



INFO Project  
Center for Communication  
Programs

**How family planning programs and providers can meet clients' needs for injectable contraceptives**

## Expanding Services for Injectables



Bangladesh/CCP

### Key Points

**More than twice as many women are using injectable contraceptives today as a decade ago, and the numbers keep growing. Injectables appeal to the many women who seek a family planning method that is effective and long-acting and can be used privately.**

Family planning services can meet the rising demand for injectables by:

- **Keeping enough supplies on hand.** Anticipating demand for injectables and placing accurate and timely orders helps programs maintain adequate supplies and avoid stockouts.
  - **Mobilizing a range of providers to offer injectables.** With training, any health care worker can give contraceptive injections.
  - **Taking injectables into the community.** Offering injectables in community programs increases access and can be as safe as clinic services.
  - **Organizing services efficiently.** Programs can hold down cost increases by organizing work more efficiently, purchasing supplies at the lowest available prices, and encouraging staff to increase productivity.
  - **Informing the public.** Communication programs can tailor messages to address women who know about injectables but hesitate to try them.
- As services expand, maintaining good quality remains an obligation to clients for all family planning methods. For injectables, attention to quality includes:
- **Giving injections safely.** Applying safe injection technique and the universal precautions, including disposing of used syringes and needles properly, helps prevent infection.
  - **Helping clients decide about injectables.** Good counseling helps women decide if an injectable contraceptive suits their preferences and their situation. Providers must tell women that injectables change bleeding patterns.
  - **Helping clients use injectables successfully.** Women who choose injectables keep using them longer when they know that bleeding changes are normal and understand the importance of returning for injections on time.



Series K, Number 6  
Injectables and Implants



See companion *INFO Reports*, "Injectable Contraceptives: Tools for Providers"

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**Tools for Providers** are in the companion *INFO Reports*. See also *Population Reports*, "When Contraceptives Change Monthly Bleeding," Series J, No. 54, August 2006.

**Coming Soon:** "Injectables Toolkit" Web site. Go to <http://www.injectablestoolkit.org> for job aids and information about injectable contraceptives.

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**Cover Photo:** A provider gives a client an injection in Bangladesh, where use of injectables has doubled over the last decade. As more women choose injectable contraceptives, programs will need to offer more good-quality services.

# Injectables Today and Tomorrow

More and more women are using injectable contraceptives today, and very likely even more will use this method in the future as it becomes increasingly available. Women choose injectables because they are effective, long-lasting, and private. For family planning programs, meeting increasing demand while maintaining good quality will be the key to success with injectables.

Between 1995 and 2005 the number of women worldwide using injectable contraceptives more than doubled. About 12 million married women used injectables in 1995. In 2005 over 32 million were using injectables (108, 163, 194). Injectables are the fourth most popular method worldwide, after female sterilization, the intrauterine device (IUD), and oral contraceptives. In sub-Saharan Africa, injectables are the most popular method, chosen by 38% of women using modern methods (see Table 1). By 2015 worldwide use is projected to reach nearly 40 million—more than triple the 1995 level (163).

Greater access largely explains this rapid growth in use. Approval of the progestin-only injectable DMPA (depot medroxyprogesterone acetate) in the United States in 1992 removed a constraint to access and a source of controversy in many countries over providing a drug that was not approved for contraception in the United States. Also, approval in the United States enabled the U.S. Agency for International Development (USAID) to supply DMPA to developing countries. As of 2006 DMPA was registered in 179 countries, an increase from 106 countries in 1995 (83, 99). Several countries, including Ghana, Vietnam, and Zambia are introducing or scaling up DMPA services as part of a package of reproductive or primary health care services (138, 224, 226).

In the next 10 years more family planning programs will offer injectables, and they will offer clients more choices of injectables. Most can be expected to offer a progestin-only injectable—DMPA injected every three months or NET-EN (norethisterone enanthate) injected every two months. Many will offer a combined injectable, probably either medroxyprogesterone acetate (MPA) combined with the estrogen estradiol cypionate ( $E_2C$ ) or NET-EN combined with the estrogen estradiol valerate ( $E_2V$ ). Both are injected monthly. Other combined injectables are available in some countries and regions (see Table 2, p. 5).

Women will be able to have injections in more convenient locations (see Checklist, p. 15). More

private clinics and providers will offer injectables (144, 152). More pharmacists will provide injectables in many countries, often as a part of social marketing programs (35, 36, 145). More programs will offer injectables in community services, and some women will choose home injection with the new DMPA formulation for subcutaneous injection (under the skin rather than in the muscle) (see box, p. 16).

**Table 1. Estimated Worldwide Use of Injectables Among Married Women Ages 15–49, 2006**



Region & Selected Countries	% Currently Using			% of Modern Method Users Using Injectables
	Any Method	Any Modern Method	Injectables	
<b>DEVELOPING AREAS</b>	<b>58</b>	<b>52</b>	<b>3</b>	<b>7</b>
<b>Sub-Saharan Africa</b>	21	15	6	38
Kenya 2003	38	31	14	46
Lesotho 2004	36	35	15	42
Malawi 2004	31	28	18	64
Namibia 2000	44	43	19	44
South Africa 2003	60	60	28	47
<b>Near East &amp; North Africa</b>	52	40	2	4
Egypt 2005	62	57	7	12
<b>Asia</b>	63	59	3	5
Bangladesh 2004	53	47	10	21
Cambodia 2005	40	27	8	29
Indonesia 2002–03	60	57	28	49
Nepal 2006	48	44	10	23
<b>Latin America &amp; Caribbean</b>	71	62	4	6
Haiti 2005–06	30	24	11	47
El Salvador 2002–03 <sup>a</sup>	67	61	18	30
Nicaragua 2001	67	66	14	22
<b>DEVELOPED AREAS</b>	<b>68</b>	<b>57</b>	<b>1</b>	<b>1</b>
<b>Europe</b>	74	64	0	0
<b>Eastern Europe &amp; Central Asia</b>	63	42	0	1
<b>North America</b>	75	71	3	4
<b>Other developed<sup>b</sup></b>	59	64	0	0
<b>WORLD</b>	<b>59</b>	<b>53</b>	<b>3</b>	<b>6</b>

<sup>a</sup>Data for women 15–44.

<sup>b</sup>Includes Australia, Israel, Japan, and New Zealand.

*Methodology and data sources:* Data for the number of married women ages 15–49 for each country were obtained from population projections for 2005 by the World Bank (201). Percentages are weighted by population size—that is, they reflect differences in population among the countries. Usage rates come from the most recent data from the Demographic and Health Surveys and Reproductive Health Surveys and, for countries without these surveys, data from the United Nations, 2005 (194), the U.S. Census Bureau's International Database (191), and other nationally representative surveys, including the U.S. National Surveys of Family Growth (122).

## How to Use This Report

This report can help family planning program managers develop strategies to:

- Meet the increasing demand for injectables with good-quality services.
- Address women who:
  - Would like to use injectables but lack access.
  - Hesitate to use injectables because they need more information about side effects or safety.

Providers can use the companion issue of *INFO Reports*, “Injectable Contraceptives: Tools for Providers,” to review the important elements of good-quality services. The tables and checklists in the INFO Report are aids for counseling women, giving safe injections, and helping women be satisfied users of injectables.

### Demand Accelerates and Suppliers Respond

Since 1995 the percentage of married women who rely on injectables has increased in 40 of 44 developing countries with multiple surveys (see Web Table 1<sup>1</sup>). Use increased particularly in Indonesia among married women ages 15–49 from 15% in 1994 to 28% in 2002, after the method was vigorously promoted and more widely distributed. Nearly half of all married Indonesian women using contraception now rely on injectables. Use also has increased sharply in Haiti, Malawi, and Namibia. Between 2005 and 2015 the largest increases in number of users are expected in Indonesia (almost 2 million additional users), Nigeria (almost 1 million more), and Pakistan (over 200,000 more) (163).

#### Popular in some countries but little used in others.

Overall, awareness and use of injectables are increasing, but levels of use vary widely within regions. In sub-Saharan Africa, Asia, and Latin America and the Caribbean, over 40% of married contraceptive users rely on injectables in some countries, while 5%–7% use them in other countries (see Web Table 2<sup>1</sup>). Variations within regions can be attributed to a variety of



Workers package DMPA in the warehouse of ProSalud, a nonprofit organization in Bolivia. Manufacturers, donors, and family planning programs in many countries are increasing the supply of injectables to meet demand.

<sup>1</sup> Web Tables are available for download and printing at <http://www.populationreports.org/k6/k6tables.shtml>

<sup>2</sup> The Web Figure is available for download and printing at <http://www.populationreports.org/k6/k6figures.shtml>

factors, including access to injectables, norms related to contraceptive use, government policies, women’s tolerance for side effects, and communication about injectables.

**Governments, donors, and manufacturers respond.** Where demand is increasing rapidly, governments have responded by placing larger procurement orders for injectables (see p. 6). Major donor agencies have steadily increased shipments of progestin-only injectables to developing countries (see Web Figure<sup>2</sup>). Between 2003 and 2005 shipments by the United Nations Population Fund (UNFPA), USAID, and the International Planned Parenthood Federation (IPPF) more than doubled, rising from 23 to 48 million doses per year. These donors contribute almost 60% of the total donated contraceptives worldwide. UNFPA, currently the largest supplier of injectables, shipped 27 million doses in 2005, a 35% increase over 2004. Shipments by USAID doubled between 2000 and 2005, rising from 9.3 million to 18.6 million doses, and they are expected to increase to 20 million in 2006 (21, 159). Sales of injectables by social marketing programs more than doubled between 2000 and 2005 (see p. 17). One manufacturer of DMPA projects annual demand for 150 million doses (enough for 37.5 million users) by 2010 (103).

### Effectiveness, Convenience, and Side Effects Influence Use

Many women have chosen injectables as their first modern method, and others have switched to injectables from oral contraceptives or other methods (44, 139). Women are choosing injectables because they offer a variety of advantages:

- **Highly effective.** Used correctly, injectables are more effective than female sterilization. If women return on time for injections, in the first year 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 (190). As injectables are commonly used in the United States, 3 in every 100 women become pregnant in the first year of use. This pregnancy rate is higher than that for IUDs, implants, and male and female sterilization but lower than that for oral contraceptives.
- **Long-acting.** Users need to remember only to have an injection every two or three months for progestin-only injectables or once a month for combined injectables. Users do not have to remember to do something every day or when about to have sex (20, 54).
- **Reversible.** Fertility returns after a woman stops using an injectable.

Population Services International

**Table 2. Formulations, Injection Schedules, and Availability of Injectable Contraceptives**

Common Trade Names	Formulation	Injection Type and Schedule	Registration/Availability in 2006
<b>Progestin-Only Injectables</b>			
<i>Depo-Provera</i> <sup>®</sup> , <i>Megestron</i> <sup>®</sup> , <i>Contracep</i> <sup>®</sup> , <i>Depo-Prodasone</i> <sup>®</sup>	Depot medroxyprogesterone acetate (DMPA) 150 mg	One intramuscular (IM) injection every 3 months	Registered in 179 countries
<i>depo-subQ provera 104</i> <sup>®</sup> (DMPA-SC)	DMPA 104 mg	One subcutaneous injection every 3 months	Approved in United States and United Kingdom; approval expected soon in other European countries; expected to be available in some developing countries by 2008
<i>Noristerat</i> <sup>®</sup> , <i>Norigest</i> <sup>®</sup> , <i>Doryxas</i> <sup>®</sup>	Norethisterone enanthate (NET-EN) 200 mg	One IM injection every 2 months	Registered in 91 countries
<b>Combined Injectables (progestin + estrogen)<sup>1</sup></b>			
<i>Cycloferm</i> <sup>®</sup> , <i>Ciclofeminina</i> <sup>®</sup> , <i>Lunelle</i> <sup>®</sup>	Medroxyprogesterone acetate 25 mg + Estradiol cypionate 5 mg (MPA/E <sub>2</sub> C)	One IM injection every month	Registered in 12 countries <sup>2</sup>
<i>Mesigyna</i> <sup>®</sup> , <i>Norigynon</i> <sup>®</sup>	NET-EN 50 mg + Estradiol valerate 5 mg (NET-EN/E <sub>2</sub> V)	One IM injection every month	Registered in 33 countries
<i>Deladroxate</i> <sup>®</sup> , <i>Perluta</i> <sup>®</sup> , <i>Topasel</i> <sup>®</sup> , <i>Pactectro</i> <sup>®</sup> , <i>Deproxone</i> <sup>®</sup> , <i>Nomagest</i> <sup>®</sup>	Dihydroxyprogesterone (algestone) acetophenide 150 mg + Estradiol enanthate 10 mg	One IM injection every month	Registered in 14 Latin American countries and Spain
<i>Anafertin</i> <sup>®</sup> , <i>Yectames</i> <sup>®</sup>	Dihydroxyprogesterone (algestone) acetophenide 75 mg + Estradiol enanthate 5 mg	One IM injection every month	Registered in 7 Latin American countries
<i>Chinese Injectable No. 1</i> <sup>®</sup>	17 $\alpha$ -hydroxyprogesterone caproate 250 mg + Estradiol valerate 5 mg	One IM injection every month, except 2 injections in first month	Registered in China

Sources: IPPF 2005 (83), Lande 1995 (99), Liggeri 2006 (103), WHO 1990 (204), WHO 1993 (205)

<sup>1</sup> Also called monthly injectables.

<sup>2</sup> The U.S. Food and Drug Administration has approved *Lunelle*, but it is currently not available in the United States.

Women stopping DMPA to become pregnant, however, take several months longer to conceive on average than women who used other methods (130, 171).

- **Private.** Women can use injectables without anyone else knowing (20, 109, 126, 138, 186)—particularly if a partner or in-laws object to contraception (19, 31).

Progestin-only injectables offer additional advantages for some women:

- They can be used during breastfeeding starting six weeks after giving birth (212).
- Monthly bleeding stops after a time for many users. Some women see this as an advantage of the method (62).
- Weight gain, common with use of injectables, is welcome for some women (4, 78, 109, 166).

**Side effects deter many, but counseling helps.** At the same time, many women do not choose injectables or they stop using them mainly because of side effects—particularly

bleeding changes, no monthly bleeding, and weight gain (13, 70, 135, 168). In a large multinational World Health Organization (WHO) trial, on average half of women stopped using DMPA and NET-EN within 12 months (202). In the United States more women stop using injectables within 12 months than stop oral contraceptives or the copper IUD (190).

***Good counseling can be the difference between successful and unsuccessful efforts to expand access to injectables.***

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 (30, 59, 75, 100, 227). Good counseling can be the difference between successful and unsuccessful efforts to expand access to injectables (77, 78, 224). Introducing injectables or any new method is an opportunity to improve counseling and quality of care for all available methods (224).

# Supply Meets Demand With Forecasting and Ingenuity

“No product, no program,” say logistics professionals (53). Increasing demand for injectables challenges programs to maintain a steady flow of supplies and to respond quickly as more clients ask for injectables. Maintaining a continuous supply of injectables—vials of the contraceptive, needles, syringes, and sharps containers for disposal of used equipment—requires adequate supplies at the warehouse and a well-run logistics system to distribute supplies to clinics and other service delivery locations (see *Population Reports*, “Family Planning Logistics: Strengthening the Supply Chain,” Series J, No. 51, Winter 2002).

## Forecasting Maintains a Steady and Sufficient Flow of Injectables

Forecasts of demand for injectables enable programs to place accurate and timely orders to manufacturers, donors, or procurement agents. With demand rising, accurate forecasting is especially important. The most accurate forecasts use several types of information. These include expected increases in use of injectables (for example, as a result of a communication campaign), past trends in use, numbers of new and returning clients, and changes in population due to migration. Forecasting needs to be done at least once a year and adjusted every six months based on actual use. Stock levels and trends in use of injectables should be reviewed every month at service sites and additional orders placed to maintain supplies (53). Many countries have computerized logistics management information systems at the central warehouse to help with forecasting (85, 94) (for forecasting tools, see Table 3, p. 22).

***With demand for injectables rising, accurate forecasting is especially important.***

Forecasting several years into the future alerts programs to potential shortfalls and helps governments and donors plan procurements. For example, the Kenya Ministry of Health (MOH) projects that the share of injectables in the contraceptive method mix will increase from 40% in 2002 to 50% in 2010. In 2003 the MOH’s reproductive health advisory board projected a shortfall of injectables beginning in mid-2004 and recommended that the MOH seek more funds from the government and donors (158). As a result of the forecasting, the government for the first time allocated funds in the budget specifically for injectables and covered part of the shortfall. Also, a donor agreed to provide funding for injectables and the MOH ordered injectables from UNFPA (97).

**Choosing which injectables to offer.** Programs forecast demand for each type of injectable that they offer. A number of organizations involved in international family planning suggest carrying one or at most two injectables (142). Carrying multiple injectables complicates forecasting, distribution of supplies, training, and service delivery. Differing injection schedules can confuse providers and clients (18, 156). To avoid confusion IPPF recommends that programs offer one progestin-only injectable and, if available, one combined injectable (84).

Some programs offer DMPA and NET-EN because donors supply them or clients ask for both (121, 156, 177). The two injectables differ in several ways. NET-EN requires more frequent injections than DMPA, which increases costs (177). Injections of NET-EN may be more painful because, in contrast to the water-based DMPA, NET-EN is oil-based and a larger-gauge needle is appropriate. NET-EN can be injected with a narrower needle, but the injection takes longer to administer and, as a result, may also be painful (175, 176).

At times, switching a client’s injectable may be necessary due to supply shortages. Switching injectables is safe and does not decrease effectiveness. Switching clients routinely between injectables is not recommended, however (215). When clients switch to a different injectable, the schedule for repeat injections changes and side effects may change. Such changes led some women in Nepal to stop using injectables, a country assessment has reported (156).

## Cooperation and Conservation Meet Unexpected Demand

Logistics managers can plan their response to unexpected demand for injectables. When supplies run low, managers can:

- **Order an emergency shipment.** USAID-funded programs can order emergency shipments of DMPA through the USAID Mission in their country to help prevent stockouts (21). UNFPA’s Global Contraceptive Commodity Program stores injectables and other contraceptives with their suppliers to facilitate fast shipment in the case of stockouts and emergencies such as earthquakes or wars. The normal, non-emergency lead time for ordering injectables from UNFPA is 10 weeks (91, 197) (see Table 3, p. 22).
- **Borrow supplies.** When delayed shipments of contraceptives led to stockouts at a health care facility in Kenya, staff borrowed contraceptives from a nearby district hospital and other facilities. This was one reason that this facility was identified as one of 13 high-performing facilities in Kenya (157).

- **Mobilize suppliers, volunteers, and shippers.** When stockouts of contraceptives plagued the national family planning program in Nepal in 1993, the Ministry of Health and UNFPA organized 75 graduate students to pack contraceptives and other supplies for maternal and child health. UNFPA supplied DMPA through its commodity distribution program (29). A private shipping company delivered the packages by road, air, and porter, and within 60 days every health facility in Nepal's 75 health districts had reproductive health supplies (196).

- **Share clients.** If a facility or program is running out of injectables, it can encourage clients to go to other sources for their injections and save its own supplies for those with no other source of supply. Public and private providers can work together to provide injectables when either has a stockout. Providers should be able to give clients directions to other sources of injectables.

- **Avoid losses** due to passed expiration dates and ruined stock. The First-to-Expire First-Out (FEFO) method—using supplies with the earliest expiry date first—helps to avoid loss through expiration. The shelf-life of progestin-only injectables is three to five years, and of combined injectables, at least three years (45, 98). Injectables should be stored between 20° and 25°C (68° and 77°F) 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*. Usually, any sediment at the bottom of a vial dissolves with gentle shaking. If sediment does not dissolve or has collected into a solid mass, perhaps because of low temperatures



An inspector at the central warehouse of the Ministry of Health in El Salvador checks that injectables are stored properly to avoid wastage. DMPA must be stored upright so that any precipitate collects on the bottom of the vial and can be completely dissolved with gentle shaking. If a vial is used with sediment on the bottom, the injection may not be effective for three months.

in the storage area, the vial should be thrown away (92). Injectables should be stored upright so that any sediment settles on the bottom of the vial and can be dissolved again by shaking. Heat can decrease the effectiveness of NET-EN without changing its odor or appearance. Stock that has been exposed to high heat, such as fire, should be thrown away (127).

If injectables are out of stock, providers typically give clients their second or third choice of contraceptive, or they may give them oral contraceptives and ask them to return in a month or more (61). Clients are more likely to stop using a contraceptive that is not the one they wanted, however (132). Faced with rising demand for injectables, programs and providers need to look for ways of supplying clients with their first choice.

## Training to Meet Demand

As demand for injectables increases, programs need more health care workers who can provide injectables. Staffing decisions and training content depend on a program's specific needs. An assessment in advance can help to determine who most needs training and in what (110, 136).

### Method Introduction or New Providers May Require Comprehensive Training

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. Depending on

providers' skill levels and on program needs, comprehensive training on injectables may include:

- Characteristics of injectable contraceptives and the importance of returning on time for the next injection,
- Giving injections using the universal precautions (see p. 8),
- Counseling clients, with emphasis on bleeding changes,
- Screening clients using the Medical Eligibility Criteria (see the *Checklist for Screening Clients Who Want to Initiate DMPA (or NET-EN)* in the companion issue of *INFO Reports*),

# Give Injections and Dispose of Waste Safely



As more providers give injectable contraceptives to more clients, injection safety remains crucial (208). The spread of infection from clients to other clients, health care providers, and the community can be avoided by:

- Ensuring an adequate continual supply of disposable injection equipment and sharps containers for safe disposal of needles and syringes,
- Following safe injection practices and universal precautions for infection prevention, and
- Establishing a safe waste management procedure.

Safety guidelines for contraceptive injections are the same guidelines that apply to all medical injections.

WHO defines a safe injection as one that does not harm the recipient, does not expose the provider to any avoidable risk, and does not result in waste that is dangerous to people (209). Of the 16 billion injections given for all purposes in developing countries each year, nearly two in every five are thought to be unsafe (81). WHO estimates that each year unsafe medical injections cause an estimated 21 million hepatitis B infections, 2 million hepatitis C infections, and 260,000 HIV infections (71). Every year these infections result in an estimated 1.3 million early deaths, 20 years of life lost per person, and US\$535 million in medical costs (115). Injections remain an important delivery method for curative and preventive purposes, so improving injection safety is necessary.

In 2005 contraceptive injections accounted for an estimated 1% of all injections. No statistics are available on the percentage of contraceptive injections that are thought to be unsafe.

## Auto-Disable Syringes Now Preferred

In the past it was common practice to use, sterilize, and reuse sterilizable injection equipment. More recently, single-use syringes, if disposed of as intended, have eliminated risk of client-to-client transmission of infection. The latest development is disposable auto-disable (AD) syringes. Unlike conventional disposable syringes, the AD syringe cannot be reused because it inactivates

after a single use. Depending on the design, either the needle retracts or the plunger breaks or locks (149). WHO recommends AD syringes for all immunizations and recommends disposable syringes—ideally AD syringes—for all other medical injections, including contraceptive injections (210, 223). Purchased in bulk, AD syringes cost approximately US\$0.06 each, about \$0.02 apiece more than conventional disposable syringes (150, 195). USAID began including the AD syringes with all shipments of DMPA in 2002 (95, 128).

***A safe injection is 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.***

Sterilizable needles and syringes should be considered only when disposable injection equipment is not available and if programs can ensure that sterilization conforms to WHO guidelines. Sterilization of reusable syringes and needles requires heating to 121°C (250°F) in high-pressure steam for at least 20 minutes (14, 206).

## Universal Precautions Prevent Infection Transmission

Safe injections require not only the proper equipment but also that providers understand and follow the universal precautions for infection control and best practices for injections (160). Developed in 1987 by the U.S. Centers for Disease Control and Prevention, universal precautions 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 (192, 218).

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 regulations (80, 211, 218).

## Proper Waste Disposal Keeps Clients, Staff, and Communities Safe

Disposable injectable equipment can generate a large amount of waste. Programs offering injectable contraceptives must have a



procedure in place for collecting, storing, transporting, and disposing of sharps waste (207).

Used disposable needles and syringes should be placed in a sharps container immediately after use to prevent needlestick injuries and access to used needles. When a sharps container is three-fourths full, it should be destroyed. Overfilling the container can lead to needlestick injuries. WHO-approved sharps containers distributed by USAID are designed to hold 100 syringes (45). Donors promote injection safety by “bundling”—that is, shipping matching quantities of sharps containers with vials of contraceptive injectables and AD syringes.

Methods for destroying sharps containers and their contents include burial, burning, and incineration (burning at high temperature) (128). Unfortunately, there are no easy nonpolluting methods for destroying used injection equipment. Programs should choose the method that is most appropriate for their local conditions, taking into account cost, safety risks, and local and national environmental regulations (207, 213, 217).

**Burying** sharps waste in a protected pit at least two meters deep is a simple and inexpensive method of disposal. Some programs build special pits for sharps waste near the clinic. Pits must be fenced to prevent community members and scavengers from entering. Encapsulation—sealing sharps containers with concrete or other substances before burial—can ensure that buried waste is not unearthed.

**Incineration**, at temperatures above 800°C (1472°F), minimizes the volume of waste and reduces the pollutants produced. It requires special equipment and fuel, such as propane or natural gas. Programs with on-site incinerators should position incinerators in a convenient outdoor location, away from crops and homes, and far enough away so that smoke does not blow into the facility. Where an incinerator is not available on site, some programs transport waste to a central health facility or use incinerators at other facilities, such as cement factories (151).

**Burning** sharps waste in a metal container or a protected hearth at low temperatures is a commonly used option. Fuel such as kerosene is added to the container, and the waste is burned until the fire goes out. After burning, the ash and noncombustible material are buried in a protected pit at least one meter deep. This method is relatively inexpensive and can reduce the weight and volume of waste (151). Burning should be done only when no other options are available since it produces harmful substances. Some countries have banned this method of waste disposal.

**Illustration:** *Immediately after giving the injection and without recapping the needle, a provider deposits the used syringe and needle in a conveniently located sharps disposal container. Safely disposing of used injection equipment prevents accidental needlesticks, which can lead to infection.*

- Counteracting myths and correcting misperceptions,
- Conducting return visits and ensuring continuity of care (see forthcoming *Population Reports*, “Developing a Continuing Client Strategy”), and
- Managing side effects.

The time needed for training depends on the amount of content, the initial skill level of trainees, program needs, and policy requirements. The Pathfinder International DMPA Training Module (see Table 3, p. 22) covers characteristics of DMPA, counseling, giving the injection, conducting return visits, and managing side effects. The module is designed for trainees to practice and demonstrate competence in each skill. It requires about 16 hours to complete (181). In contrast, in a pilot community distribution program in Uganda (see p. 12), community providers who had been providing oral contraceptives and condoms received comprehensive injectables training that included one week of classroom sessions and two weeks in hospitals and health centers (123, 183).

### Focused Training Meets Specific Needs

To meet demand quickly, programs may consider training current staff members, such as assistant or auxiliary workers, to give only routine repeat injections. This would free doctors and nurses to handle special needs (see box, p. 10). A short training course for providing repeat injections might focus on the first three topics listed on page 7: characteristics of injectables, giving safe injections, and counseling.

***Any health care provider who is appropriately trained can give injections safely.***

Focused training also can be used to address a specific component of service delivery that needs strengthening, such as counseling. For example, when Vietnam was scaling up the provision of DMPA in 1999, an assessment of an earlier pilot project found that client visits typically involved little counseling and that providers and program managers believed that a woman’s choice about contraceptives was best made by the provider. As a result of this finding, providers received focused training in providing balanced information, listening to clients’ concerns, and offering individually tailored guidance. This training improved counseling and helped women make an informed choice of DMPA and other contraceptives (224).

**Refresher training maintains skills.** Regular retraining can help maintain safe injection practices and maintain good quality of care generally (218). For example, in a 2005 survey of 526 nurses and midwives in Uganda, the reported frequency of needlestick injuries was lower among those who had attended safe injection training in their workplace than among those who had not had workplace training (129).

Depending on program needs, refresher training may be offered one or two times per year (74). Retraining also may address clinic staff other than providers, such as waste handlers (93).

### Competency-Based Training Works Best

Training that develops the skills, knowledge, and attitudes required to meet standards—known as competency-based training—has proved more effective than conventional training approaches, in which trainees may have little opportunity to practice skills (185). With this approach, training continues until each trainee is competent to provide injectables. The training uses techniques such as role playing, discussion, use of job aids, and simulation (93). Vietnam used the competency-based approach to training when scaling up DMPA services in 1999 (224).

### Supportive Supervision Can Encourage Good-Quality Services

Supportive supervisors are those who meet the needs of the staff they supervise, thus enabling providers to perform well and meet the needs of their clients (47). By giving constructive performance feedback, supportive supervisors can help staff correctly follow injection guidelines, improve their performance, identify operational barriers, and maintain standards (189). Ongoing supportive supervision is particularly important when programs increase the number of providers giving injections.

Program managers and providers together can use the Standards-Based Management and Recognition (SBM-R) approach to help improve performance and the quality of services (24, 125) (see Table 3, p. 22). In this approach supervisors and staff work together to define standards for service and performance, and they determine how to meet those standards. For example, if a supervisor sees that injection safety practices need improvement, SBM-R can guide the supervisor and provider in (1) setting performance standards for safe injections that detail *what* to do and *how* to do it; (2) identifying steps needed to meet the standards (such as refresher training in safe injection practices or acquiring more equipment and supplies); (3) measuring progress; and (4) motivating the providers to achieve objectives by offering incentives and recognizing achievements. Supervisors can use the “Checklist for Giving Intramuscular Contraceptive Injections” to ensure that providers are following the appropriate steps (see the companion issue of *INFO Reports*, “Injectable Contraceptives: Tools for Providers,” p. 2).

***Ongoing supportive supervision is particularly important when programs increase the number of providers giving injections.***

## With Training, a Range of Providers Can Give Contraceptive Injections

Service delivery guidelines in some countries restrict who can give injections. They limit provision to doctors and nurses. Studies show, however, that many types of health care providers can give injections if they are appropriately trained (36, 66, 183, 200). Such 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. Training a wider range of providers to give injections safely can expand access to injectables, reduce unsafe unauthorized injections, and save programs money.

In some cases, particularly when scaling up pilot programs, allowing certain groups of providers to give injectables may require changes in national policy. For example, in Honduras service delivery guidelines did not authorize auxiliary nurses to provide DMPA until 1999. Because an auxiliary nurse is often the only provider at a rural health center, women in rural areas who wanted injectables could not obtain the method easily. When a 1997–98 study demonstrated that auxiliary nurses could provide these services safely and cost-effectively, the Ministry of Health changed the service delivery guidelines (200). As a result, use of injectables increased 19% after three months in clinics where auxiliary nurses began offering injectables, and 35% in clinics where the auxiliary nurses offered injectables and also promoted the new services to clients and the community (112).

Formally training those who may be giving unregulated injections is another way to increase safe access to injectables. For example, a 2003 study in Egypt found that women frequently seek injections, both contraceptive and therapeutic, from informal providers, or “health barbers” (187). Because they often charge less than the cost of a new needle and syringe, it is likely that these providers reuse injection equipment. In this situation, changing guidelines to allow such providers to provide injections, training them appropriately, and supplying them with single-use injection equipment could reduce the potential for unsafe injections (86).



# Checklist for Good-Quality Injectables Services

Family planning program managers can use this checklist to help ensure that programs are providing good-quality injectables services.

## Clinics have adequate supplies

- Sufficient single-dose vials are available.
- Sufficient sterile syringes and needles are available. Use disposable syringes, ideally auto-disable (AD) syringes, if possible. If only reusable equipment is available, sterilize according to WHO recommendations (heating to 121°C (250°F) in high-pressure steam for at least 20 minutes).
- Sufficient sharps containers are available for disposal of used needles and syringes.
- Injectables are properly stored, upright and away from direct sunlight at 20–25°C (68–77°F).
- The oldest stock of injectables is used first.  
Tip: Establish a First-to-Expire/First-Out (FEFO) policy (see *Pocket Guide to Managing Contraceptive Supplies*\*).
- Timely supply orders are submitted.  
Tip: Use *PipeLine Software* to assist with forecasting, pipeline management, and procurement planning.\*
- A clean space is designated for preparing and giving injections, with a sharps container nearby.

## Providers safely give injections and manage waste properly

- Providers screen clients for medical eligibility.  
Tip: For screening, use the *Checklist for Screening Clients Who Want to Initiate DMPA (or NET-EN)* in the companion issue of *INFO Reports*.
- Providers counsel clients, with particular emphasis on side effects and how to manage them.
- Job descriptions define who:
  - ◆ Oversees logistics, equipment, and supplies
  - ◆ Counsels clients
  - ◆ Provides injections
  - ◆ Manages waste
- Providers and staff receive ongoing, supportive supervision.  
Tip: Use the *Standards-Based Management and Recognition (SBM-R)* approach.\*
- Pre-service and in-service trainings are offered regularly for all staff involved in giving injections and managing waste.  
Tip: For developing training tools and job aids, use *Do No Harm: Injection Safety in the Context of Infection Prevention and Control: Training Tools and Job Aids*.\*
- Guidelines are established for management of injection waste.  
Tip: Use *Management of Waste from Injection Activities at the District Level: Guidelines for District Health Managers*.\*
- All staff members follow waste management guidelines.
- The disposal area (for example, burial pit) is in a convenient location and secure from intruders.

## Injectables services are organized efficiently

- Injectables users receive routine repeat injections without a long wait.  
Tip: Set up an “express line” for repeat injections.

## Clients and the community are well informed about injectables

- Mass media campaigns for family planning mention injectables, if possible.
- Providers are knowledgeable about injectables and can respond accurately and helpfully to rumors and misperceptions.
- Printed materials about injectables are available to clients.

\* For more information, see Table 3, p. 22.



# Community Programs Can Safely

Providing injectables in the community gives women the choice of injectables in rural areas of Ethiopia, Ghana, Papua New Guinea, Thailand, and parts of other countries where clinics are hard to reach (8, 44, 61, 101, 124, 139, 147). In Bangladesh community programs serve both urban and rural areas (164). Community programs offer injectables from mobile clinics, village clinics, periodic temporary outreach clinics, or at the homes of clients or community health workers. Injectables services have been added to community provision of oral contraceptives and condoms and offered along with immunizations, other maternal and child health services, and some curative services (44, 183, 186).

In most countries these efforts have consisted of pilot studies. Two exceptions are Bangladesh, which used elements of the Matlab Project in the government family planning program, and Ghana, which is scaling up the Navrongo Initiative in the nationwide Community-Based Health Planning and Services (CHPS) Initiative (138, 164).

Community provision has dramatically 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 (44, 138). In this and other projects, many women chose injectables as their first modern method of contraception (44, 54, 138, 139). In some areas of Bangladesh, however, community provision had less of an effect on overall prevalence because women switched to injectables from other modern methods (66).

## Community Provision and Clinic Provision Prove Comparable in Quality

A study in Uganda compared the quality of the provision of injectables in the community and in the clinic. The study—carried out by Family Health International and Save the Children/USA in collaboration with the Ministry of Health (MOH) and Nakasongola local government—enrolled 449 community clients and 328 clinic clients and followed them up 13 weeks after their first injection of DMPA. Clinic providers were MOH nurses, and the community providers were local volunteers, who were affiliated with a clinic and had been providing free oral contraceptives and condoms in the community.

The community providers received classroom and clinical training, and they learned to screen clients with the help of a checklist (see *Checklist for Screening Clients Who Want to Initiate DMPA (or NET-EN)*, p. 5 in the companion issue of *INFO Reports*).

They gave injections in their homes or at the homes of their clients and were supervised by program and clinic staff and district health officers (183).



© Kingston Namun/Mark Munguas. Courtesy of Photoshare

A community nurse gives a contraceptive injection to a woman in Papua New Guinea. Small community programs in several countries and large-scale programs in a few have given women in rural areas the choice of injectables.

## Community provision has dramatically increased use of injectables in some areas.

The study compared several factors that contribute to quality:

- **Screening for medical eligibility:** There were no reported screening mistakes made by community providers or clinic providers (182).
- **Counseling:** At follow-up the clients were asked about side effects and about specific points made by their providers. Levels of clients' knowledge of bleeding changes, sexually transmitted infections, and reasons to return to the clinic were the same for community and clinic groups, and both needed improvement. For example, 20% or less of community and clinic clients knew that no monthly bleeding was a common side effect of DMPA. One difference reported by clients was that in initial counseling community providers mentioned other contraceptive choices less often than did clinic providers.
- **Injection safety:** None of the 777 clients reported infections at the injection site, and no providers reported needlestick injuries. Overall, 24 of the 449 community clients (5%) reported problems, compared with 8 of the 328 clinic clients (2%). Most of the problems were minor, such as temporary numbness or mild pain at the injection site. Four of the eight community clients reported severe pain. Three had received their injection from the same provider, who was then given more training. In the Matlab Project in Bangladesh, an assessment reported four abscesses in over 14,000 DMPA injections (3).

# Increase Access to Injectables

- **Disposal of waste:** In Uganda community providers were instructed to place used needles and syringes into sharps containers and carry the boxes to a clinic, where they would be burned and buried. Also, they could throw used needles and syringes into pit latrines. The community providers handled syringes safely, but disposal of used syringes from both clinic and community providers needed improvement at some clinics (182). Disposal has also needed improvement in the Navrongo and CHPS initiatives in Ghana (1, 225).
- **Continuation rates:** The percentages who had second injections in Uganda were similar—88% among community clients and 85% among clinic clients. Few other studies have compared continuation rates in community and clinic programs. In one, a Mexican study of the combined injectable *Cyclofem*, the one-year continuation rate was 37% among the 640 community clients and 22% among 2,817 clinic clients (60).

In Bangladesh continuation rates were lower in some areas of the scaled-up government program than in the Matlab Project. The one-year continuation rate was 69% in the Matlab Project, in which each provider was responsible for a population of 1,200 and visited clients every two weeks. In eight scale-up areas where each provider was responsible for a population of 6,800 and visited clients every three months or more, one-year continuation rates in two areas were 35% and 46% (139).

- **On-time repeat injections:** In Uganda almost all continuing clinic and community clients received their second injections on time, 94% in both groups. A little more than half of community clients had their second injection at the community provider's home, and about one-third had the injection in their own home. The rest had the injection either at a clinic or an unrecorded location (183).

**Many women had injections at clinics or the homes of community providers rather than in their own homes, most likely to maintain privacy.**

In trials in Bolivia and Guatemala also, many women had injections at clinics or the homes of community providers rather than in their own homes, most likely to maintain privacy (109).

In the Navrongo Initiative some women choose to visit the community provider on market days, and they count on her to know if they need an injection or can wait for the next visit (1).

## Morale and Costs Are Concerns of Scaled-Up Programs

The benefits of training last only as long as providers remain on the job. Turnover among community nurses has been high in the CHPS Initiative in Ghana. Community nurses work in difficult conditions, and some are stationed away from their families. To improve morale, the Ghana Health Service is increasing incentives for nurses to stay on the job and encouraging communities to select candidates and pay for their training. After training, the nurses return and work in their home areas (1,138, 225).



John Stanback/Family Health International

*Community providers in Uganda practice safe injection techniques. With appropriate training, a range of health care providers can learn to give injections safely.*

The cost of offering injectables and other health services in clients' homes has been a concern in Bangladesh. The government stopped household services in the late 1990s and set up community clinics to save money and increase efficiency by offering more services at each client visit (113, 164). The change in policy did not affect use of injectables or oral contraceptives in general, but it may have reduced access to health services for some poor and uneducated women (5, 113, 164). In a survey, over 80% of women said they valued home visits because the community provider gave them helpful information and their housework was not interrupted. A new government elected in 2002 resumed household services (113).

Today, as pilot projects are scaled-up, community provision of injectables challenges programs to ensure quality of care. Hiring and retaining enough providers, screening for medical eligibility, counseling, and waste disposal need attention in training and supervision (1, 66, 182, 225). Tomorrow, as more countries test and improve community provision of injectables, more women in isolated areas will have another contraceptive choice.

# Meeting Rising Demand Efficiently

Faced with limited resources, family planning programs need to serve more users of injectables without greatly increasing costs. Programs can increase efficiency by:

- Organizing work to save time,
- Getting supplies and equipment at the lowest available prices,
- Adding outlets without building clinics,
- Encouraging providers to decrease unproductive time while on the job, and
- Enabling a range of providers to give injections, as noted (see p. 10).

Also, programs can recover some costs by asking users to pay for injectables if they can.

## Organizing Work Better Can Save Time

Improving the flow of clients through clinics allows programs to care for more clients without lowering quality, hiring more providers, or increasing staff hours. For example, in Guatemala a clinic providing maternal and child health services improved client flow after a self-assessment by staff and a survey of clients. Clients used to wait, have a pre-visit discussion, return to the waiting room, see the provider, return to the waiting room, and then have a post-visit discussion. In the improved flow clients wait once and receive all services in one visit with one provider. This change enabled staff to see 33% more clients

and reduced the wait for clients (28). For injectables users returning for routine repeat injections, clinics can set up an “express” line to save time for both clients and staff (172), while giving returning clients the option of more time with a provider if they have questions, problems, or something to discuss.

Recording clients’ waiting time and providers’ time spent with clients can help programs identify problems with organization of work. The COPE® (Client Oriented, Provider Efficient) process developed by EngenderHealth can help to organize work more efficiently. COPE tools include software to track the cost of staff time and supplies (52). The NGO (Non-Governmental Organization) Service Delivery Program (NSDP) in Bangladesh uses the CORE (Cost and Revenue Analysis) computer program developed by Management Sciences for Health to model the effects on efficiency and cost recovery of changes in client flow, prices, and staff time (133) (see Table 3, p. 22).

## Programs Can Hold Down Costs of Supplies and Facilities

DMPA and monthly injectables currently cost US\$0.78 to \$0.84 per dose from UNFPA. NET-EN costs 30%–50% more (91, 197). The cost of supplies for DMPA, for example, for one woman for one year (four injections) would be US\$3.36 to \$3.60, including four auto-disable syringes costing \$0.06 each. By comparison, 12 cycles of oral contraceptives at US\$0.16 to \$0.63 per cycle from UNFPA would cost \$1.92 to \$7.56 (197). The total cost of providing injectables, of course, includes the time of the provider to counsel and give the injection and the overhead cost of the facility and equipment (see Table 3, p. 22, for resources to estimate total costs).

To keep costs down programs can buy supplies in bulk, set up services in existing buildings, and share facilities with other health services.

**Procure good-quality injectables, injectable equipment, and other contraceptives at the lowest available price.** 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 (83). To ensure the quality of supplies, programs should ask for bids only from manufacturers that have been assessed for quality. WHO will prequalify injectables and manufacturers by mid-2007 and will provide this information on its Web site (<http://mednet3.who.int/prequal/default.htm>) (104).



*A distributor for a social marketing program in Kenya delivers injectables to a pharmacy. Clients buy the injectable and take it to a health care provider for the injection. The availability of injectables in the public and private sector is increasing in Kenya. A projected shortfall in supplies persuaded the government to allocate funds for injectables and seek help from donors. Many women are willing to pay for injectables, and sales in the private sector have increased.*

Population Services International

Programs can also work with the 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 (38, 127).

**Adjust procurement to match demand.** As users switch to injectables from other methods, demand for other methods may rise more slowly or even decrease. If so, programs can place larger orders for injectables and smaller orders for other methods. Monitoring use with a logistics management system will indicate changes in demand and in the method mix and will help programs avoid overstocking some contraceptives if demand for them decreases.

**Set up more outlets for injectables without building more clinics.** Injections have been given in existing community clinics, mobile clinics, and the homes of clients or community providers (8, 61, 139, 183). Facilities for giving injections need not be elaborate: a private examination area, a waiting area for clients, space to store supplies and client records, and, if possible, a place for providers to wash hands (204, 227).

**Share cost of outreach services with other services.** Outreach services can follow the example of clinic-based integrated family planning and maternal and child health services. In Thailand mobile clinics offered STI services, Pap smears, and other services as well as contraceptives (8). In rural Ethiopia teams offering DMPA, immunizations, and antenatal care set up monthly outreach sites in a project managed by Save the Children/USA (61). Offering multiple services can save on fixed costs and is likely to be more convenient for clients who need several types of health care.

### Some Providers Can Increase Productivity

Family planning providers in many programs are overworked. If they are providing other services, especially curative services, clients typically form long lines at the clinic, and providers are fully occupied.

In some programs, however, there may be opportunities to increase providers' productivity and serve more clients without increasing costs. Studies in several countries report that providers in some public or NGO clinics do not work a full day, and they spend less than half their time with clients. Many spend considerable time performing administrative duties or waiting for clients (76, 88, 89, 133). For example, from observations of nurses and doctors in 82 Mexican Ministry of Health (MOH) facilities in 1996, a study concluded that, with small changes in providers' schedules, the MOH could meet demand for family planning through the year 2010 without increasing costs or hiring more providers. If providers increased their work time from six to seven hours a day and increased the time spent with clients from about 3 to 4½ hours a day, the cost per client

## Checklist for Improving Access to Injectables

To meet the rising demand for injectables, program managers need to make it easier for women to get to services—and without a long wait. The items in this checklist can help to remove barriers and improve access to injectables.

### *Women can get to services easily*

- Services in cities and towns are conveniently located. They are within walking distance or close to public transportation.
- Injectables are available five or more days a week.
- Clinic hours allow women to visit without taking time off from work.
- Most clients wait no more than one hour for service.
- Users of injectables receive routine repeat injections without a long wait—for example, in an express line.

### *Services are offered in rural areas through community programs*

- Services are available to women who cannot leave their homes or villages.
- Outreach clinics are set up at least once a month.
- Community health workers provide injectables or refer women to accessible clinics.

### *Injectables are available from:*

- Hospitals
- Family planning clinics
- Maternity clinics
- Clinics providing postabortion care
- Private doctors and nurse-midwives (Is there a network of private providers offering injectables?)
- Pharmacies, including those working with social marketing programs

### *Location of service outlets and their hours are well known to women and their partners*

Outlets are well marked. Location and hours are:

- Publicized at public events set up to provide information about family planning
- Included in counseling at clinics providing maternity and postabortion care
- Broadcast on radio and television, if possible
- Publicized regularly in newspapers and magazines
- Posted on billboards



# Injectables Tomorrow: Subcutaneous DMPA and Home Injection

A new lower-dose formulation of DMPA, *depo-subQ provera 104* (also called DMPA-SC), is injected under the skin rather than in the muscle. It contains 104 mg of DMPA rather than the 150 mg in the intramuscular formulation. Like the intramuscular formulation, DMPA-SC is given at 3-month intervals.

Approved first in the United States and the United Kingdom, subcutaneous injection of DMPA may be available in some developing countries by 2008. DMPA-SC is available only in prefilled, single-use syringes. In developing countries it will be available only in prefilled *Uniject*<sup>TM</sup> devices designed for subcutaneous injection (102, 103).

DMPA-SC is just as effective as the formulation injected into the muscle, and the patterns of bleeding changes and amount of weight gain are similar (7, 87).

One-year continuation rates in clinical trials were high, 68% on average at sites in North and South America and 80% in Europe and Asia. Despite the lower dose, DMPA-SC is effective for overweight or obese women (41).

Injections of DMPA-SC are given in the upper thigh or abdomen. DMPA-SC should not be injected intramuscularly, and the intramuscular formulation should not be injected subcutaneously. The intramuscular formulation cannot be diluted to make the lower-dose subcutaneous formulation.

**Given the choice, many women prefer self-injections or home injection.** In trials of DMPA-SC, some women gave themselves injections and many said they would prefer self injection. For example, among 1,787 women participating in trials of DMPA-SC with standard syringes, 16% gave themselves injections. Among the approximately 1,600 participants who answered a questionnaire, most would prefer to give themselves the injection either at home (50%) or in a doctor's office (21%), while 29% would prefer injections by a provider (42). Even with intramuscular injections, most women in small studies of *Cyclofem* in Brazil and the United States preferred self-injection in the clinic or at home (11, 184). Self-injection of DMPA-SC may require approval by drug regulatory agencies and ministries of health.

Self-injection will save women the time and expense of repeated visits to a health care provider and could increase continuation

rates. Among 111 women who stopped using *Cyclofem* or DMPA in a study enrolling 360 women in Kenya, for example, 43% said the reason was related to problems returning to the clinic on time (165). Women could be given several *Uniject* devices at the clinic so that they could have home injections for a year or more, or they could buy the devices at a pharmacy.

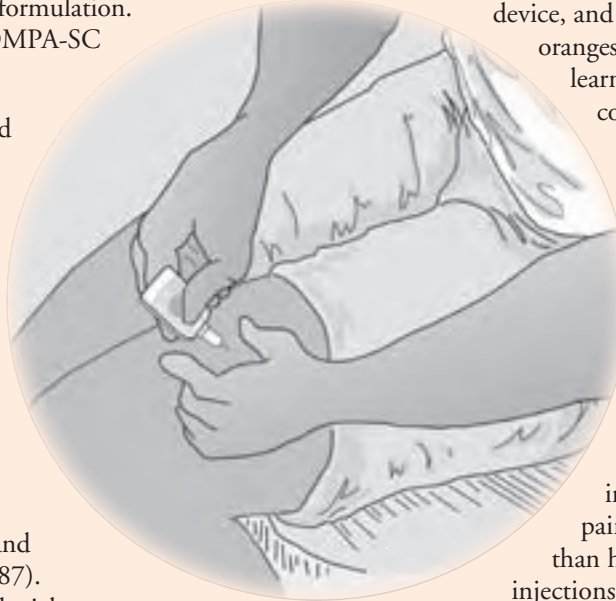
Women or family members will need training to give injections. Training in Brazil to use *Uniject* for intramuscular injection of *Cyclofem* included several sessions under the supervision of a nurse. Women learned how to use the *Uniject* device, and they practiced giving injections in oranges. More than 90% of the participants learned to give themselves injections correctly (11).

Some women will not want to give themselves injections. In Brazil 102 *Cyclofem* users were invited to participate in the study of self-injection. Of these, 14 declined because they did not want to give themselves injections, 32 balked at giving themselves injections even after training, and 7 gave themselves one injection but no more, because of pain. The remaining 49—slightly less than half—gave themselves two or three injections (11).

Thus, while self-injection may become an option, it should not be required of everyone. Those who are fearful or hesitant may put off giving themselves an injection and thus increase the chances of pregnancy. Among people with diabetes or multiple sclerosis who give themselves daily or weekly therapeutic injections, anxiety reduces adherence to injection schedules (116, 117).

**Self-service offers possible savings and will need guidelines.** Home injection will decrease cost per client because self-service clients need less time with health care providers. Still, community providers will need to check periodically for problems with side effects, adherence to the injection schedule, and changes in health that would make switching to another method advisable. Providers will also need to ensure that women dispose of used injection equipment safely. A study of 100 diabetic patients in Tunisia reported that 94% threw used equipment in the household garbage (39). Family planning programs may want to develop guidance, including information on storage of injectable contraceptives and safe disposal of *Uniject* for women who choose self-injection and for the providers who serve them.

**Illustration:** A new lower-dose formulation of DMPA is injected under the skin rather than in the muscle. In developing countries it will be available in prefilled *Uniject* devices, possibly by 2008. Many women may choose to give themselves the subcutaneous injection or have family members give the injection. *Illustration: Rafael Avila/CCP*





using combined injectables for a year would decrease from about US\$49 to \$37 (76).

Providers can be more productive if more clients come during times of the day when the clinic is normally not busy. Appointments can be scheduled during these times, generally after 1:00 p.m., and clients could be charged less. More research is needed, however, to assess providers' motivation and the best ways to reward them for seeing more clients (88). Programs may need to raise salaries or reward providers for seeing more clients, but the result can still be a net decrease in cost per client served (89).

### Some Injectables Users Are Willing to Pay

Program managers can recover some costs from users of injectables. Starting to charge clients who have received free services and supplies, or increasing existing charges, does not always decrease demand substantially. In general, managers of public and private nonprofit family planning programs overestimate the effect of price increases on demand (2, 56). In fact, even doubling the price of contraceptives has reduced demand by no more than 15%, according to five studies in Bangladesh, Indonesia, and Nigeria (107). In Indonesia during the economic crisis in the late 1990s, prices rose faster than incomes. The price of injectables more than doubled on average, but demand was unchanged (58, 118).

In some countries, however, family planning clients are sensitive to price changes. In Malawi, for example, increases and then decreases in prices by an NGO in response to changes in donor funding led to dramatic decreases and then increases in numbers of family planning clients (180).

To gauge what people would pay for injectables and other contraceptives, program managers can conduct a willingness-to-pay survey. Applied to injectables, the survey starts with

two questions: What do you pay for injectables? Would you be willing to pay X amount (a moderately higher price) for injectables? The third question suggests a higher price if a woman is willing to pay X, or less of an increase if she is not willing to pay X amount. Before increasing prices throughout the program, managers can raise prices in a few clinics first to check the accuracy of any predicted changes in demand (2, 56).

### *In rural Ethiopia teams offering DMPA, immunization, and antenatal care set up monthly outreach sites.*

By definition, social marketing programs charge for their products. Pricing is not based on costs but rather on ability to pay. Some social marketing programs set the annual price of injectables and other contraceptives at 1% or less of median annual family income—a price that most people can afford. These programs use attractive packaging for injectables and other contraceptives to promote them and distinguish them from public-sector products (69). Sales of injectables in social marketing programs have risen dramatically. Among country programs with total annual contraceptive sales of at least 10,000 couple-years of protection, sales of injectables more than doubled from 8.4 million doses in 2000 to 20.2 million doses in 2005. By comparison, sales of oral contraceptives increased by about 50% and total couple-years of protection provided by these programs increased by 57% (46).

Cross-subsidization is another way to shift costs. Programs charge more than cost for some products or services and use the profits to subsidize services that do not cover costs or to offer free services for the poor. For example, social marketing programs in Brazil, China, El Salvador, the Philippines, and other countries have charged more than cost for some brands of injectables, oral contraceptives, and condoms (9).

## Communication Helps Women Try and Use Injectables

When interest in a new product is growing, as with injectables, communication by family planning programs can address people who know about the product but are hesitating to try it. These are people who think a long time before trying something new or who are skeptical about innovations. Many need to see satisfied users among their peers or be encouraged by opinion leaders before they try something new (162, 227). Each of the three stages they pass through—being persuaded that the product is good, deciding to use it, and then starting to use it—can be addressed by different messages (140).

At the same time that programs address this main audience, they can also address other important audiences—women who are already using injectables, men, and providers. Women who are using injectables often have questions or concerns about side effects. Some men help their partners choose injectables and use them effectively (227). For example, a 1995 study in the Philippines found that women whose husbands supported DMPA use were more than twice as likely to continue the method as women whose husbands disapproved (143). Providers may need information that addresses their own knowledge and attitudes about

injectables (6, 54). Efforts to introduce injectables in public family planning programs should include information for private providers because women may consult them about side effects (227). Audience research—with focus groups, for example—helps programs choose messages, sources, and media that will be effective for the specific audiences they want to address.

Injectables have been controversial in some countries because of health concerns. In India, for example, injectables are not offered in the government family planning program in part because of opposition from women's groups (63, 72, 169). Programs should be ready to respond to groups that publicly oppose injectables specifically or modern contraceptives in general. 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 that reporters are well-informed is an important task for family planning programs (161). For example, in Indonesia, when the risk of bone loss among DMPA users was in the news in 2004 and 2005, programs contacted journalists so that stories in the mass media presented information about the benefits of using DMPA along with the risk of bone loss (105) (For information about bone loss, see p. 21).

### In Various Media Trusted Sources Address Benefits and Misinformation

Potential users assess the benefits and drawbacks of a new product before deciding to use it. The important characteristics of a new product are its advantages over current products, its compatibility with a potential user's life (how familiar it seems), and ease of use. Being easy to try or to observe is an advantage for a new product (162).

To help potential users assess injectables, communication programs have pointed out advantages, side effects, and health concerns. Also, programs have corrected misinformation about injectables by pointing out, for example, that women can get pregnant after stopping injections (146). Women may need assurance, if monthly bleeding stops, that they are not pregnant and that blood is not building up in their bodies (18, 61, 79). For women ready to try injectables, programs publicize the location and hours of services (61, 183).

Trusted sources have delivered information about injectables in media or forums that are appropriate for the audience. In sub-Saharan Africa aunts are trusted sources of information about sexuality, and in Côte d'Ivoire "Auntie Fatou" provided information

about injectables and other contraceptives in television spots (146). Doctors have been portrayed discussing injectables in television spots in Egypt and radio spots broadcast in several sub-Saharan African countries (51, 82, 134). In Pakistan, where many people own cassette tape players, a social marketing program distributed a cassette recording of a simulated discussion of injectables by a provider and a couple (34).

***When interest in a new product is growing, as with injectables, communication can address people who know about the product but are hesitating to try it.***

For some people, information in the mass media or on the Internet may be enough to get them to try a new method. But for the majority who are hesitating or skeptical, a medium that offers the opportunity to interact can be helpful (162). For example, in social marketing projects carried out by Social Marketing for Change (SOMARC) in Kazakhstan, Turkey, and Uganda, radio and television advertising alleviated concerns about convenience, cost, or availability of injectables and oral contraceptives. To address concerns about side effects, however, women needed to interact with a credible source, such as a doctor or family planning counselor, and be able to ask questions (18). Interactive media and forums have included telephone hotlines, discussions with providers, and community meetings.

**Telephone hotlines** offer a private connection between contraceptive users and a trained, credible family planning counselor. Among callers to a hotline in Turkey were both women who were using injectables and women who were



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*A billboard in Guinea promotes the progestin-only injectable Depo Provera as “effective, reversible, private—a long-acting contraceptive.” Communication programs address both women and men, who often help their partners choose and use injectables.*

interested but not using them. DMPA users typically called because they had no monthly bleeding and worried that they might be pregnant. One caller had a pregnancy test every month to make sure she was not pregnant. Some women called the hotline for more information after their doctors had told them about irregular or heavy bleeding caused by DMPA. Health care providers also called the hotline for information. For example, a pharmacist called to confirm that DMPA is given every three months rather than every month as some local doctors had said (18).

**Discussions with providers.** Inviting women to a clinic to discuss family planning has given them a chance to interact directly with providers and let them know where injectables are available (50). In one-to-one discussions in women's homes, village health workers in Ethiopia provide information about the benefits of family planning and the availability of injectables. They refer women to health clinics for more information and services (61).

Coaching can help women talk to providers and get the information they need. In a study of family planning counseling in Indonesia, for example, a patient educator coached women about the importance of asking questions and helped them prepare questions and practice asking them. One practice question concerned injectables: "If women don't menstruate when they use injections, where does the blood go?" (for the answer, see p. 20). In taped counseling sessions, coached women asked more questions than uncoached women and they expressed more concerns about contraceptive methods. As a result, providers gave the coached women more information specific to their situation (96).

***To address concerns about side effects of injectables, some women need to interact with a credible source, such as a doctor or family planning counselor.***

**Community meetings** are an interactive and public way to improve knowledge and answer questions about injectables and other methods. They also provide information for women who are unable to travel, and for men (18, 34). For example, in the SOMARC project in Uganda midwives set up one-hour meetings with women interested in family planning by working with local officials, religious groups, trade schools, and factories. About 11% of the approximately 17,000 women who attended community meetings



*A woman carries a model of a needle and syringe to publicize injectables in a family planning parade in Peru. Engaging communities and their leaders in communication activities has been an important part of efforts to increase access to injectables and other contraceptives.*

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later obtained a contraceptive from a clinic. In the areas where the meetings were held, sales of injectables more than doubled from the six months before the meetings to the six months after the meetings (18).

Engaging community leaders has helped the introduction of injectables and other methods in Ghana and Vietnam (44, 227). The Navrongo Initiative in Ghana, for example, encouraged support for family planning by enlisting the help of opinion leaders and using men's and women's social networks. Councils of elders formed health care action committees, and village leaders and elders convened regular community gatherings to discuss health and family planning with the men. The goal was to show that village leaders endorse family planning and to encourage couples to discuss their reproductive health. As noted, the vast majority of women starting a modern method of contraception in the Navrongo Initiative chose injectables offered by community providers (44, 138).

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Today injectables are becoming more available and attracting more users. Tomorrow, demand for injectables will likely grow further as these methods are offered in more community programs and as subcutaneous injection of DMPA becomes available. Programs are trying to keep up with demand by keeping supplies in stock, ensuring that providers give injections safely, and informing women about injectables. The result of these efforts will be more satisfied users of this safe and effective contraceptive method.

# Questions & Answers About Injectables

## 1 How do injectables work?

Injectables work mainly by preventing the development and release of eggs from the ovaries (ovulation). They also thicken cervical mucus, which blocks sperm from meeting the egg. Both progestin-only and combined injectables are very effective when users return on time for their next injections.

## 2 How are combined injectables similar to combined oral contraceptives? How do they differ?

Long-term studies of the health risks and benefits are under way, but few results are available yet. Still, combined injectable contraceptives contain the same types of hormones as combined oral contraceptives (COCs). Therefore researchers assume that most of the findings about COCs also apply to combined injectables. A difference is that monthly injectables are not processed by the liver before entering the bloodstream, as are medications taken by mouth. As a result, monthly injectables have less effect on liver function than COCs, and women can use them with some conditions, such as gall bladder disease, that would make use of COCs less safe (212). Also, short-term studies have found that monthly injectables have less effect than COCs do on blood pressure, blood clotting, and the breakdown of fatty substances (lipid metabolism).

## Side Effects

## 3 Are the bleeding changes caused by injectables harmful?

In most cases, no. Heavy bleeding, however, which is uncommon, may contribute to anemia, particularly among women who are nearly anemic. Also, if there is reason to suspect that a bleeding pattern has another cause—not the injectable—then the cause should be investigated.

## 4 If a woman does not have monthly bleeding while using progestin-only injectables, does this mean that she is pregnant or that blood is building up in the body?

No. Lack of bleeding most likely does not mean a woman is pregnant if she was not pregnant when she started injectables and has been having injections on time. Blood does not build up inside a woman's body while she uses progestin-only injectables. Lack of bleeding while using injectables is similar to lack of bleeding while breastfeeding. During the menstrual cycle the lining of the womb thickens and a woman releases an egg (ovulates). If the egg is not fertilized, the tissue and blood from the thickened lining are shed as menstrual bleeding. When a woman uses progestin-only injectables or if she fully breastfeeds her baby for six months, the lining of the womb does not thicken, the woman usually does not ovulate, and there is no menstrual bleeding.

## 5 Will injectables change mood or sex drive?

Some women using injectables report mood changes and less sex drive, but the great majority do not (65, 87, 202). It is difficult to tell whether such changes are due to injectables or to other causes. There is no evidence that using injectables changes a woman's sexual behavior.

## Safety

## 6 Will a woman still be able to become pregnant after she stops using an injectable?

Yes. Monthly bleeding and release of eggs from the ovaries (ovulation) return. Women of any age, whether or not they already have children or want more children, can use any injectable contraceptive, and it will have no effect on future fertility.

## 7 Do injectables cause cancer?

Many studies show that DMPA does not cause cancer. DMPA use helps *protect* against cancer of the lining of the uterus (endometrial cancer). Women have a slightly increased risk of being diagnosed with breast cancer while using DMPA or shortly after they stop, but this may be due to earlier detection of existing disease. If a woman has not developed breast cancer within five years of starting DMPA, then her risk of breast cancer is the same as the risk for a similar woman who never used DMPA.

A few studies suggest that there may be a slightly increased risk of cervical cancer among women who use DMPA for five years or more if they have persistent infection with certain strains of human papillomavirus (HPV) (178). Cervical cancer cannot develop because of DMPA use alone. It is caused by persistent infection with these strains of HPV. While HPV infection is common, *persistent* HPV infection with one of the cancer-causing strains is not common. Few additional cases of cervical cancer will occur because of DMPA use.

Little information is available about NET-EN. It is thought to be as safe as DMPA and other contraceptive methods containing only a progestin, such as progestin-only pills and implants.

## 8 Can injectables cause abortion?

No. Injectables do not disrupt an existing pregnancy. They should not be used to cause abortion. They will not do so.

## 9 Do injectables cause birth defects?

No. DMPA does not cause birth defects even if a woman mistakenly receives an injection when she is pregnant or even if a woman becomes pregnant while using DMPA (131). There is little evidence about NET-EN, but it is assumed to be the same as DMPA in this regard.

Combined oral contraceptives do not cause birth defects, and so it is assumed that combined injectables do not cause birth defects, either (26, 131, 155).

## Women With HIV/AIDS Can Use Injectables

Injectables are safe and effective for women who have HIV, including those who have AIDS and those who are taking antiretroviral (ARV) medications. Effective contraception helps women avoid the health risks of unintended pregnancy with HIV infection, including mother-to-child transmission of HIV (119, 148). Also, although there have been few studies, there is evidence that some ARV medications harm a fetus. Women should use efavirenz, for example, only if they use effective contraception (214).

There have been theoretical concerns that ARV medications could reduce the effectiveness of hormonal contraceptives because some medications speed up liver metabolism (141). One small study of women using efavirenz, nelfinavir, or nevirapine reported that after an injection of DMPA, levels of progesterone indicated that no women ovulated (33). A study of an oral contraceptive, however, reported that nevirapine had a significant effect on both estrogen and progestin levels (114). Even if an ARV medication did decrease the hormone level in the blood somewhat, users are probably still well protected against pregnancy because DMPA is nearly as effective for three months at a 100 mg dose as at the usual 150 mg dose (203). To date, no studies have looked at NET-EN or combined injectable contraceptives.

Because of the concerns about decreased effectiveness, it has been suggested that women using nevirapine and DMPA be especially urged to return on time for injections (173). Women using nevirapine or other ARV medications who return late but within two weeks of their injection date, however, should not be denied an injection. No evidence supports shortening the interval between injections for women using ARV medications.

The few studies available find that DMPA has little or no effect on the plasma concentration of ARV medications (33) or on their effectiveness as measured by the plasma concentration of lymphocytes (white blood cells) and HIV (32).

Injectable contraceptives offer no protection against transmission of HIV or other sexually transmitted infections. Used consistently and correctly, male or female condoms help prevent transmission of infection. Condoms can be used along with injectables and with other family planning methods. Also, monogamy or at least reducing the number of sexual partners can lower the risk of HIV infection.

### 10 Why does DMPA affect bone density?

DMPA reduces levels of estrogen in the body. Estrogen helps to regulate the flow of minerals to and from the bones. When estrogen levels are low, more minerals are lost from bone than are reabsorbed. This leads to a decrease in bone density (137).

Whether DMPA increases the risk of broken bones requires more research. A woman's lifetime risk of broken bones is unlikely to be affected because women regain bone density after stopping DMPA. 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. Among adolescents, it is not clear whether the loss in bone density prevents them from reaching their potential peak bone mass. Also, more research is needed on the effect of DMPA use during the reproductive years on the risk of broken bones during menopause, and the effect of DMPA use near menopause on a woman's ability to regain lost bone density.

Because of the bone loss issue, drug regulatory agencies in the United Kingdom and United States advise women to consult providers after using DMPA for two years to decide if they want to continue DMPA or to choose another method (49, 193). An expert working group advising the World Health Organization, however, concluded that the decrease in bone density should not limit who uses DMPA, or for how long, among women ages 18 to 45. The benefits of using DMPA outweigh the theoretical concerns about bone fracture for these women and for adolescents younger than 18 and women over 45. Since there is not enough information about long-term DMPA use by adolescents and women over 45, the expert group recommended that providers and these women reconsider the benefits of DMPA and their risk of bone fracture over time. These recommendations also apply to NET-EN (216).

## Other Uses

### 11 Can a single injection of a combined injectable be used to bring on regular monthly bleeding in a woman with irregular bleeding?

No. A woman may experience some bleeding (a "withdrawal bleed") about a month later as a result of the injection, but there is no evidence that giving one injection of a combined injectable to a woman with irregular bleeding will cause her monthly bleeding to become regular.

### 12 Can a single injection of a combined injectable be used as a pregnancy test?

Giving a woman combined injectables to see if she has bleeding when she stops taking them is not recommended as a way to tell if she is pregnant. Combined injectables should not be given to a woman as a "hormonal pregnancy test" because they do not produce accurate results.



# Table 3: Key Resources for Program Managers and Providers

Resource	Availability	Resource	Availability
<b>Ensuring Reliable Supplies</b>		<b>Training and Supervision (Continued)</b>	
<p><b>Title:</b> <i>Pocket Guide to Managing Contraceptive Supplies</i>  <b>Organization:</b> U.S. Centers for Disease Control and Prevention  <b>Description:</b> A quick reference guide for staff who manage contraceptive supplies and logistics. Includes logistics formulas and principles.</p>	<p>PDF available online.*            To order print copies, contact: U.S. Centers for Disease Control and Prevention Division of Reproductive Health, MS K-22, 4770 Buford Hwy., NE Atlanta, GA 30341, USA            E-mail: jtj2@cdc.gov</p>	<p><b>Title:</b> <i>A Guide for Supervising Injections</i>  <b>Organization:</b> WHO  <b>Description:</b> A guide for supervisors to observe injection practices, provide feedback about safe and unsafe practices, and help resolve problems contributing to unsafe injections.</p>	<p>PDF available online.*            To order print copies, contact: World Health Organization Department of Essential Health Technologies 20 Avenue Appia-1211, Geneva 27, Switzerland            E-mail: eht@who.int</p>
<p><b>Title:</b> <i>PipeLine Software Tool</i>  <b>Organization:</b> John Snow, Inc. (JSI)  <b>Description:</b> A tool to help program managers monitor stock and plan procurement through forecasting, maintaining consistent stock levels, and preventing stockouts.</p>	<p>Tool available online.*            To request the PipeLine CD, contact: John Snow, Inc./DELIVER Project 1616 N. Fort Myer Drive, 11<sup>th</sup> Floor Arlington, VA 22209, USA            E-mail: deliver_pubs@jsi.com            Web site: www.jsi.com</p>	<b>Improving Efficiency</b>	
<p><b>Title:</b> <i>Procuring Single-Use Injection Equipment and Safety Boxes: A Practical Guide for Pharmacists, Physicians, Procurement Staff and Programme Managers</i>  <b>Organization:</b> World Health Organization (WHO)  <b>Description:</b> A guide to help programs procure injection equipment and safety boxes and to develop a monitoring system to ensure quality and reliability.</p>	<p>PDF available online.*            To order print copies, contact: World Health Organization Department of Essential Health Technologies 20 Avenue Appia 1211, Geneva 27, Switzerland            E-mail: eht@who.int            Web site: www.who.int/eht</p>	<p><b>Title:</b> <i>CORE: A Tool for Cost and Revenue Analysis</i>  <b>Organization:</b> Management Sciences for Health, Inc. (MSH)  <b>Description:</b> CORE helps managers analyze and compare a facility's current and projected costs and revenues.</p>	<p>For more information, contact: Elizabeth Lewis, Management Sciences for Health, Inc. 748 Memorial Drive Cambridge, MA 02139, USA            E-mail: core@msh.org            Web site: www.msh.org</p>
<p><b>Title:</b> <i>UNFPA Procurement Services</i>  <b>Organization:</b> United Nations Population Fund (UNFPA)  <b>Description:</b> UNFPA is the largest public sector procurer of contraceptives. UNFPA accepts standard orders of US\$6,000 or more, and also accepts emergency procurement orders.</p>	<p>For more information, contact: UNFPA Procurement Services Section Midtermolen 3, P.O. Box 2530 2100 Copenhagen, Denmark            Web site: www.unfpa.org/procurement/index.htm</p>	<p><b>Title:</b> <i>COPE: A Process for Improving Quality in Health Services</i>  <b>Organization:</b> EngenderHealth  <b>Description:</b> The COPE technique helps supervisors and staff assess the quality of services, identify problems, and recommend and implement solutions.</p>	<p>PDF available online.*            To order print copies, contact: EngenderHealth 440 Ninth Avenue New York, NY 10001, USA            E-mail: info@engenderhealth.org            Web site: www.engenderhealth.org</p>
<b>Safe Injections and Waste Management</b>		<p><b>Title:</b> <i>Maternal and Reproductive Health Costing Model, Version 1.1 (Millennium Project Version)</i>  <b>Organization:</b> UNFPA  <b>Description:</b> A tool to help program managers estimate the personnel, drug, and supply costs associated with providing injectables and other reproductive health services.</p>	<p>Excel spreadsheet available online.*            For more information, contact: Millennium Project One United Nations Plaza 21<sup>st</sup> floor Rm. 2160 New York, NY 10017, USA            E-mail: Eva.Weissman@unfpa.org or Janneke.Saltner@unfpa.org</p>
<p><b>Title:</b> <i>Safe Injection and Waste Management: A Reference for Logistics Advisors</i>  <b>Organization:</b> JSI  <b>Description:</b> A reference guide to help design and support programs for safe injections and waste disposal. Includes assessment tools and additional references.</p>	<p>PDF available online.*            To order print copies, contact: John Snow, Inc./DELIVER Project 1616 N. Fort Myer Drive, 11<sup>th</sup> Floor Arlington, VA 22209, USA            E-mail: deliver_pubs@jsi.com            Web site: www.jsi.com</p>	<p><b>Title:</b> <i>International Drug Price Indicator Guide</i>  <b>Organization:</b> MSH  <b>Description:</b> This guide provides prices from pharmaceutical suppliers and procurement agencies, international development organizations and government donor agencies.</p>	<p>PDF available online.*            To order print copies, contact: Management Sciences for Health, Inc. 748 Memorial Drive Cambridge, MA 02139, USA            Web site: www.msh.org</p>
<p><b>Title:</b> <i>Management of Waste from Injection Activities at the District Level: Guidelines for District Health Managers</i>  <b>Organization:</b> WHO  <b>Description:</b> A guide to help develop an action plan to reduce improper disposal of injection waste.</p>	<p>PDF available online.*            To order print copies, contact: World Health Organization Press 20 Avenue Appia 1211, Geneva 27, Switzerland            E-mail: bookorders@who.int            Web site: www.who.int</p>	<b>Helping Clients Make an Informed Choice</b>	
<p><b>Title:</b> <i>Do No Harm: Injection Safety in the Context of Infection Prevention and Control: Training Tools and Job Aids (forthcoming)</i>  <b>Organization:</b> JSI and WHO  <b>Description:</b> A tool for implementing national injection safety training program strategies. Includes sample handouts and job aids.</p>	<p>For more information, contact: John Snow, Inc./DELIVER Project 1616 N. Fort Myer Drive, 11<sup>th</sup> Floor Arlington, VA 22209, USA            E-mail: deliver_pubs@jsi.com            Web site: www.jsi.com</p>	<p><b>Title:</b> <i>Decision-Making Tool for Family Planning Clients and Providers</i>  <b>Organization:</b> WHO and the INFO Project, Johns Hopkins Bloomberg School of Public Health Center for Communication Programs  <b>Description:</b> An evidence-based counseling resource for providers to help clients make informed choices about family planning.</p>	<p>PDF available online.*            To order print copies, contact: Johns Hopkins Bloomberg School of Public Health Center for Communication Programs 111 Market Place, Suite 310 Baltimore, MD 21202, USA            E-mail: orders@jhuccp.org</p>
<b>Training and Supervision</b>		<p><b>Title:</b> <i>Medical Eligibility Criteria for Contraceptive Use</i>  <b>Organization:</b> WHO  <b>Description:</b> A guide for the safe use of 19 methods for women and men with known medical conditions.</p>	<p>PDF available online.*            To order print copies, contact: Department of Reproductive Health and Research, WHO 1211 Geneva 27, Switzerland            E-mail: rhrpublications@who.int</p>
<p><b>Title:</b> <i>Comprehensive Family Planning and Reproductive Health Training Curriculum Module 6: DMPA Injectable Contraceptive</i>  <b>Organization:</b> Pathfinder International  <b>Description:</b> An adaptable module to train health care workers to provide injectables.</p>	<p>PDF available online.*            To order print copies, contact: Pathfinder International 9 Galen Street, Suite 217 Watertown, MA 02472, USA            E-mail: information@pathfind.org            Web site: www.pathfind.org</p>	<p><b>Title:</b> <i>Family Planning: A Global Handbook for Providers (forthcoming)</i>  <b>Organization:</b> WHO and the INFO Project  <b>Description:</b> A guide for providing family planning methods, including counseling and managing side effects. Also covers prevention and identification of sexually transmitted infections, including HIV, and numerous health topics related to family planning.</p>	<p>To order print copies, contact: Johns Hopkins Bloomberg School of Public Health Center for Communication Programs 111 Market Place, Suite 310 Baltimore, MD 21202, USA            E-mail: orders@jhuccp.org            Web site: www.infoforhealth.org/pubs/globalhandbook/</p>
<p><b>Title:</b> <i>Standards-Based Management and Recognition (SBM-R)—A Field Guide, Facilitator's Handbook, and CD-ROM</i>  <b>Organization:</b> JHPIEGO  <b>Description:</b> A guide for improving performance and the quality of health care services.</p>	<p>For more information, contact: JHPIEGO 1615 Thames Street Baltimore, MD 21231, USA            E-mail: orders@jhpiego.net            Web site: www.jhpiego.org</p>	<b>Communicating About Injectables</b>	
		<p><b>Title:</b> <i>Media/Materials Clearinghouse (MMC)</i>  <b>Organization:</b> Johns Hopkins Bloomberg School of Public Health Center for Communication Programs  <b>Description:</b> A resource for health communication materials from around the world, with over 200 items pertaining to injectables.</p>	<p>For more information, contact: Media/Materials Clearinghouse Johns Hopkins Bloomberg School of Public Health Center for Communication Programs 111 Market Place, Suite 310 Baltimore, MD 21202, USA            Web site: www.m-mc.org/</p>

\*See Web Table 3 for URL. Additional information at <http://populationreports.org/k6/k6tables.shtml>

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This bibliography includes citations to the materials most helpful in the preparation of this report. In the text, reference numbers for these citations appear in italics. The complete bibliography can be found on the internet at: <http://www.populationreports.org/k6/> The links included in this report are up-to-date as of publication.

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