

Guidelines on Forecasting Consumption of Contraceptive Supplies

Introduction: The success of capacity-building efforts and institutionalization of local capacity in forecasting of contraceptive commodities will depend on the level of investment in the process and the commitment of local staff to make forecasting part of their job responsibilities.

The guidelines will help program managers, service providers, and technical experts conduct a forecast of the commodity needs for family planning programs or program/department offering family planning services. While consumption data is considered the gold standard for contraceptive forecasting, data are not always accurate, reliable, or readily available.

The final output of the forecasting step—the estimated quantity of each product needed to meet the expected demand for each method—is the starting point for the next step of the quantification: supply planning.

Types and Sources of Forecasting Data: Three types of data can be used to forecast the consumption of contraceptive supplies: consumption data, services data, and demographic data. Program targets—expressed as a projected number of people to be served or number of services to be provided—to forecast consumption of contraceptive supplies, can also be used.

I. Consumption Data are historical data on the actual quantities of products dispensed to users, or used to provide a specific service, during a specified period of time. These data are most reliable in mature, stable programs that have a full supply of products and a robust LMIS. Sources include — contraceptive LMIS

II. Services Data for family planning are historical data on the number and type of family planning visits recorded at SDPs. A visit is defined as a client visit for family planning services during which a specific method is dispensed to the client for the first time (new visit), or for resupply (revisit). Sources include – HMIS / facility-based, family planning daily activity registers.

III. Demographic Data include data on the total population, population growth rate, contraceptive use (CPR), and characteristics of the population of contraceptive users. Sources include – PDHS, Census Reports etc.

Forecasting Methodology:

I. Determine the Scope

This includes but not limited to selection of commodities, stakeholder identification and program policies, period of forecast.

II. Collect, Organize, and Analyze Data

Once the different types of data are collected, it needs to be organized by types.

Then, assess the quality of the data to determine if it should be used for forecasting. The most common data quality issues are inaccurate, incomplete, or outdated data. Where data quality is lacking or weak, you will need to use calculations and/or assumptions to account for the missing or unreliable data.

In general, to assess data quality, determine the —

- **Facility reporting rate:** How many facilities that should be reporting did report? The lower the reporting rate, the less reliable the data. Adjust the data to account for non-reporting facilities.
- **Stockouts:** If there have been stockouts, past consumption data will underestimate what consumption would have been if the product had been continuously available. Adjust the data to cover the stockout period(s).
- **Timeliness of data:** The older the data, the less representative and predictive of future consumption it will be. It is important to document the dates of the data sources used.
- **Any factor that may influence future demand:** How closely will historical data predict future need? Are there policy or programmatic changes anticipated that could affect the types and mix of methods that will be dispensed in the future? We need to make assumptions to estimate how expected changes will influence future demand for products.

III. Build Forecasting Assumptions

The forecasting assumptions should account for outdated, incomplete, or unreliable data; the impact of programmatic and environmental factors expected to influence the demand for Short Acting and Long Acting Methods during the forecast period; and the reliability of the supply chain to manage the contraceptives needed for each method. It is important to always document the forecasting assumptions to verify the forecasting methodology used, and to guide the steps in calculating the forecast quantities of the commodities needed.

IV. Calculate Forecasted Consumption for Each Product

After all the data has been collected, analyzed, and adjusted, and the forecasting assumptions have been agreed on, it is time to calculate the forecasted consumption for each product.

The type of data used for forecasting will determine how to calculate the forecasted consumption. If using historical consumption data, the forecasted quantity of each item will be based on past trends and assumptions about any changes in program plans that may affect demand or availability of products (e.g., introduction of new methods, substitution or discontinuation of existing products).

The result of a consumption-based forecast is expressed as the estimated quantity of each product that will be dispensed or used.

If historical services data or demographic data are used, then the forecasted number of visits, number of procedures to be performed, or number of users by method, should be estimated based on past trends and assumptions about program expansion plans and future service capacity. In this case, convert the forecasted number of visits, procedures, or users into the quantity of each product needed.

A. Consumption-based Forecast

To forecast consumption using historical consumption data, use data on the actual quantity of each product that was dispensed or was used to provide the method, over the past 24 months.

Organizing and analyzing the consumption data over time helps determine patterns and variability in consumption that can be used to plot trend lines. Based on historical consumption data, trends can be projected based on the past consumption of products to estimate the future consumption of products.

When using historical consumption data, we assume that there is a discernible pattern that will continue into the future. Extrapolation can then be used to forecast future demand based on past consumption trends.

We can use the past trend in consumption of each product to estimate future consumption, if we expect past trends to continue. This may be true for products that show a stable trend over time, as well as for products when consumption appears to be increasing or decreasing at a consistent rate, over time.

If demand has been relatively stable, we can use simple averages from historical data to project future values. If there is a relatively consistent increase or decrease in demand, we can use linear trend lines, extrapolated from the slope of historical data, to project future consumption.

However, if data show non-linear trends (in seasonal variations, for example), we will need to use more complicated statistical analysis. However, if we expect to introduce or scale-up new services or products in the future, then past consumption will not predict future use. We must then estimate consumption using the assumptions-building process to agree on the expected growth or shifts in consumption that will result from program changes.