Supply Chain Considerations for DMPA-SC Introduction: The Challenge of Matching Supply with Demand

For new products such as DMPA-SC, family planning programs risk overstocks and expiries if actual demand falls short of forecasts; conversely, shortages and stockouts could occur if demand far surpasses forecasts. Overstocks and expiries can lead decision makers to become wary of procuring the product in the future, whereas shortages and stockouts can reduce uptake, limit product expansion, and cause existing users to lose confidence in the system's ability to consistently provide the product. This brief provides an overview of key considerations for estimating commodity needs for new product introduction and integration.

A new contraceptive product, DMPA-SC (Depot medroxyprogesterone acetate sub-cutaneous), also known as Sayana® Press[*], is being introduced through family planning (FP) programs around the world. FP program managers face the challenging task of aligning supply with anticipated demand as they move from product introduction to subsequent integration. To estimate commodity needs, program managers and others must make assumptions about future use of DMPA-SC and the possible impact that its introduction will have on the use of other products (including other injectables), in the absence of country-specific, historical data on which to base these assumptions.

Quantification of Health Commodities: A Guide to Forecasting and Supply Planning for Procurement[1] offers guidance for quantification: the process of estimating the quantities of commodities needed to ensure uninterrupted supply for a health program. For DMPA-SC, JSI has developed supplemental guidance specific to the new product introduction context: *Quantification of Health Commodities: DMPA-SC Companion Guide*.[2]

National level quantification covering all demand across a category of commodities is useful for understanding the flow of commodities for the whole country and for guiding coordinated resource mobilization for commodities. In other words, **DMPA-SC should be included as part of routine quantification for all FP products**, not quantified for in a separate or parallel exercise.

For a new product such as DMPA-SC, the product introduction plan is a crucial input to any estimates of future consumption. **Countries should not undertake provider training, quantification, or procurement of DMPA-SC without a clearly-defined, realistic, funded, politically-supported introduction strategy in place**. The following key questions should be answered in the introduction plan and will inform key quantification assumptions:

- At what levels of the health system and by what service provider cadres will DMPA-SC be offered? Have injectables been offered at these levels or by these cadres previously?
- How many providers will be trained, when, and where?
- Are there proposed changes in dispensing protocols (e.g. to allow home or self-injection)?
- Will DMPA-SC be offered via the public, social marketing, and/or commercial sectors?
- Will DMPA-SC be offered alongside other injectables (or other methods)?

A country might agree on an introduction strategy for DMPA-SC and later realize – for instance in discussion with partners about funding or through a quantification exercise – that the strategy itself needs to be revised. The quantification would need to be revised to align with the new introduction plan.

FP commodity forecasts can be based on several types of data: services data; demographic data; consumption (logistics) data; or estimates of services capacity. All forecasts are informed by assumptions about future demand, program plans, and performance. **Preparation of more than one forecast allows quantification teams to compare and validate results and reach a consensus forecast** to use as an input to the supply planning step.

Quantification
Process of estimating the quantities and costs of the products required for a specific health program (or service), and determining when the products should be delivered to ensure an uninterrupted supply for the program

Forecasting
Process of estimating the expected consumption of commodities based on historical consumption, service statistics, morbidity and/or demographic data (or assumptions when data are unavailable), to calculate the quantities of commodities needed to meet demand during a particular time frame

Supply Planning
Details the quantities required to fill the supply pipeline, costs, lead times, and arrival dates of shipments to ensure optimal procurement and delivery schedules

National-level quantification is ideally undertaken as a consensus exercise involving key stakeholders with knowledge of relevant data sources and program plans.

[*] Sayana Press is a registered trademark of Pfizer Inc.

A **services capacity** forecast is an estimate of the quantities of product that service providers in the system could potentially dispense to clients, and may help the quantification team to determine an *upper bound* of potential commodity provision. PATH has summarized findings on how many DMPA-SC doses service providers administered in peak months[3] during pilot introduction.

DMPA-SC is a new type of 3-month injectable contraceptive, so it is important to critically evaluate how its introduction will affect the consumption of other 3-month injectables (DMPA-IM). **FP programs should forecast DMPA-IM and DMPA-SC consumption together as a proportion of projected 3-month injectable consumption,** reflecting shifts over time as DMPA-SC is introduced and integrated.

The graph to the right shows a hypothetical forecast, applying assumptions about DMPA-SC introduction over time and the corresponding proportion of total 3-month injectables dispensed that would be DMPA-SC vs. DMPA-IM. **Both products should be in adequate supply throughout the transition** to support demand creation, maintain product choice, buffer unexpected levels of substitution or user switching, and – as the basis for routine resupply decisions and future forecasts – ensure that data captured accurately reflect true demand.

How can existing evidence inform assumptions about DMPA-SC in the product mix? Most countries do not have historical logistics or services data for DMPA-SC, and the product is too new to appear in Demographic and Health Survey (DHS) data, but most countries already manage three-month injectables. Quantification teams can prepare forecasts for three-month injectables (based on available services, consumption, and/or demographic data) and develop assumptions about the proportion of projected consumption that will be DMPA-SC versus DMPA-IM. Broad-based data to inform product mix assumptions are scarce, but PATH[4] and DKT Nigeria[5] have published evidence that can serve as a reference point.

The final forecast informs the supply plan, which specifies the quantities, costs, and timing of the products needed to meet demand and ensure an uninterrupted supply. In addition to being grounded in realistic product introduction timelines, **country supply plans need to take into account country registration procedures and timeframes, funding availability, donor/procuring organization lead times, and DMPA-SC's 3-year shelf life** (vs 5 years for DMPA-IM).

3-month injectables forecast breakdown by product
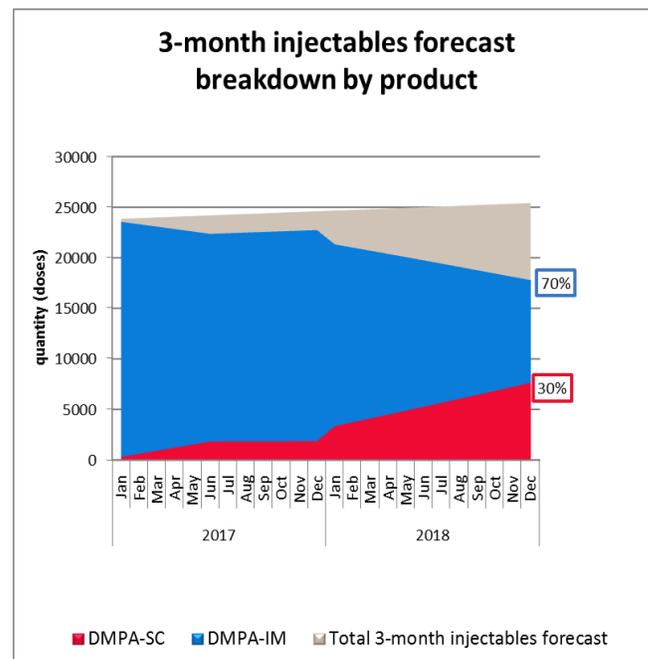
The quality of a quantification exercise and its outputs is highly dependent on the quality – timeliness, accuracy, and completeness – of the available data. **Forecasts and supply plans should be reassessed, reviewed, and updated periodically, especially in the uncertain context of new product introduction.**

FOR MORE INFORMATION – JSI has developed step-by-step guidance to support DMPA-SC quantification. If you are interested in using this guidance to support your program or country quantification, please contact fpaccessprogram@jsi.com. Country-level efforts to improve forecasting and supply planning for DMPA-SC help support coordination at the global level. The FP Access Program and the Coordinated Supply Planning group assist countries, donors, partners, and Pfizer to monitor and prioritize DMPA-SC orders. To provide data to this group or for more information, please contact Maggie_Murphy@jsi.com.

Resources
1 John Snow, Inc. 2017. *Quantification of Health Commodities: A Guide to Forecasting and Supply Planning for Procurement*. Arlington, Va.: John Snow, Inc.
2 John Snow, Inc. 2017. *Quantification of Health Commodities: DMPA-SC Companion Guide.* Arlington, Va. : John Snow, Inc.
3 PATH. *How to Introduce and Scale Up Sayana Press (DMPA-SC in Uniject): Practical Guidance from PATH Based on Lessons Learned During Pilot Introduction*. Seattle: PATH; 2017.
4 PATH. *Monitoring Sayana Press Introduction*, October 2016.
5 DKT. October, 2016. *Introducing the Next Generation Injectable in Nigeria*. A Program implemented by DKT Nigeria. Monitoring and evaluation conducted by the University of California, San Francisco in collaboration with Akena Associates Nigeria.

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