-based morbidity data is based on the prevalence or incidence of a disease or health condition present in a population in a specific point in time. It can be acquired from surveys like the Pakistan Demographic and Health Survey (PDHS) or the Multi Indicator Cluster Survey (MICS). Examples include:
    - Number of cases of tuberculosis treated in a month
    - Number of cases of malaria treated in a month or year.

iv. Demographic Data: Is data on the number and characteristics of the population for whom the quantification is being conducted, including population size, age, sex, geographical location, behavior (at risk populations), preferences (choice of contraceptive method) or other characteristics such as the number of

people targeted for services based on population figures. It can be acquired from Census or National Institute of Population Studies (NIPS) reports.

Additionally, established Standard Treatment Guidelines are important to understand what recommended products and dispensing protocols for diseases are being targeted by programs.

2. FORECASTING

The activities in the forecasting step are:

2.1. Organize and analyze data. After the data is collected, its quality needs to be assessed. Several adjustments may have to be made to accommodate for issues such as the incompleteness of reporting or outdated and unreliable data.

2.2. Build and obtain consensus for forecasting assumptions. Build and obtain consensus for forecasting assumptions made about the program performance, targets, and future demand including expected uptake in services and compliance with recommended treatment guidelines. When doing a forecast based on services data, a major assumption is that products are dispensed according to the dispensing protocols. If dispensing protocols are not being followed, consumption could be over- or underestimated.

2.3. Calculate forecasted consumption for each product. Document all sources and adjustments to data along with assumptions, and then estimate future consumption for each product for the determined period of time.

2.4. Compare and reconcile results of different forecasts. Compare final forecast quantities from each forecast and consider the implications of the different forecasts based on consumption, services, demographics and morbidity data sets for the program. This includes service capacity, storage and distribution capacity, funding availability, and any other issue that could affect demand, supply, and use of commodity. Finally, a final forecast for each product should be determined.

The final forecasts based on each of the types of data used would then be cross-checked against each other, with their differences investigated and the quality of the available data taken into account. This cross-checking serves as a validation of the final forecast.

3. SUPPLY PLANNING

The final output of the supply planning step is the supply plan which details the total estimated quantities and costs of the products required for the program, the planned quantities and shipment delivery schedule for the period of the quantification, and the comparison of funding available to the total cost of the commodities required.

For the supply planning step, data should be collected on total stock on hand in the program, quantities in orders, procurement and supplier lead times, supplier prices and shipping and handling costs, and funding available for procurements.

3.1 Organize and analyze data. As with the forecasting step, supply planning data also needs to be collected and analyzed. The data includes:

- Current stock on hand
- Quantities on order

- Procurement and supplier lead times
- Supplier prices, shipping and handling costs
- Funding available for procurement

This data will help estimate the quantities of commodities needed and the total cost of procurement.

3.2 Build and obtain consensus for supply planning assumptions. The assumptions needed to develop a supply plan include: timing of available and potential funds, amount of available and potential funds, lead times for each supplier, estimated arrival dates of supplies, and minimum and maximum stock levels for each level in the system.

Assumptions may also need to be made to account for data that is incomplete, unreliable, outdated or simply not available. For example, current stock on hand may only be available at the central level, and procurement lead times or timing of funding disbursements may not be known.

3.3 Estimate total commodity requirements. In addition to the forecasted quantities of commodities that will be dispensed to patients or used to provide a service, there is also a need to have enough products to fill the pipeline, for buffer and lead time stock. Supply planning needs to account for current stock on hand, as these will be subtracted from final quantities of commodities.

3.4 Develop supply plan. A supply plan needs to be developed that factors in defined assumptions as well as commodity requirements to ensure a continuous supply of products in the district.

3.5 Compare costs to available funding. Once the final quantity of products needed to fill the pipeline and ensure continuous supply have been calculated, an estimated cost to purchase and transport all those products must be calculated. If enough funds are not available, more resources have to be identified or the quantities of products will have to be reduced by adjusting the forecasted amounts.

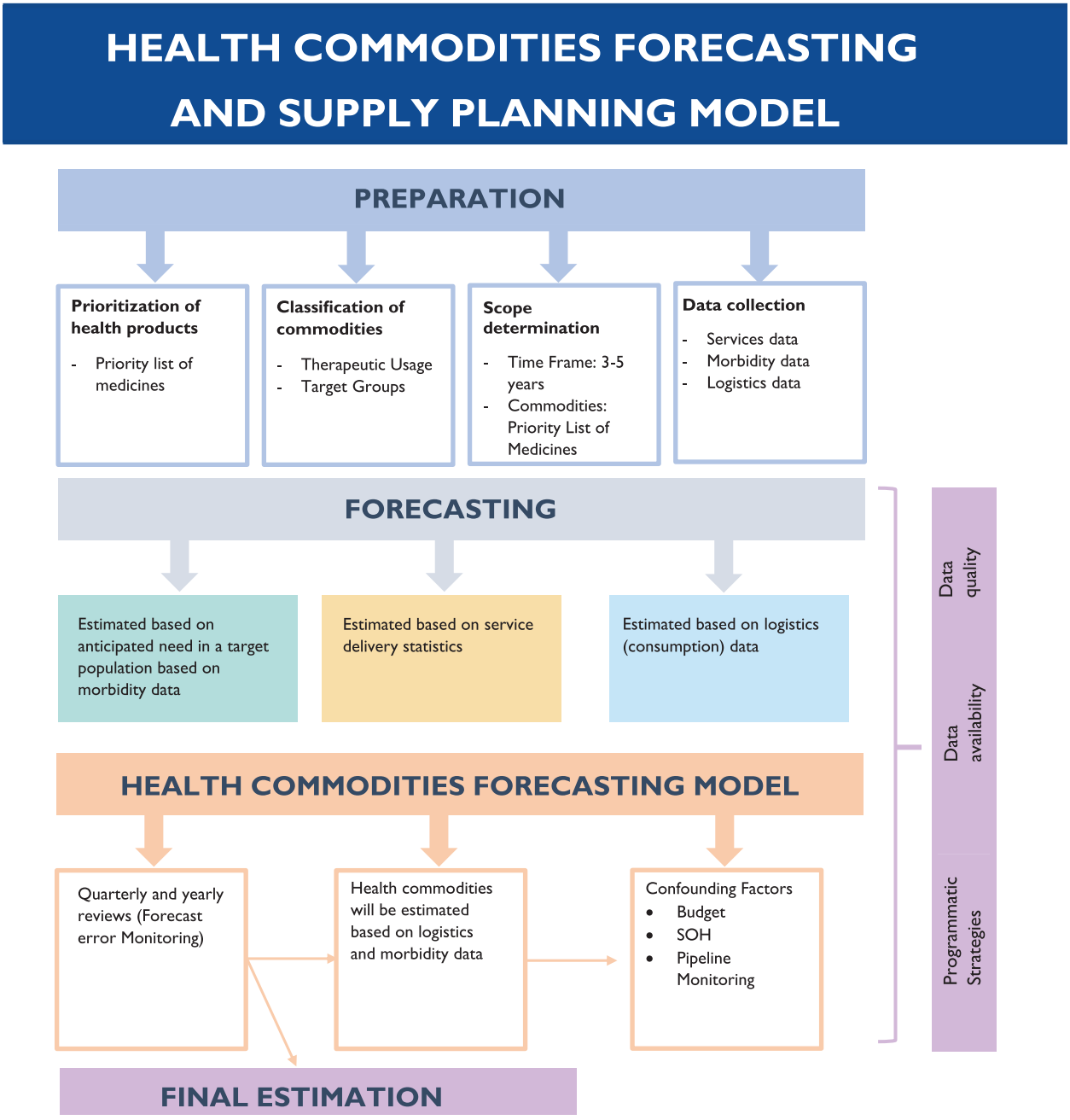
3.6 Institutionalize Mechanism for Forecasting of Health Commodities. For the forecasting and quantification to be properly ingrained into the system, it is important to establish a Technical Working Group (TWG) on the same model as constituted at the provincial level. The TWG will systematically determine district health commodity requirements, estimate their financial costs, and coordinate fulfillment of projected needs to support the continuous availability of commodities. It will also minimize duplication efforts and wastage of resources. The scope of TWG will be expanded to ensure a credible forecast of the health commodities to be consumed in the province, thereby streamlining the procurement planning process.

The TWG could broadly perform the following proposed f unctions:

- Review and finalize the forecasting and quantification data collection tool that captures the essential information needed.
- While using different data sources, gather key inputs and ensure data is sufficient and of high-quality.
- Define the scope, purpose and period of the forecast.
- Collect and review existing documents to define assumptions and adjustments based on recent demographic, logistics and morbidity data.
- Develop a district forecast for health commodities using the appropriate quantification methodology.
- Develop a supply plan based on the forecasting exercises.
- Review and adjust the supply plan regularly, based on uptake and consumption trends.
- Identify the funding needs and gaps for procuring the required commodities.

- Discuss data sources and data gaps to support regular forecasting and supply planning, as well as steps to address gaps.
- Coordinate with District Health and Population Management Team (DHPMT) for their inputs, if any, on forecasting and quantification of health commodities.

FORECASTING & SUPPLY PLANNING MODEL AT GLANCE



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