Essential Knowledge About Injectable Contraceptives

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Essential Knowledge About Injectables

Injectable contraceptives are a safe, highly effective, long-lasting, reversible method of contraception that can be used privately and does not require action at the time of sex. This review presents the latest biomedical, social science, and programmatic knowledge about injectable contraceptives as of July 2010. The information pertains to all types of progestin-only and combined injectables currently available, unless otherwise specified.

Method Characteristics

Composition

Women interested in using injectable contraceptives can choose between progestin-only injectables or combined injectables. (Combined injectables contain both progestin and estrogen.) Both types of injectables come in several formulations (see Table 1, below). Most family planning programs offer a progestin-only injectable, either DMPA (depot medroxyprogesterone acetate) or NET-EN (norethisterone enanthate). Many also offer a combined injectable, such as Cyclofem.

Most injectable formulations are given by injection into the muscle (intramuscular injection) either into the woman’s hip, upper arm, or buttocks, but a new formulation of DMPA was developed to be injected into the tissue just under the skin (subcutaneously). DMPA given subcutaneously is just as effective and has similar side effects as DMPA injected intramuscularly.30, 32

Table 1. Injectable Contraceptives: Formulations and Injection Schedules30, 32

<table>
<thead>
<tr>
<th>Common Trade Name</th>
<th>Formulations</th>
<th>Injection Type and Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progestin-Only Injectables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depo-Provera®, Megestron®, Contracep®, Depo-Prodasone®</td>
<td>Depot medroxyprogesterone acetate (DMPA) 150 mg</td>
<td>One intramuscular (IM) injection every three months</td>
</tr>
<tr>
<td>depo-SubQ provera 104® (DMPA-SC)</td>
<td>DMPA 104 mg</td>
<td>One subcutaneous injection every three months</td>
</tr>
<tr>
<td>Noristerat®, Norigest®, Doryxas®</td>
<td>Norethisterone enanthate (NET-EN) 200 mg</td>
<td>One IM injection every two months</td>
</tr>
<tr>
<td>Combined Injectables (progestin + estrogen)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyclofem®, Ciclofeminina®, Lunelle®</td>
<td>Medroxyprogesterone acetate 25 mg + Estradiol cypionate 5 mg (MAP/E2C)</td>
<td>One IM injection every month</td>
</tr>
<tr>
<td>Mesigyna®, Norigynon®</td>
<td>NET-EN 50 mg + Estradiol valerate 5 mg (NET-EN/E2V)</td>
<td>One IM injection every month</td>
</tr>
<tr>
<td>Deladroxate®, Perlutal®, Topasel®, Patecro®, Deproxone®, Nomagest®</td>
<td>Dihydroxyprogesterone acetophenide 150 mg + Estradiol enanthate 10 mg</td>
<td>One IM injection every month</td>
</tr>
<tr>
<td>Anafertin®, Yectames®</td>
<td>Dihydroxyprogesterone acetophenide 75 mg + Estradiol enanthate 5 mg</td>
<td>One IM injection every month</td>
</tr>
</tbody>
</table>
Injection Schedules

Women using progestin-only injectables must have an injection every three months for DMPA or every two months for NET-EN. Women using combined injectables must have an injection once a month (see Table 1, above).

It is important for women to try to be on time for the next injection because effectiveness depends on getting injections regularly. However, DMPA injections can be given as much as two weeks early and up to four weeks late, and NET-EN injections as much as two weeks early or two weeks late. Injections of combined injectables can be up to one week early or late.

This guidance from the World Health Organization (WHO) is based on an analysis of data from a study that followed 2,290 DMPA users for 24 months. The findings showed that of those women who returned two to four weeks late for their re-injection, only one pregnancy was recorded. Thus, the researchers concluded a grace period of up to four weeks for late DMPA injections does not increase risk of pregnancy.

Effectiveness

Injectables are highly effective at protecting against pregnancy. When injectables are used correctly (that is, women have injections on time), injectables are more effective than female sterilization. In the first year of use, on average, 3 among every 1,000 women using progestin-only injectables will become pregnant, and 5 among every 10,000 women using combined injectables.

As used commonly, 3 in every 100 women using injectables will become pregnant, making the method less effective as commonly used than IUDs, implants and sterilization, but more effective than oral contraceptives.

Return to Fertility

Injectables are a reversible method of contraception; fertility returns after a woman stops using injectables. On average, women who discontinue use of injectables take several months longer to conceive than women who have used other methods. Women who stop using DMPA become pregnant on average 10 months after their last injection. For NET-EN, women become pregnant on average six months after their last injection, and for combined injectables, five months after their last injection.

Mechanism of Action

Injectables work by slowly releasing hormones into the blood. This prevents pregnancy primarily by preventing ovulation. Injectables also prevent pregnancy by thickening the cervical mucus, which blocks sperm from meeting the egg thereby preventing fertilization.

Side Effects

Bleeding

Like other hormonal contraceptive methods, users of injectable contraceptives are likely to experience bleeding changes. These bleeding changes are not harmful. Most women who use progestin-only injectables (DMPA or NET-EN) have frequent or irregular bleeding during the first
three months of use and then little or no monthly bleeding at one year of use. Amenorrhea (no monthly bleeding) becomes more common the longer a woman uses DMPA. About 12% of women experience amenorrhea after three months of use, 25% after six months of use, 37% after nine months of use, and 46% after one year of use. Many women using progestin-only injectables experience amenorrhea because the lining of the uterus does not thicken, ovulation usually does not occur, and so there is no (or less) menstrual bleeding. NET-EN causes similar changes to a woman’s bleeding patterns, but to a lesser degree.

Combined injectables are likely to change bleeding patterns unpredictably during the first three months of use. Typically women using combined injectables report lighter monthly bleeding, fewer days of bleeding, or irregular or infrequent bleeding. Compared with progestin-only injectables, combined injectables disturb vaginal bleeding patterns less. Irregular, frequent or prolonged bleeding usually occurs less after three months of use and most women have regular patterns (around 28 days from the start of a monthly bleeding to the next) after one year of use.

Thorough counseling about bleeding changes is critical because changes in menstrual bleeding patterns are the most commonly reported side effect among injectable users and a common reason given for the discontinuation of injectables use. (See Counseling and Informed Choice, p. 9.)

**Bone Density**

Progestin-only injectables, particularly DMPA injectables, are associated with a decrease in bone density that is generally temporary and reversible. The amount of bone loss is somewhere between 5% to 7% in the hip and spine. However, when women of reproductive age stop using DMPA, they regain their bone mineral density over a short time period. Among adults who stop using DMPA, after two to three years their bone density appears to be similar to that of women who have not used DMPA.

Two groups of women who are using progestin-only injectables may need special attention: teenagers and women who enter menopause while using injectables. Teenagers are still making bone in a way that adult women do not. Therefore, it is not clear whether the loss of bone density during use of progestin-only injectables among teenagers prevents them from reaching their potential peak bone mass. If there is a negative effect, this may lead to weaker bones and an increased risk of fracture later in life. A recent study reports that bone mineral density loss among female adolescents who use DMPA is substantially or fully reversible. Therefore, the chance is small that the loss of bone density during use of DMPA will increase the risk of fracture later in life.

For older women who reach menopause while still using DMPA, there is concern that they may not have the opportunity to regain their bone mineral density before entering the period of bone loss normally associated with the postmenopausal period.

In light of this issue, WHO reviewed the evidence and recommends:

- For women aged 18 to 45, there should be no restriction on the use of DMPA (and other progestin-only injectables), including no restrictions on duration of use if otherwise eligible to use the method (Medical Eligibility Criteria category 1; use the method in any circumstance).
• For women under the age of 18 or over 45, WHO concludes the advantages of using DMPA (and other progestin-only injectables) generally outweigh the theoretical concerns about bone fracture risk for these women (category 2; generally use the method). WHO advises that these women and their health care providers should consider the overall risks and benefits for continuing use of the method over time because data are still insufficient to determine fracture risk with long-term use of the method among these age groups.\(^7\)\(^1\), \(^7\)\(^5\)

**Weight Gain**

Both progestin-only and combined injectables are associated with weight gain. Women gain an average of 1-2 kg/year when using DMPA. Some of the increase in weight may be due to the usual gain in weight as people age. Not all women who use injectables gain weight; some have no significant change in weight and some report weight loss during use. Asian women in particular do not tend to gain weight when using DMPA.\(^3\), \(^2\)\(^0\), \(^2\)\(^2\), \(^7\)\(^6\)

Evidence suggests that adolescents using injectables gain more weight than adolescents using oral contraceptives and those not using hormonal contraception.\(^4\) Furthermore, adolescent DMPA users who are obese may gain more weight than adolescent DMPA users of normal weight. This observation was not seen in adult DMPA users.\(^1\)\(^2\)

**Other Side Effects**

Some women using progestin-only injectables have reported mood changes, such as depression, and less sex drive, but the majority do not. Other side effects reported among users of either progestin-only or combined injectables include headaches and dizziness. Abdominal bloating and discomfort have been reported by users of progestin-only injectables and breast tenderness has been reported by users of combined injectables.\(^7\), \(^1\)\(^4\), \(^2\)\(^9\), \(^3\)\(^1\), \(^6\)\(^7\) There is no sufficient evidence that any of these side effects are method-related, and thus, they may be due to other factors. There is no evidence supporting the notion that use of injectables changes a women's sexual behavior.\(^3\)\(^2\), \(^7\)\(^6\)

**Non-Contraceptive Health Benefits**

**Progestin-Only Injectables**

In addition to protecting against pregnancy, DMPA also helps protect against cancer of the lining of the uterus (endometrial cancer) and uterine fibroids. DMPA use may also help protect against pelvic inflammatory disease and iron-deficiency anemia.\(^1\), \(^2\)\(^9\), \(^6\)\(^6\) NET-EN also protects against iron-deficiency anemia. Additionally, DMPA use is known to reduce sickle cell crises among women with sickle cell anemia, lessen symptoms of endometriosis (pelvic pain and irregular bleeding), and decrease the frequency of grand mal seizures.\(^2\)\(^0\), \(^2\)\(^9\) NET-EN may offer many of the same health benefits as DMPA.

**Combined Injectables**

Long-term research studies on combined injectables are limited, but researchers expect that their health benefits will be similar to those of combined oral contraceptives (COCs). Thus, it is expected that combined injectables will protect against endometrial cancer, ovarian cancer, and pelvic inflammatory disease. It is also expected that combined injectables may protect against ovarian cysts and iron-deficiency anemia and will reduce the following: menstrual cramps,
menstrual bleeding problems, ovulation pain, excess hair on face or body, symptoms of polycystic ovarian syndrome, and symptoms of endometriosis. 29, 76

Health Risks

There are no known health risks to using progestin-only injectables. Long-term research studies on combined injectables are limited, but researchers expect that their health risks are similar to those of COCs.

COC use is associated with a very rare risk of blood clot in deep veins of legs or lungs (deep vein thrombosis or pulmonary embolism) and an extremely rare risk of stroke and heart attack. A key difference between combined injectables and COCs is that combined injectables do not pass through the liver first because they are not taken by mouth like COCs. Short-term studies have shown that combined injectables have less effect than COCs on blood pressure, blood clotting, the breakdown of fatty substances (lipid metabolism), and liver function. Long-term studies are underway. 9, 60, 76

STI-Related Health Risks

STIs and Injectables

Injectables do not protect against sexually transmitted infections (STIs), including HIV. Users of injectables who are at risk of STIs should use condoms along with the injectables to prevent STI transmission. Some research indicates a possible increased risk of Chlamydia infection among users of DMPA. The reason for this increase in risk is not clear. 20, 37, 76 Research does not suggest DMPA use increases risk of gonorrhea. 20, 37

HIV/AIDS and Injectables

Research indicates that hormonal methods of contraception, including injectables, do not increase the risk of becoming infected with HIV for women in the general population. 37, 47

Progestin-only injectables are safe and effective for women who have HIV, including those who have AIDS and those taking antiretroviral (ARV) medications. 32, 47, 62, 75, 76

Women who are infected with HIV, have AIDS, or are on ARV therapy can safely use combined injectables. However, some ARV medications may reduce the effectiveness of combined-hormonal contraceptives. It is known that some classes of ARVs, including ritonavir-boosted protease inhibitors, speed up processing of hormonal contraceptives in the liver. 15 This could potentially lower hormone levels in the blood making the contraceptive less effective. Thus, the updated WHO guidance from the April 2008 Expert Working Group meeting advises that women with AIDS who are treated with ritonavir-boosted protease inhibitors generally should not use combined hormonal methods including combined injectables (Medical Eligibility Criteria category 3). These women can use progestin-only injectables, implants, and other methods safely and effectively. Women taking only other classes of ARVs can use any hormonal method safely and effectively. 75

Additionally, it has been suggested that women using ARVs should be especially urged to return on time for re-injections. However, women who use ARVs and return late but are within two
weeks (if using NET-EN) or 4 weeks (if using DMPA) of their re-injection date should not be denied an injection.\textsuperscript{72, 75}

Research findings have been mixed on whether hormonal contraceptives, including injectables, speed up HIV disease progression.\textsuperscript{47, 50, 57} Although more research is needed, at this point there has been no change in the guidance that women with HIV can safely use hormonal methods. Furthermore, preliminary results from a multicenter study in Kenya, Thailand, and Zimbabwe indicate there is no reason to advise women with HIV infection to avoid use of hormonal contraception. This study is evaluating the impact of different contraceptive methods on the clinical course of HIV infection to determine disease progression, the incidence of opportunistic infections, and changes in CD4+ cell count and viral load. Early results from the study do not suggest that there are large differences in disease progression according to type of contraceptive method used.\textsuperscript{57} Another recent analysis on a group of women in Uganda also concluded no increase in progression of HIV among hormonal contraceptive users, including women using injectables.\textsuperscript{44}

It is also not known whether women are more likely to transmit HIV if they are using hormonal contraception. Women with HIV should continue using condoms even if they are also using injectable contraception.\textsuperscript{11, 47, 50, 57}

\textbf{Client Knowledge and Attitudes}

\textbf{Knowledge About and Use of Injectables}

Injectables are currently the fourth most popular contraceptive method worldwide. In sub-Saharan Africa, injectables are the most popular method; among women using modern methods, 38% use injectables.\textsuperscript{32} Levels of use, however, vary widely within regions. In some countries within sub-Saharan Africa, Asia, and Latin America and the Caribbean, over 40% of married contraceptive users rely on injectables, while less than 5% use injectables in other countries.\textsuperscript{32} Variations within regions can be attributed to a variety of factors, including access to injectables, norms related to contraceptive use, government policies, women’s tolerance for side effects, and communication about injectables.\textsuperscript{32} According to recent Demographic and Health Surveys, most women throughout sub-Saharan Africa, the Middle East and North Africa, Asia, and Latin America and the Caribbean have heard of injectable contraception.\textsuperscript{32}

\textbf{Satisfaction with Injectables}

Injectables are a popular choice among women because they are highly effective, long-acting, reversible, and private.\textsuperscript{32}

However, many women do not choose injectables or discontinue use mainly due to side effects—particularly bleeding changes and weight gain—or because they have trouble returning for injections.\textsuperscript{32, 33, 61} In a large multinational WHO trial, on average half of the women stopped using DMPA and NET-EN within 12 months.\textsuperscript{65} In the United States, more women discontinue use of injectables within 12 months than do those using oral contraceptives and the copper IUD.\textsuperscript{58} Discontinuation rates for combined injectables are lower than those for progestin-only injectables primarily because irregular bleeding patterns are less common with combined injectable use, and they tend to decrease with length of use.\textsuperscript{61}
Counseling and Informed Choice

All individuals and couples have the basic human right to decide freely and responsibly the number and spacing of their children and to have the information, education, and means to do so. Under the Cairo Programme of Action, 180 governments have committed to "...provide universal access to a full range of safe and reliable family-planning methods..." (para 7.16) and to "...conform to ethical and professional standards in the delivery of family planning and related reproductive health services aimed at ensuring responsible, voluntary and informed consent..." (para 7.17) (United Nations Department for Economic and Social Information and Policy Analysis, 1994).

Greater contraceptive choice has been shown to improve uptake and use of all methods. Therefore, it is important that women have access to an array of methods, including injectable contraceptives.

Good counseling, especially about changes in monthly bleeding and other side effects, helps women decide whether injectable contraception will suit them and it helps women continue using injectables. Simply encouraging women to come in for a visit if they are having a problem with injectables can also improve continuation rates.

A 2006 systematic review on improving adherence to and acceptability of hormonal methods of contraception suggests that intensive counseling interventions with multiple contacts may be needed to improve contraceptive use.

Training Providers of Injectables

As demand for injectables increases, programs need more health care workers who can provide injectables to expand access to the method. With training, any health care worker can give contraceptive injections safely. Such providers may include pharmacists, auxiliary nurses, midwives, medical assistants, and community providers.

Comprehensive training to provide injectables may be needed if a program is adding injectables as a new method or if a program already offers injectables but is training new health care workers to provide them. Such training may include:

- Characteristics of injectables and the importance of returning on time for the next injection
- Giving safe injections
- Counseling clients, with an emphasis on bleeding changes
- Screening clients using the WHO Medical Eligibility Criteria
- Correcting misperceptions
- Conducting return visits
- Managing side effects
Focused training can be used to address a specific component of service delivery that needs strengthening, such as counseling. Refresher training can help providers maintain safe injection practices and maintain good-quality care.

Competency-based training—training that develops skills, knowledge, and attitudes—has proved more effective than conventional training approaches. With this approach, training continues until each trainee is competent to provide injectables, using techniques such as role playing, discussion, use of job aids, and simulation.\(^{32}\)

## Service Delivery

### Who Can Provide Injectables

In addition to physicians and nurses, many other types of health care providers can give contraceptive injections if appropriately trained. These providers include pharmacists, auxiliary nurses, midwives, medical assistants, community health workers, and others who have been specifically trained to provide family planning, as well as those who have general medical education.\(^{53, 74}\) In an effort to meet increased demand for injectable contraceptives and unmet family planning needs in underserved populations, more countries and programs are allowing community health workers to provide injectable contraceptives outside of clinic settings.\(^{17, 74}\) For example, the Nakasongola project in Uganda, the Matlab project in Bangladesh, and the APROFAM project in Guatemala have implemented initiatives to provide DMPA through community-based distribution by training community health workers to safely provide DMPA injections.\(^{17}\)

Service delivery guidelines in some countries restrict who can give injections. Thus, in some cases allowing certain groups of providers to give injectables may require changes in national policy.\(^{32}\)

### Who Can Use Injectables

Almost all women generally can use injectable contraceptives safely and effectively, including, but not limited to, women who:\(^{75}\)

- Are of any age (including adolescents and women over 40 years of age)
- Are not married
- Have or have not had children
- Are postpartum (at least 21 days postpartum for combined injectables)
- Are breastfeeding (progestin-only injectables can be used as soon as six weeks after childbirth and combined injectables can be used starting six months after childbirth)
- Have just had an abortion, miscarriage, or ectopic pregnancy
- Are obese (body mass index of 30 kg/m\(^2\) or more)
• Smoke cigarettes (combined injectable use is not recommended (category 3) if the woman is 35 years of age or older and smokes 15 cigarettes or more each day)

• Are at risk of sexually transmitted infections, including HIV

• Have HIV or AIDS

• Have HIV or AIDS and are using ARVs (combined injectable use is not recommended if using ritonavir-boosted protease inhibitors (category 3))

For more details about who can use injectables and who should not use them, please consult the most up-to-date version of the WHO Medical Eligibility Criteria.

Availability and Access

The rapid growth in use of injectable contraceptives is largely explained by greater access to injectables.33 A common reason for discontinuation of injectables, however, is a lack of access. Many women are unable to return to the clinic or pharmacy as needed for another injection and some clinics have drastic shortages and are unable to give women their injection when they return.61

To improve access to contraceptive injectables, program managers can make sure women get services easily (for example, services are within walking distance, women can get services without a long wait), ensure that services are offered in rural areas through community programs, make injectables available in a variety of clinical settings (e.g., hospitals, family planning clinics, maternity clinics, pharmacies), and guarantee that the location of service outlets and their hours are well known to women and their partners. See the Checklist for Improving Access to Injectables for additional details on how program managers can remove barriers and improve access to injectables.32 Additionally, community health workers can safely and effectively provide injectable contraceptives and in doing so can greatly expand availability and access to injectable contraceptives (see Modality of Provision below).17, 74

To keep injectables available, programs need to maintain adequate supplies. “Stockouts” of injectables are a common problem, however. Better forecasting has enabled some programs to anticipate increases in demand and place timely orders to manufacturers, donors, or procurement agents. To respond quickly to unexpected demand, emergency shipments are available from the United Nations Population Fund (UNFPA) and from USAID for USAID-funded programs.48

Modality of Provision

Injectable contraceptives can be provided safely and effectively both in the clinic and in the community.32, 53, 74 Although injectable contraceptives are usually provided in clinics, community-based distribution (CBD) of injectables can also be safe and effective. Community-based distribution of contraception has the potential to increase family planning access and convenience, particularly in countries with large rural populations, low contraceptive prevalence, high unmet need for contraception, and critical shortages of trained clinic personnel.18

Community provision has significantly increased use of injectables. In the Navrongo Initiative, for example, contraceptive prevalence rose from 3.4% to 8.2% between 1993 and 1999, when 92% of contraceptive users were using injectables.13 In Bangladesh, adding injectables to the method
mix in CBD programs resulted in more than doubling the contraceptive prevalence rate in some districts; contraceptive use increased from 21% to 47% in the Abhoynagar subdistrict and from 11% to 41% in the Sirajganj subdistrict. Furthermore, the use of injectables increased from 0.1% to 25% over an eight-year period. Several projects involving community provision have found that many women will choose injectables as their first modern method of contraception.

Community-based programs can serve both urban and rural areas, giving women the choice of injectable contraceptives in parts of countries where clinics are hard to reach. Community programs can offer injectables from mobile clinics, village clinics, periodic temporary outreach clinics, or at the homes of clients or community health workers. Injectable services can also be added to community provision of oral contraceptives and condoms, and offered along with immunizations, other maternal and child health services, and some curative services.

**Initiating Injectables**

Many women can have their first injection immediately. A woman does not need to wait until she is menstruating to initiate injectables. She can start using injectables any day of the menstrual cycle. If she is starting within seven days after the start of her menstrual cycle or switching from another hormonal method, she does not need to use a backup method. If it is more than seven days after the start of her menstrual cycle, she can be given an injection as long as it is reasonably certain she is not pregnant. (To be reasonably certain she is not pregnant, use the Pregnancy Checklist.) In this case, she will need to abstain from sex or use a backup method for the first seven days after the injection. If a woman is switching from another injectable, she should have the new injectable given when the repeat injection would have been given; no additional backup method is needed. If pregnancy cannot be ruled out with the Pregnancy Checklist, the client must use a pregnancy test or wait until her next menstrual period to start injectables.

Also, a woman can initiate injectables after an abortion or postpartum. A woman can have her first injection immediately postabortion and no additional backup method is needed. If a woman is breastfeeding, she can begin progestin-only injectables immediately and does not need a backup method if the injection is given within three weeks after delivery. For combined injectables, a woman can have her first injection anytime after she is 21 or more days postpartum and it is reasonably certain she is not pregnant. In this case, she will need to abstain from sex or use a backup method for the first seven days after the injection.

If the woman is fully or nearly fully breastfeeding and her monthly bleeding has not returned, she can be given a progestin-only injection any time between six weeks and six months after giving birth and does not need to use a backup method. For combined injectables, she can be given her first injection any time after six months postpartum if it is reasonably certain she is not pregnant; abstinence from sex or a backup method will be needed for the first seven days after the injection.

If the woman is fully or nearly fully breastfeeding, her monthly bleeding has returned, and she is more than six weeks postpartum (or six months postpartum for combined injectables), pregnancy should be ruled out prior to giving the first injection. Also, she will need to abstain from sex or use a backup method for the first seven days after the injection if it has been more than seven days since her last menstrual bleeding started. (For more information on when to start injectables and a checklist to help assess whether it is reasonably certain a woman is not pregnant, see Family Planning: A Global Handbook for Providers.)
Follow-Up Visits

Injectable users need to return for follow-up for their next scheduled injection: in three months for DMPA, two months for NET-EN, or one month for combined injectables. Women should be counseled that effectiveness of their method depends on having their injections on time and so they should return on time. However, they can come up to two weeks early or four weeks late and still have their injection if using DMPA, up to two weeks early or late if using NET-EN, and up to one week early or late if using combined injectables. Women should return no matter how late they are for their next injection, because they still may be able to receive their injection.\textsuperscript{69, 72}

In addition to planning a follow-up visit for a client’s next injection, women should be encouraged to come back any time they have problems or questions, experience a major change in health, or think they might be pregnant.\textsuperscript{33, 76}

Medical Barriers

Medical barriers are policies or practices derived at least partly from a medical rationale that result in scientifically unjustifiable impediment to, or denial of, contraception. They are a significant problem impeding wider access to modern contraception, including injectables.\textsuperscript{52}

Contraceptive provision in many settings continues to be based on outdated medical information, unproven theoretical concerns, and provider biases. Studies have found that in some developing countries 25\% to 50\% of women seeking contraceptives are refused services until they are menstruating.\textsuperscript{5} Additionally, many women who request a contraceptive method, such as injectables, are denied their choice based on eligibility criteria that are neither scientifically justified nor consistent with national guidelines. These medically unjustified criteria include marriage and spousal consent requirements, minimum or maximum age and parity restrictions, menstruation requirement, or norms that discourage uptake by requiring too many routine follow-up visits.\textsuperscript{52, 54, 63}

Checklists are one important tool for health care workers at various levels to apply the latest WHO medical eligibility criteria and guidelines for contraceptive use, including injectables. The \textit{Pregnancy Checklist} and \textit{DMPA/NET-EN Checklist} from FHI can be used by providers at all levels, including community agents and other para-professionals. Based on the WHO medical eligibility criteria, the \textit{DMPA/NET-EN Checklist} includes simple questions to help providers identify health conditions that might preclude a woman from using progestin-only injectables.\textsuperscript{5}

National polices can also be a barrier to injectables. Service delivery guidelines in some countries restrict who can give injections, limiting provision to doctors and nurses. Thus, it is important that countries modify their service delivery guidelines to allow a wide range of health care providers and community-based distributors to provide injectables.\textsuperscript{32, 49}

Provider Perspectives

Many misconceptions exist about injectable contraceptives, including misconceptions about their mechanism of action, side effects and eligibility criteria (for example, incorrectly believing that injectables cause abortion, infertility, cancer or change in sexual behavior and desire).\textsuperscript{28, 76}

Addressing providers’ fears, myths, and misconceptions requires multiple and repeated interventions.\textsuperscript{47} Passive dissemination of scientific evidence and new guidelines often has little or
no effect on providers' practices. Effective approaches that facilitate the application of research findings include educational outreach, interactive workshops, supportive supervision, on-the-job reminders, the engagement of opinion leaders, and the involvement of local stakeholders.21

Cost Considerations

To keep costs down programs can buy supplies in bulk, set up services in existing buildings, and share facilities with other health services. Programs that buy their own commodities can get low prices by asking for competitive bids from some of the more than two dozen manufacturers of injectables. To ensure the quality of supplies, programs should ask for bids only from manufacturers that have been assessed for quality. Programs can also work with UNFPA, which helps countries procure injectables and other contraceptives at low prices. Also, a number of procurement agents consolidate orders from several clients to qualify for volume discounts from manufacturers, and they ensure the quality of the products that they order.32

Safe Injection and Waste Disposal

Giving injections safely and disposing of waste appropriately are crucial for safely providing injectable contraceptives. Applying safe injection technique and the universal precautions, including disposing of used syringes and needles properly, helps prevent the spread of infection form clients to other clients, health care providers, and the community.32

Safety guidelines for contraceptive injections are the same guidelines that apply to all medical injections. A safe injection is defined by the WHO as one that does not harm the recipient, does not expose the provider to any unavoidable risk, and does not result in waste that is dangerous to people. Disposable auto-disable (AD) syringes are preferred over sterilizing and reusing injection equipment. AD syringes cannot be reused because they inactivate after a single use.32

Universal precautions prevent infection transmission. Universal precautions for infection control and best practices for injections are a simple set of practices designed to protect health care workers and their clients from infection in health care settings. Under the universal precautions principle, health care workers assume that all blood and body fluids are infectious, regardless of actual infectiousness.32, 59, 73

Rules for injections include:

- Prepare each injection in a clean designated area where contamination from blood or body fluid is unlikely.
- Wash hands with soap and water before and after giving an injection, if possible. Gloves are not needed unless there is a chance of direct contact with blood and other body fluids.
- Use a sterile syringe and needle for each injection. Use an AD syringe, if possible. If only sterilizable equipment is available, sterilize according to WHO guidelines.
- Discard used disposable needles and syringes in sharps containers immediately after use. Do not recap used needles.
- Safely dispose of sharps waste according to local or regional environmental regulations27, 68, 73
To ensure safe waste disposal, programs offering injectable contraceptives must have a procedure in place for collecting, storing, transporting, and disposing of used needles and syringes. Used disposable needles and syringes should be placed in a sharps container immediately after use. Once full, sharps containers and their contents can be destroyed by burial, burning or incineration.32

A Checklist for Giving Intramuscular Contraceptive Injections was developed to help providers give injections and dispose of waste safely.33

**Logistics: Commodities, Supplies, and Equipment**

“Stockouts” of needed equipment and supplies are commonly reported in service programs. Attention to logistics and supplies is critical because unavailability of either the injectable contraceptive itself or of the other needed supplies means injectable contraceptive services are also unavailable. Increasing demand for injectables challenges programs to maintain a steady flow of supplies and respond quickly as more clients ask for injectables. Maintaining a continuous supply of injectables means maintaining vials of the contraceptive, needles, syringes, and sharps containers for disposal of used equipment. Thus, assessing and forecasting demand for injectables is essential in planning and supplying to meet demand.32

Injectables should be stored between 20º and 25ºC (68º and 77ºF), away from direct sunlight, and protected from freezing. Changes in temperature can affect the size and solubility of particles in DMPA and the combined injectable Cyclofem. Heat can decrease the effectiveness of NET-EN without changing its odor or appearance. The shelf life of progestin-only injectables is three to five years, and of combined injectables, at least three years. Vials remaining beyond their shelf life should be discarded.32

**Marketing and Communication**

Family planning programs and providers can play an important role in communication on injectables; both to help women try and use injectables. When communicating about injectable contraceptives, it may help to tailor messages to potential and current users of injectables, as well as their husbands and partners. For example, many women have heard about injectables, but hesitate to try them because they need more information. Some have fears based on misinformation, and others need to talk with a trusted source of information. Seeing satisfied users and receiving correct information can help women make informed choices about injectables.

Current users of injectables may have questions or concerns about side effects. Interacting with a trusted source of information helps women cope with changes if they occur. Partners and husbands can support use and help women use injectables effectively. A 1995 study in the Philippines found that women whose husbands approved of injectables were more than twice as likely to continue using the method.45

Formative research will help identify the benefits and negative aspects of injectables as perceived by a particular target group. Findings can then help programs choose messages, sources, and media that will be effective for the specific audiences they address. Furthermore, making reliable and balanced information available to the public and providers has helped programs both avoid and deal with controversy. Maintaining a good working relationship with the news media and making sure reporters are well-informed is an important task for family planning programs.32
Information in the mass media or on the Internet can be an effective way to reach many potential or current users of injectables, delivering accurate information on the advantages, side effects, and health concerns for injectable contraceptives. Interactive sources, however, may be more helpful in informing people who are hesitant or skeptical of injectable contraceptives. Examples of communication mediums that offer opportunity to interact include: (1) telephone hotlines, which offer a private connection with a trained family planning counselor; (2) discussions with providers, which give women a chance to interact directly with a trusted source; and (3) community meetings, which are an interactive and public way to improve knowledge and answer questions about injectables. 

Key Guidance Documents

The World Health Organization publishes and periodically updates its four “cornerstones of effective contraceptive use” in a family planning guidance series. Together, these four cornerstones, described below, support the safe and effective provision and use of family planning methods; they are:

- **Medical Eligibility Criteria for Contraceptive Use** (MEC) (4th edition, 2010) is one of the WHO’s two evidence-based guidelines on contraceptive use, intended for policymakers, program managers, and the scientific community to support national programs in preparing service delivery guidelines. The document reviews the medical eligibility criteria for use of contraception, offering guidance on the safety of use of 19 different methods for women and men with specific characteristics or known medical conditions. The recommendations are determined by expert consensus and are based on systematic reviews of available clinical and epidemiological research.

- **Selected Practice Recommendations for Contraceptive Use** (2nd edition, 2004 edition) along with the 2008 Update, the companion guideline to Medical Eligibility Criteria for Contraceptive Use, provides guidance on the safe and effective use of a wide range of contraceptive methods. The recommendations, which answer 33 questions selected by the WHO, were determined by expert consensus and are based on systematic reviews of available clinical and epidemiological research. Five of the 33 questions address use of injectables and related issues.

- **Decision-Making Tool for Family Planning Clients and Providers** incorporates the guidance of the first two cornerstones and reflects evidence on how best to meet clients’ family planning needs. It is intended for use during counseling.

- **Family Planning: A Global Handbook for Providers** is the fourth cornerstone and also incorporates the guidance of the first two cornerstones. As a thorough reference guide, it offers technical information to help health care providers deliver family planning methods appropriately and effectively, providing specific guidance on 20 family planning methods including injectables.
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