Contraceptive Implants

Description

Introduced almost 30 years ago, contraceptive implants are one of the most effective family planning methods available when used in accordance with approved prescribing information. Implants are thin, flexible rods that are inserted just under the skin of a woman's upper arm and provide sustained contraception, ranging from three to five years.

The Population Council developed the first contraceptive implant—Norplant—which was approved in 1983 in Finland, the country of manufacture. Norplant consisted of six rods (2.4 mm x 34 mm), each containing 36 mg of levonorgestrel (a synthetic progestin similar to the natural female hormone progesterone). Production of Norplant was discontinued in 2008 because the new generation of products—the two-rod implants, Jadelle and Sino-implant (II), and 1-rod implants, Implanon and Nexplanon/Implanon NXT —are easier to insert and remove. Jadelle, which was approved by the USFDA in 1996, consists of two rods (2.5 mm x 43 mm), each containing 75 mg of levonorgestrel. In 1996, Sino-implant (II), a similar two-rod implant with the same amount of active ingredient as Jadelle, was introduced in China. This was followed by Implanon, which was first introduced in 1998 and was approved by USFDA in 2006. This single-rod contraceptive implant (2 mm x 40 mm) contains 68 mg etonogestrel (also a progestin).[1,2,3,4] A new one-rod implant, Nexplanon, has the same design as Implanon but is also radio-opaque, allowing x-ray detection if the rod is difficult to locate due to deep insertion. Nexplanon also has an improved trocar, the surgical instrument used to insert the rod.[5]

Implants provide long-lasting contraception by suppressing ovulation, impeding sperm transit by thickening the cervical mucus, and altering the endometrial structure.[6] The duration of contraceptive protection varies by brand: Jadelle is registered to provide contraception for five years, Sino-implant (II) for four years, and Implanon and Nexplanon for three years. Implant insertion and removal procedures are generally short, uncomplicated, and must be conducted by a well-trained health care provider. After removal, there is no delayed return to fertility for implant users compared to women who do not use contraception,[7] as the synthetic continuous-release hormones in implants have a short half-life. A new implant can be inserted at the time of removal if continued contraception is desired.

Contraceptive implants can be used by almost all women. Implants are best suited for women who desire a user-independent contraceptive method for birth spacing and limiting. Implants should not be inserted in women during the first six weeks after childbirth if they are exclusively or partially breastfeeding; in women with serious liver disease, problems with blood clots, or unusual vaginal bleeding; or in women who have or have had breast cancer. Contraceptive implants do not provide protection from sexually transmitted infections.[7]

Efficacy

Contraceptive implants are one of the most effective contraceptive methods available.

Annual pregnancy rates are less than 1 percent with all implants.[2,8,9] Continuation rates are often better for longer-acting methods, including implants, than those for shorter-acting methods.[10] No significant differences are found in contraceptive effectiveness or continuation rates among users of the various contraceptive implants.[2,8,9]

The major side effect associated with the use of contraceptive implants is a change in bleeding patterns (frequency, duration, and amount). Other potential side effects include weight gain, headaches, abdominal pain, acne, dizziness, nausea, breast tenderness, and mood changes. Rarely, infection at the site of the implant can occur.[7,11] Ovarian cysts may also occur, but usually do not require treatment.[3]

Registration status/suppliers

Product	Manufacturer	Presentation	Registration	WHO Prequalification
Jadelle	Bayer HealthCare	Disposable, sterile trocar	Registered in more than 47 countries. Review underway in ten additional countries.	Yes
Sino-implant (II)*	Shanghai Dahua Pharmaceuticals Co., Ltd.	Disposable, sterile trocar	Registered in 19 countries. Review underway in ten additional countries.	No
Implanon	Merck/MSD	Preloaded, disposable, sterile insertion device	Registered in approximately 80 countries.	Yes
Nexplanon	Merck/MSD	Preloaded, disposable, sterile insertion device	Registered in 21 countries. Nexplanon/ Implanon NXT will progressively replace Implanon in all countries in the next few years.	No

*In addition to the manufacturer's name for the product (Sino-implant (II)), the product is marketed under a variety of names by different distributors: as Zarin by Pharm Access Africa, Ltd.; as TRUST by DKT Ethiopia; and as Femplant by Marie Stopes International.

Current program/sector use

Because of implants' effectiveness and convenience, they are popular and in high demand when available in family planning programs.[12] However, the high upfront commodity cost can be a barrier to access, especially in resource-constrained settings. Still, because they are effective for a number of years (i.e., three to five years), are independent of users' compliance, and do not require frequent resupply, implants are more reliable and more cost-effective compared to other shorter-acting contraceptive methods.[13]

Although use of implants—as a percent of the method mix—remains low worldwide, demand often exceeds supply. In some settings, potential implant users go on waiting lists or choose another method. This suggests that the true demand for implants is unknown because there are not enough supplies and services available to meet demand.[12] Significant increases in procurement of contraceptive implants have been reported worldwide over the last several years.[14] Data gathered by the RH Interchange show that in 2005, approximately 132,000 implants were donated in sub-Saharan Africa. By 2011, donations rose to more than 2.5 million.[15]

Contraceptive implants are a practical method for use in all settings, as their insertion and removal require only a minor surgical procedure. An essential element of implant provision is ensuring excellent counseling before insertion so that women know what potential side effects to expect, how to reliably access removal services, and that implants do not protect against HIV or other STIs.[1]

It is also critical that policymakers, donors, and service-delivery groups work together to guarantee that women have access to same-day, affordable implant removal services. This includes ensuring adequate training of providers, providing sufficient commodities for removal, and establishing adequate referral systems—especially for women who receive implants through mobile services or community-based programs.[16]

Guidance for effective implant introduction and scale-up is available for providers and managers. An online toolkit on contraceptive implants provides up-to-date and accurate information on training, guidance on best practices, and resources and tools to help improve access to and quality of services: www.k4health.org/toolkits/implants.

Manufacturers

Jadelle is manufactured by Bayer HealthCare.

Sino-implant (II) is manufactured by Shanghai Dahua Pharmaceuticals Co., Ltd.

Implanon and Nexplanon are manufactured by Merck/MSD.

Public-sector price agreements

Jadelle: Public-sector price agreements are in place with organizations such as the US Agency for International Development (USAID), the United Nations Population Fund (UNFPA), and nongovernmental organizations (NGOs) offering family planning. In 2012, Bayer Pharma lowered the price of Jadelle to US$18/unit in developing countries.

Sino-implant (II): Public-sector price agreements are established with distribution partners. Sino-implant (II) is currently available in the public and NGO sectors at approximately US$8/unit.

Implanon: Public-sector price agreements have been made through contracts with individual Ministries of Health, USAID, UNFPA, and NGOs. The Implanon Access Initiative was launched in June 2011, and aims to enhance access through improved affordability and financing mechanisms in conjunction with the Pledge Guarantee for Health.

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