



Costs and cost-effectiveness of subcutaneous DMPA through different delivery channels:

What the evidence tells us

Family planning is one of the smartest investments a government can make. Ensuring access to contraception not only advances women's health and rights but also saves lives and money. When offered as part of a broad method mix, a novel injectable called subcutaneous DMPA (DMPA-SC or Sayana® Press*) is making it easier for women to access contraception through a variety of delivery channels, including self-injection.

Recent evidence from African countries indicates that DMPA-SC may help reduce service delivery costs by catalyzing community-based distribution and remote provision of injectable contraception. Moreover, self-injection of DMPA-SC—when compared with clinic administration of traditional injectables—is not just cost-effective but cost saving when accounting for costs to both women and health systems.

Advancing contraceptive choice, access, and use with DMPA-SC

DMPA-SC is an innovative product that is expanding women's access to contraception when provided as part of a country's family planning (FP) program. The DMPA-SC product available today (Sayana Press) combines the contraceptive drug and needle into a single unit that is small and easy to use. When compared with traditional intramuscular DMPA (DMPA-IM), DMPA-SC has a lower dose and shorter needle and is easier to administer. DMPA-SC is suitable for inclusion in all service delivery channels in both the public and private sectors and even enables women to self-inject with training.



Quick facts about DMPA-SC

- **99 percent effective at preventing unintended pregnancy** when given correctly and on time every three months. Does not protect from HIV and other sexually transmitted infections.
- **Lower dose of contraceptive hormone than intramuscular DMPA.**
- **Small and light, with a short needle.**
- **Easy to use**, including by community health workers and women themselves (self-injection).
- **Stable at room temperature (15°C–30°C).**
- **Three-year shelf life.**
- **Available in more than 30 FP2020 countries.***
- **Can be purchased at US\$0.85 per dose** by qualified buyers (including ministries of health in FP2020 countries).

*FP2020 aims to expand access to family planning information, services, and supplies to an additional 120 million women and girls in 69 of the world's poorest countries.

*DMPA stands for depot medroxyprogesterone acetate. Sayana Press is a registered trademark of Pfizer Inc.

New evidence shows that women who self-inject DMPA-SC continue using injectable contraception longer than those who receive injections from providers, which translates to fewer unintended pregnancies.^{1,2,3,4}

DMPA-SC is currently being piloted, introduced, or scaled up in more than 30 FP2020 countries. As of May 2017, it can be purchased at US\$0.85 per dose for qualified buyers—a price similar to DMPA-IM. Recent studies have examined the costs and cost-effectiveness of DMPA-SC when delivered through different channels, including self-injection.

Understanding costs and cost-effectiveness of DMPA-SC through new research**

Key finding: DMPA-SC may help reduce service delivery costs by catalyzing expansion of channels that are closer to women.

What the study looked at: PATH conducted costing studies in Burkina Faso, Senegal, and Uganda to estimate the costs of delivering DMPA-SC and DMPA-IM across different delivery approaches and channels. Costs included both direct medical/health systems costs—such as commodity costs and provider time—and nonmedical costs, such as costs women incur when traveling to, waiting for, and receiving services. It assumed the US\$0.85 commodity cost for DMPA-SC. The studies were not designed to compare estimated costs across countries.

What the study found:⁷

- ▶ **Total delivery costs were lowest for channels that are closer to women.** Specifically, they were lowest for community-based distribution followed closely by self-injection. Costs were highest for facility-based administration.
- ▶ **Costs for women, in terms of their time and travel to seek services, were lowest for self-injection.**
- ▶ **There was minimal difference in total costs between DMPA-SC and DMPA-IM when administered by the same type of health worker in the same setting.**

Total direct costs of DMPA-SC over four injections (in 2016 US dollars)		
UGANDA	DMPA-SC (community-based distribution)	\$7.69
	DMPA-IM (community-based distribution)	\$7.71
	Self-injection (DMPA-SC)	\$7.83
	DMPA-IM (facility-based delivery)	\$10.12
SENEGAL	Self-injection (DMPA-SC)	\$8.38
	DMPA-IM (facility-based delivery)	\$9.46
BURKINA FASO	DMPA-SC (facility-based delivery)	\$12.14
	DMPA-IM (facility-based delivery)	\$11.60



The business case for family planning

Investing in family planning is widely viewed as a “best buy” in global health and development.

- **Contraception saves lives:** If full provision of modern contraception to women who want to avoid pregnancy was combined with full care for all pregnant women and newborns, maternal deaths would drop from 308,000 to 84,000 per year, and newborn deaths would drop from 2.7 million to 538,000 per year.⁵
- **Contraception saves money:** For every dollar invested in family planning, up to US\$4.00 is saved in maternal and newborn health care.⁶

* 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 at an affordable price.

** Data presented reflect a lower-cost training approach to self-injection that was being used at the time of data analysis, namely, the replacement of a client instruction booklet with a less expensive one-page client instruction sheet.

What this means for policy and programming:

- ▶ Bringing injectable contraceptive service delivery closer to women may cost less than facility delivery of injectables and reduce barriers to access.
- ▶ The option to self-inject with DMPA-SC may further reduce financial and logistical barriers for women.
- ▶ When making decisions about injectable contraceptive programming, the benefits of DMPA-SC—such as ease of use, women's and provider preferences, and improved rates of contraceptive continuation with self-injection—can be emphasized given that delivery costs between DMPA-SC and DMPA-IM are similar for the same type of health worker in the same setting.

Key finding: Self-injection of DMPA-SC is cost saving when costs to women and health systems are considered**What the study looked at:**

PATH performed an evaluation to explore whether self-injected DMPA-SC is cost-effective when compared with DMPA-IM administered by health workers in Senegal and Uganda. Based on the experiences of women participating in self-injection research studies, modeling was applied to a hypothetical group of 1 million Ugandan and 100,000 Senegalese injectable contraception users to estimate the incremental costs per pregnancy averted and per disability-adjusted life year (DALY) averted over a one-year period. The number of modeled injectable users was based on the estimated number of injectable users in each country in 2017. Like the previous study, it assumed the US\$0.85 commodity cost for DMPA-SC and US\$0.83 for DMPA-IM

What the study found:^{8,9}

- ▶ **Self-injected DMPA-SC yields greater health impact.** In Uganda, self-injected DMPA-SC could prevent 11,101 additional unintended pregnancies and avert 1,683 DALYs compared with facility-administered DMPA-IM. In Senegal, self-injection could prevent 1,402 additional unintended pregnancies and avert 204 maternal DALYs.
- ▶ **Self-injected DMPA-SC is cost saving when considering costs to both women and health systems.** Self-injected DMPA-SC was shown to save up to \$1.1 million per year in Uganda, and \$350,000 in Senegal, when accounting for total costs to society, which include costs to both women and health systems.
- ▶ **Self-injected DMPA-SC can be cost-effective when considering costs to health systems only.** As noted above, the health impact of self-injected DMPA-SC is greater due to the increased continuation rates. While costs to health systems alone were found to be higher for self-injected DMPA-SC than for DMPA-IM—largely due to the costs of self-injection training during the first visit—simplifying the client training approach can reduce the costs of self-injected DMPA-SC to the point where it is cost-effective from a health systems perspective. For example, self-injection is cost-effective when using a lower-cost one-page visual aid for clients in place of a booklet and limiting the number of practice injections. New evidence shows little benefit from practice injections.¹⁰

What this means for policy and programming:

- ▶ Self-injection has benefits for women and for health systems. When including health system and women's time and travel costs, self-injected DMPA-SC costs less and leads to better health outcomes than facility-administered DMPA-IM.
- ▶ It is important to design a client training approach that is feasible, affordable, and effective. To assist program implementers with this endeavor, PATH has generated new evidence and recommendations through the [Self-Injection Best Practices Project in Uganda](#) (2016–2019).

Applying new evidence to DMPA-SC introduction and scale-up

A variety of factors must be evaluated when determining whether to introduce and scale up a next-generation contraceptive like DMPA-SC. Data on the costs and cost-effectiveness of DMPA-SC through different delivery channels provide decision-makers with compelling reasons to consider updating policies and programs to include DMPA-SC at all levels of care, including self-injection.

References

1. Burke HM, Chen M, Buluzi M, et al. Effect of self-administration versus provider-administered injection of subcutaneous depot medroxyprogesterone acetate on continuation rates in Malawi: a randomised controlled trial. *The Lancet Global Health*. 2018 May 8;6(5):e568–e578.
2. Kohn JE, Simons HR, Della Badia L, et al. Increased 1-year continuation of DMPA among women randomized to self-administration: results from a randomized controlled trial at Planned Parenthood. *Contraception*. 2018 Mar 1;97(3):198–204.
3. Cover J, Namagembe A, Tumusiime J, Nsangi D, Lim J, Nakiganda-Busiku D. Continuation of injectable contraception when self-injected versus administered by a facility-based health worker: a non-randomized, prospective cohort study in Uganda. *Contraception*. November 2018. doi:10.1016/j.contraception.2018.03.032.
4. Cover J. Continuation of self-injected DMPA-SC compared to DMPA-IM administered by health workers at health facilities in Senegal. Unpublished results. Cover J, Ba M, Drake JK, Ndiaye, MD. Continuation of self-injected versus provider-administered contraception in Senegal: a nonrandomized, prospective cohort study. *Contraception*. 2019 Feb. doi:10.1016/j.contraception.2018.11.001
5. Darroch JE, Audam S, Biddlecom A, et al. Adding it up: investing in contraception and maternal and newborn health, 2017. *Fact sheet*. New York: Guttmacher Institute; 2017.
6. Starbird E, Norton M, Marcus R. Investing in family planning: key to achieving the Sustainable Development Goals. *Global Health: Science and Practice*. 2016 Jun 20;4(2):191–210.
7. Di Giorgio L, Mvundura M, Tumusiime J, et al. Costs of administering injectable contraception through health workers and self-injection: evidence from Burkina Faso, Uganda, and Senegal. *Contraception*. 2018.
8. Di Giorgio L, Mvundura M, Tumusiime J, Morozoff C, Cover J, Drake JK. Is contraceptive self-injection cost-effective compared to contraceptive injections from facility-based health workers? Evidence from Uganda. *Contraception*. 2018.
9. Mvundura M, Di Giorgio L, Morozoff C, et al. Cost-effectiveness of self-injected DMPA-SC compared with health worker injected DMPA-IM in Senegal. *Contraception*. 2019. Under review.
10. PATH. *New self-injection program results and best practices from Uganda* [webinar]. Kampala: PATH; 2019.



To realize the full potential and benefits of DMPA-SC, a critical mass of countries must integrate the product through all levels of the health system.

Technical support and tools are available now to support FP2020 countries in scaling up DMPA-SC.

For more information, contact FPoptions@path.org.