

Supply chain considerations for DMPA-SC introduction

Overview

The purpose of the health supply chain is to ensure products are available where and when they are needed. Supply chains are complex systems, and introduction of new products has implications for many of the functions in the logistics cycle (see graphic, page 2),¹ such as quantification and inventory strategy. Accounting for the supply chain early in the planning process will help to ensure a smooth introduction process and uninterrupted supply for countries integrating the new injectable subcutaneous DMPA^a (DMPA-SC) into the range of contraceptive options.

While still an area for learning, considerations for DMPA-SC are outlined in this brief and include strategies for estimating commodity needs with limited data; managing risk of supply imbalances for a three-year shelf life product; and determining implications of community-based distribution and self-injection.

Planning for and addressing supply chain challenges is part of achieving contraceptive security—ensuring clients can choose, obtain, and use DMPA-SC and other family planning methods.

About DMPA-SC

Administered through subcutaneous injection, DMPA-SC is a three-month progestin-only contraceptive that is a lower-dose formulation compared to intramuscular DMPA (DMPA-IM). DMPA-SC is packaged in the prefilled Uniject™ injection system,^b eliminating the need for a separate vial and syringe. Qualified purchasers including donors and ministries of health in [Family Planning 2020 countries](#) can buy DMPA-SC from Pfizer Inc. at a unit price of US\$0.85.^c

The most recent World Health Organization Model List of Essential Medicines (2019)² includes DMPA-SC. Currently, Pfizer is the only manufacturer of the product; others may emerge in the future. The Pfizer product is registered as Sayana® Press or Sayana®^d and comes in packs of 200 doses with a 36-month shelf life.

DMPA-SC introduction context

Expansion of DMPA-SC provision across sectors, channels, and cadres can increase access to family planning.³ Many countries are pursuing introduction of DMPA-SC through multiple sectors, such as public, nongovernmental, social marketing, and private/commercial channels. In addition to facility-based health care providers, community health workers (CHWs) can safely administer DMPA-SC. In many countries, private-sector pharmacies and/or drug shops can administer



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Supply chain recommendations for programs planning DMPA-SC introduction

- Develop consensus-based forecast assumptions, taking into account the realistic scope and timing for rollout.
- Program smaller, more frequent shipments initially.
- Routinely and jointly review and update forecasts and supply plans to integrate any new program or supply chain data.
- Consider ways to shorten the in-country pipeline.
- Plan for initial stocking of facilities with some buffer.
- Update logistics management information system records and reports to include DMPA-SC.
- Maintain resupply procedures based on stock on hand and actual consumption.

injectables. Finally, many countries are introducing DMPA-SC self-injection and designing programs to train clients.^{4,5}

All of these strategies and the timelines for rollout affect how, where, and when DMPA-SC units need to be made available.

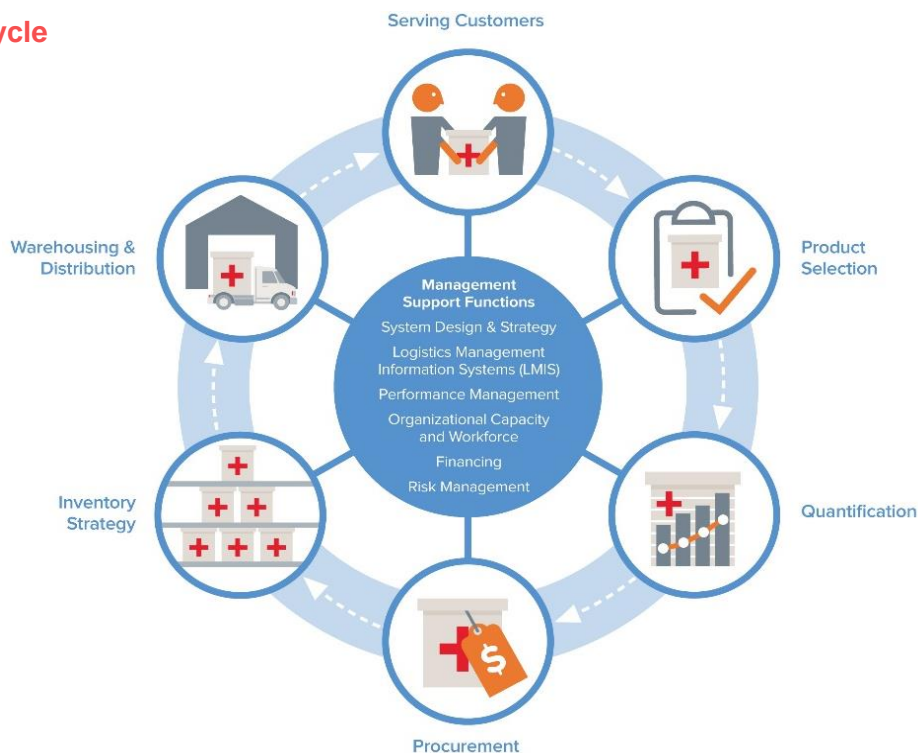
a. DMPA: depot medroxyprogesterone acetate, 104 mg medroxyprogesterone acetate/0.65 mL.

b. Uniject is a trademark of BD.

c. This pricing reflects a six-year agreement. During the six years (2017–2022), the price is guaranteed at US\$0.85. After the agreement, Pfizer Inc. is committed to ensuring the product continues to be available.

d. Sayana Press and Sayana are registered trademarks of Pfizer Inc. and/or its affiliates.

The logistics cycle



New product introduction may generate activities to update or refine many of these supply chain functions.

Source: John Snow, Inc. *The Supply Chain Manager's Handbook: A Practical Guide to the Management of Health Commodities*. Arlington, VA: John Snow, Inc.; 2017.

Supply chain considerations

Regardless of the service-delivery channel, basic supply chain best practices should be followed, such as collecting and reporting stock and consumption data and adhering to good storage practices. This brief provides an overview of supply chain considerations, organized by the functions in the logistics cycle (above). See the box on page 3 for supply chain considerations specific to self-injection programs.

Product selection

In many countries, the incremental addition of one product may not have a major effect on supply chain complexity, and stakeholders see value in adding a product with DMPA-SC's characteristics to the mix in order to expand contraceptive choice, access, and use.⁶ This brief presumes that a country has already made a deliberate decision to add DMPA-SC to the range of family planning options and that introduction and scale-up planning has begun.

Quantification

Quantification is a national-level function that includes forecasting and supply planning to ensure an uninterrupted supply of commodities.⁷ For well-established family planning methods, forecasts (estimates of future consumption) can be based on historical consumption data, services data, and/or data from such demographic surveys as Demographic and Health Surveys or Performance Monitoring for Action. When new products are introduced, no historical data are available.

Furthermore, DMPA-SC introduction plans, program expansion plans and timelines, geographic coverage, health system levels and cadres involved, training plans, dispensing protocols, and delivery strategies inform commodity needs, but can be challenging to translate into a forecast:

- DMPA-SC introduction is likely to affect use of other contraceptive methods, but the magnitude and timing of these effects are unknown and may vary depending on the country's introduction strategy.
- Provider training may proceed more quickly or more slowly than planned, affecting when product is needed.
- Little evidence is available to help program and supply managers estimate uptake once providers are able to offer the product, or estimate switching to DMPA-SC from DMPA-IM or other methods.

In light of these challenges, program managers must *make assumptions to estimate future use of DMPA-SC, and refine the assumptions as new data (e.g., actual dispensing) or information (e.g., numbers of providers trained) become available.*

The *Quantification of Health Commodities: DMPA-SC Companion Guide* includes recommendations on how to anchor DMPA-SC estimates in the overall three-month injectable forecast, and apply assumptions about (a) the impact of DMPA-SC introduction on injectables use and (b) product mix.⁸

The forecast should also integrate plans for DMPA-SC rollout as the geographies, sectors, channels, and proportion of facilities or providers that offer DMPA-SC start small and grow over time.

Supply plans need to anticipate procurement lead times. For example, if the product is not yet registered, regulatory waivers may be needed before the first shipment can be made. Customs clearance challenges should also be anticipated in advance. *Programming smaller, more frequent deliveries is one way to manage the uncertainty inherent in new product introduction.*

There is also a risk when programs align DMPA-SC projections with very ambitious program plans—this can lead to over-ordering of the product. Meanwhile, if programs incorrectly assume that most DMPA-SC uptake will replace DMPA-IM, this can lead to under-ordering of DMPA-IM. Basing forecasts on realistic, funded introduction and scale-up plans; carrying out regular (e.g., quarterly) quantification reviews and adjusting forecasts and supply plans; and routinely monitoring the pipeline can help maximize product availability and minimize risk of over- or under-ordering DMPA-SC and other products. *Program and supply chain managers should jointly review and update forecasts and supply plans to integrate any new data that become available, including updates on program progress or revised plans.*

Inventory strategy

After being manufactured, quality tested, packed, shipped to port, cleared, and transported to the first warehousing point, just 30 months (83 percent) of DMPA-SC's 36-month shelf life might remain. To stock sufficient product to ensure uninterrupted supply, and to buffer against disruptions, many country supply pipelines are 18 to 24 months long—or longer. A product might spend 12 months at the central warehouse while older stock is issued first, then 6 months at a subnational-level warehouse, meaning 18 months have already passed when it is issued to a health facility. To protect against expiry risk, *countries with very long pipelines should consider ways to move DMPA-SC and other products more quickly through the supply chain; for example, by streamlining procurement procedures and increasing delivery frequency, allowing them to lower the minimum and maximum levels.* This is especially important when clients are being given two to three units to take home for self-injection.

Warehousing and distribution

For new product introduction to succeed, the new product must be available at health facilities and other outlets, as relevant. Ideally, the arrival of appropriate quantities of new product at facilities and other outlets should coincide with provider training so that dispensing can take place as soon as providers are trained. To avoid disrupting the standard facility resupply process and schedule, *the program should plan how to supply facilities with enough initial stock for at least one full review period.* The initial stock quantity can relate to the historical level of injectables dispensed by the facility (assuming a proportion will be DMPA-SC) and/or the number of DMPA-SC clients the facility expects to serve in the coming period.

Logistics management information system: Routine logistics data and resupply procedures

In order for facilities to order the product and report on consumption, the *logistics management information system (LMIS) records and reports need to be updated to include DMPA-SC.* Until then, most LMIS records and reports have blank rows where new products can be written in. The introduction plan should include activities to agree on changes, update electronic systems, and print and disseminate updated paper forms. In addition, standard operating procedures may require review to refine or develop resupply rules for CHWs and specify how to determine initial supply quantities for facilities or

Supply chain considerations for DMPA-SC self-injection programs

- **Quantification:** Unless self-injection will be scaled up substantially within a very short period of time, the short-term impact on national consumption does not warrant special assumptions at the forecasting stage.
- **Inventory:** Since dispensing multiple units to a self-injection client at one time compresses annual dispensing for this client, facilities starting to offer self-injection should request extra stock (e.g., one month of extra stock) to buffer against spikes in dispensing to new self-injectors. The standard facility reorder calculation should be maintained.
- **Dispensing:** Providers should double-check that product dispensed for future self-injection has sufficient remaining shelf life.
- **Training units:** If possible, account for product issued for training as a negative adjustment, so these data are not captured as consumption data. Add expected units needed for training to the standard reorder calculation quantity.

channels that are beginning to offer DMPA-SC, including to self-injection clients (see “Warehousing and distribution” above).

Standard resupply procedures and dispensed-to-user data should be used to calculate DMPA-SC resupply quantities, even for facilities that might dispense multiple devices to self-injectors, because a maximum-minimum inventory control system and routine resupply should buffer against increasing consumption. Many countries' LMIS report and requisition forms allow facilities to request additional product if they anticipate extraordinary demand (e.g., due to demand generation activities or training of self-injectors).

Since many countries are introducing DMPA-SC across sectors and in some cases through new distribution channels, processes and tools are needed to capture consumption data from nontraditional outlets and those that have not previously offered injectables or been responsible for reporting. Such data can help stakeholders understand the dynamics of the new product and inform better needs estimates across sectors.

Most DMPA-SC provider and self-injection client trainings require several devices for demonstration or practice.⁹ To avoid counting these units as consumed, on most LMIS forms, product issued for training purposes can be marked in the space for a negative adjustment, meaning the product was removed from inventory but not dispensed to a client.

Other commodity-related considerations

Household-level storage

Units taken home by clients for future self-injection should be stored in a location out of the reach of children and animals, out of the sun, and away from extreme heat and cold.

Waste management

DMPA-SC generates 70 percent less waste by volume per dose than DMPA-IM (vial and syringe), reducing cost and simplifying waste handling.¹⁰ However, offering the product through new

channels such as CHWs or self-injection means this waste must be properly handled at community and household levels, not only at health facilities and pharmacies.

As guidance in this area evolves, waste containment and disposal through feasible, realistic options that maximize client convenience and support adherence should be part of design and planning of DMPA-SC programs. For example, providing a low-cost, puncture-proof, lidded container to self-injection clients can help ensure proper containment before disposal. Initial evidence from Uganda indicates that most self-injection clients were willing and able to return used units to health workers for safe disposal during resupply visits.¹¹

Where existing waste management systems are weak, guidance should be developed that considers broader health system capacity. See *Household waste disposal in DMPA-SC self-injection programs* for more detail.¹²

All waste management options (including containment, drop-off/collection, and final disposal by burning, burying, or latrine disposal) involve pros and cons from environmental, cost, compliance, and acceptability perspectives.

DMPA-SC disposal options should:

- Align with national health care waste management regulations and household-level guidance for self-administered medicines, where guidance exists.
- Minimize risk of needlestick injuries and infection transmission.
- Consider cost implications for both client and health system.
- Consider scalability of practice.
- Reflect growing evidence.
- Be explained to self-injection clients by providers and described in client information materials.

Supply chain costs

Country programs should incorporate into planning and resource mobilization the supply chain costs for ensuring products are available to clients at the last mile. For more information on supply chain costing, please refer to the policy brief, *Measuring supply chain costs: Collecting essential information for public health decisionmaking*.¹³

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