

Maternal and Newborn Health

Key Points for Providers and Clients

- **Wait until the youngest child is at least 2 years old before trying to become pregnant again.** Spacing births is good for the mother's and the baby's health.
- **Make the first antenatal care contact within the first 12 weeks of pregnancy and schedule at least 8 contacts during the pregnancy.**
- **Plan ahead for family planning after delivery.**
- **Prepare for childbirth.** Have a plan for normal delivery and an emergency plan, too.
- **Breastfeed for a healthier baby.**

Health care providers see many women who want to become pregnant, who are pregnant, or who have recently given birth. They also see adolescent girls who are pregnant. Providers can help women plan pregnancies, plan for contraception after delivery, prepare for childbirth, and care for their babies. Attentive care can help women see pregnancy as a positive experience.

Planning Pregnancy

A woman who wants to have a child can use advice about preparing for safe pregnancy and delivery and having a healthy child:

- It is best to wait at least 2 years after giving birth before stopping contraception to become pregnant again.
- At least 3 months before stopping contraception to get pregnant, a woman should begin to eat a healthy, balanced diet, and she should continue doing so throughout pregnancy. A healthy diet includes adequate energy, protein, vitamins, and minerals from green and orange vegetables, meat, fish, beans, nuts, whole grains, and fruit.

Folic acid and iron are particularly important.

- Folic acid is found in such foods as legumes (beans, bean curd, lentils, and peas), citrus fruits, whole grains, and green leafy vegetables. Folic acid tablets are recommended.
- Iron is found in such foods as meat and poultry, fish, green leafy vegetables, and legumes. Iron tablets are recommended.
- If a woman has a sexually transmitted infection (STI) or may have been exposed to an STI, including HIV, treatment can reduce the chances that her child will be born with the infection. If a woman thinks she has been exposed or might be infected, she should seek testing, if available (see also Safer Conception for HIV Serodiscordant Couples, p. 333).



During Pregnancy

The first antenatal care contact should come early in pregnancy, ideally before week 12. For most women, 8 contacts with a health care provider during pregnancy are appropriate. Women with certain health conditions or complications of pregnancy may need more contacts.

Health Promotion and Disease Prevention

- Counsel women about good nutrition. Pregnant women should eat foods that contain iron, folate, vitamin A, calcium, and iodine. They should avoid using tobacco and breathing second-hand smoke, drinking alcohol, and taking drugs (except medications recommended by a health care provider). Pregnant women should take daily oral iron and folic acid supplements if available.
- Encourage women to stay active. Physical activity is healthy for a pregnant woman and helps her avoid gaining too much weight.
- If a woman has had hyperglycemia (high blood sugar) first diagnosed during a pregnancy, it should be classified as either gestational diabetes mellitus, which will resolve for most women after pregnancy, or diabetes mellitus in pregnancy, which will require continuing treatment after pregnancy. High blood sugar increases the chances of adverse outcomes of pregnancy.
- Assess gestational age with an ultrasound scan, if available, before 24 weeks' gestation.

- Help pregnant women protect themselves from infections and to get treatment if infected.
 - If she is at risk for STIs, discuss condom use or abstinence during pregnancy (see Sexually Transmitted Infections, Including HIV, p. 329).
 - Ensure that pregnant women are immunized against tetanus.
 - To prevent or treat anemia where hookworm infection is common, provide treatment (antihelminthic therapy) after the first trimester.
 - Screen pregnant women for bacteriuria (bacteria in the urine) according to program guidelines. Cases with symptoms and cases without symptoms should be treated with antibiotics. Bacteriuria without symptoms increases the chances of preterm birth and low birth weight.
- Help pregnant women protect their babies from infections.
 - Test for syphilis as early in pregnancy as possible, and treat as needed.
 - Offer HIV testing and counseling.
 - Pregnant women are particularly likely to get malaria. Provide insecticide-treated bed nets for malaria prevention and effective malaria treatment to every pregnant woman in areas where malaria is widespread, whether or not malaria is diagnosed (presumptive treatment). Monitor pregnant women for malaria and provide immediate treatment if diagnosed.
- For common symptoms during pregnancy, these treatments may help:
 - Nausea in early pregnancy: ginger, chamomile, vitamin B6, acupuncture
 - Heartburn: avoid large, fatty meals and alcohol; stop smoking; take antacids (at least 2 hours before or after taking iron and folic acid supplements)
 - Leg cramps: magnesium, calcium
 - Low back pain and pelvic pain: regular exercise, physiotherapy, support belts, acupuncture
 - Constipation: wheat bran or other fiber supplements
 - Varicose veins and edema: compression stockings, leg elevation, soaking in water
- To improve continuity and quality of care, each pregnant woman should be given her clinic case notes or records about her pregnancy and asked to take them to any health facility that she visits.

Planning for Family Planning After Delivery

Help pregnant women and new mothers decide how they will avoid pregnancy after childbirth. Ideally, family planning counseling should start during antenatal care.

- Waiting until her baby is at least 2 years old before a woman tries to become pregnant again is best for the baby and good for the mother, too.
- A woman who is not fully or nearly fully breastfeeding is able to become pregnant as soon as 4 to 6 weeks after childbirth.
- A woman who is fully or nearly fully breastfeeding is able to become pregnant as soon as 6 months postpartum (see Lactational Amenorrhea Method, p. 309).
- For maximum protection, a woman should not wait until the return of monthly bleeding to start a contraceptive method. Instead, she should start as soon as guidance allows (see Earliest Time That a Woman Can Start a Family Planning Method After Childbirth, p. 351).

Preparing for Childbirth and Complications

Potentially life-threatening complications develop in about 15% of pregnancies, and all of these women need immediate care. Over 70% of maternal deaths are due to complications of pregnancy and childbirth, such as hemorrhage, hypertension, infection, and abortion. Most complications cannot be predicted, but providers can help women and their families be prepared for them in case they happen.

- Help women arrange for skilled attendance at birth, and ensure that they know how to contact the skilled birth attendant at the first signs of labor.
- Explain danger signs during pregnancy and childbirth to women and their families (see next page).
- Help the woman and her family plan how she will reach emergency care if complications arise: Where will she go? Who will take her there? What transport will they use? How will she pay for medical help? Are there people ready to donate blood?



Health facilities caring for pregnant women should have providers who are trained to:

- Monitor labor
- Care for the newborn at birth and during the first week

- Manage pre-eclampsia and eclampsia and their complications
- Manage difficult labor
- Manage postpartum hemorrhage, the leading cause of preventable maternal mortality
- Perform newborn resuscitation
- Manage preterm labor and care for preterm and small babies
- Manage maternal and newborn infections
- Communicate effectively. Providers need to be supportive, respectful, and sensitive to the needs of the pregnant woman and her family. Women should feel involved and informed so that they can make informed choices about their care.

Facilities must have a referral system in place for complications that need to be handled at a higher-level facility.

Danger Signs During Pregnancy and Childbirth

If any of these signs appears, the family should follow their emergency plan and get the woman to emergency care immediately.

- Fever (38°C/101°F or higher)
- Foul-smelling discharge from vagina
- Severe headache/blurred vision
- Decreased or no fetal movements
- Green or brown fluid leaking from vagina
- High blood pressure
- Vaginal bleeding
- Difficulty breathing
- Convulsions, fainting
- Severe abdominal pain

After Childbirth

- Mothers and newborns should receive routine postnatal care. Four routine postpartum contacts are recommended:
 1. In the facility for the first 24 hours or at home within the first 24 hours
 2. On day 3
 3. In days 7 through 14
 4. At 6 weeks
- Coordinate family planning visits with an infant's immunization schedule.
- Optimal breastfeeding offers triple value: important improvements in child survival and health, better health for mothers, and temporary contraception (see Lactational Amenorrhea Method, p. 309). Still, any breastfeeding is better than none (except if a woman has HIV; see Preventing Mother-to-Child Transmission of HIV, p. 352).

Guidelines for Best Breastfeeding

1. Begin breastfeeding the newborn as soon as possible—within 1 hour after delivery

- This stimulates uterine contractions that may help prevent heavy bleeding.
- It helps the infant to establish suckling early, which stimulates milk production.
- Colostrum, the yellowish milk produced in the first days after childbirth, provides important nutrients for the child and transfers immunities from mother to child.

2. Fully or nearly fully breastfeed for 6 months

- Mother's milk alone can fully nourish a baby for the first 6 months of life.
- Avoids the risks of feeding the baby contaminated liquids or foods.
- Full breastfeeding provides contraceptive benefits for the first 6 months as long as monthly bleeding has not returned (see Lactational Amenorrhea Method, p. 309).

3. At 6 months, add other foods to breastfeeding

- After 6 months babies need a variety of foods in addition to breast milk.
- At each feeding breastfeed before giving other foods.
- Breastfeeding can and should continue through the child's second year or longer.



Earliest Time That a Woman Can Start a Family Planning Method After Childbirth

Family Planning Method	Fully or Nearly Fully Breastfeeding	Partially Breastfeeding or Not Breastfeeding
Lactational Amenorrhea Method	Immediately	(Not applicable)
Vasectomy	Immediately or during partner's pregnancy [‡]	
Male or female condoms Spermicides	Immediately	
Progestin-only pills Implants	Immediately	
Copper-bearing IUD Levonorgestrel IUD	Within 48 hours. Otherwise wait 4 weeks.	
Female sterilization	Within 7 days. Otherwise wait 6 weeks.	
Progesterone-releasing vaginal ring	4–9 weeks postpartum	If breastfeeding at least 4 times a day, start at 4–9 weeks postpartum Not breastfeeding: Does not apply
Diaphragm	Can be fitted 6 weeks after childbirth	
Fertility awareness methods	Start when normal secretions have returned (for symptoms-based methods) or she has had 3 regular menstrual cycles (for calendar-based methods). This will be later for breastfeeding women than for women who are not breastfeeding.	

[‡] If a man has a vasectomy during the first 6 months of his partner's pregnancy, it will be effective by the time she delivers her baby.

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Family Planning Method	Fully or Nearly Fully Breastfeeding	Partially Breastfeeding or Not Breastfeeding
Progestin-only injectables	6 weeks after childbirth [§]	Immediately if not breastfeeding [§] 6 weeks after childbirth if partially breastfeeding [§]
Combined oral contraceptives Monthly injectables Combined patch Combined vaginal ring	6 months after childbirth [§]	21 days after childbirth if not breastfeeding [§] 6 weeks after childbirth if partially breastfeeding [§]

[§] Earlier use is not usually recommended unless other, more appropriate methods are not available or not acceptable.

Preventing Mother-to-Child Transmission of HIV

A woman living with HIV can pass HIV to her child during pregnancy, delivery, or breastfeeding. Treatment can greatly reduce the chances of this.

Lifelong antiretroviral therapy (ART) is recommended for all adults and children from the time their HIV-positive status is known. A woman who started ART before pregnancy or when tested during pregnancy greatly reduces the chances that her baby will be infected in the uterus or during delivery. ART for the mother also greatly reduces the chances of passing HIV to her infant through breast milk.

Also, the newborns of mothers living with HIV should receive 2 anti-retroviral drugs (ARVs) for the first 6 weeks of life. This further reduces the chances of HIV passing from mother to child in the period around birth.

How can family planning providers help prevent mother-to-child transmission of HIV?

- *Help women—and men—avoid HIV infection* (see Sexually Transmitted Infections, Including HIV, Avoiding Sexually Transmitted Infections, p. 336). Women and men at high risk of HIV infection can take PrEP, pre-exposure prophylaxis, a daily oral treatment with ARVs.
- *Prevent unintended pregnancies*: Help women who do not want a child to choose a contraceptive method that they can use effectively.

- *Offer HIV counseling and testing:* In all settings offer counseling and testing in family planning facilities to all pregnant women and to the partners of women with HIV. Where HIV is common, offer testing to all women. Testing in family planning facilities can be helpful because a woman's HIV status might affect her choice of a family planning method. If testing in family planning facilities is not possible, refer clients to an HIV testing service or offer self-testing so that they can learn their HIV status.
- *Refer for prevention of HIV transmission:* Refer women with HIV who are pregnant, or who want to become pregnant, to services for prevention of mother-to-child transmission, if available. If a couple wants to have a child, and one partner has HIV while the other does not, they can take steps to reduce the chances of passing HIV while trying for conception (see Sexually Transmitted Infections, Including HIV, Safer Conception for HIV Serodiscordant Couples, p. 333).
- *Promote and support appropriate infant feeding:* In each country national authorities decide which of 2 infant feeding practices should be promoted to pregnant women and mothers living with HIV and that all health facilities should support. The 2 practices are either (1) breastfeeding while mothers receive ART or (2) avoiding all breastfeeding (while mothers still receive ART). Countries decide which practice will lead to more children surviving free of HIV, depending on conditions in the country.

Where national authorities have decided to promote and support breastfeeding and ART for mothers with HIV:

- Counsel all women, including women with HIV, that breastfeeding, and especially early and exclusive breastfeeding, is the best way to promote the child's survival.
- Mothers living with HIV and their infants should receive appropriate ART, and mothers should exclusively breastfeed their infants for the first 6 months of life, then introduce appropriate complementary foods and continue breastfeeding. All children need complementary foods from 6 months of age.
- Mothers living with HIV should breastfeed for at least 12 months and may continue breastfeeding for up to 24 months or more (like other women) while being fully supported to keep taking ART.
- Breastfeeding should stop only when a nutritionally adequate and safe diet without breast milk can be provided.

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Preventing Mother-to-Child Transmission of HIV (continued)

- When mothers decide to stop breastfeeding, they should stop gradually within one month, and infants should be given safe and adequate replacement feeds to enable normal growth and development. Stopping breastfeeding abruptly is not advised.
- Even when ART is not available, breastfeeding (exclusive breastfeeding in the first 6 months of life and continued breastfeeding for the first 12 months of life) may still give infants born to mothers living with HIV a greater chance of survival while avoiding HIV infection than not breastfeeding at all.
- If a woman is temporarily unable to breastfeed—for example, she or the infant is sick, she is weaning, or her supply of ARVs has run out—she may express and heat-treat breast milk to destroy the HIV before feeding it to the infant. Milk should be heated to the boiling point in a small pot and then cooled by letting the milk stand or by placing the pot in a container of cool water. This approach should be used only short-term, not throughout breastfeeding.
- Women with HIV who are breastfeeding need support to maintain their own nutritional status and keep their breasts healthy. Infection of the milk ducts in the breast (mastitis), a pocket of pus under the skin (breast abscess), and cracked nipples increase the risk of HIV transmission. If a problem does occur, prompt and appropriate care is important (see Sore or cracked nipples, p. 356).

Where national authorities have decided to recommend that mothers living with HIV should avoid all breastfeeding even where ART is provided:

- Mothers living with HIV should receive skilled counseling to ensure that they provide a replacement food that is safe and adequate and is safely prepared, stored, and given to their infant.
 - For infants less than 6 months of age, the recommended alternative to breastfeeding is commercial infant formula, as long as home conditions outlined below are met. Home-modified animal milk is not recommended as a replacement food in the first 6 months of life.
- For infants more than 6 months of age, alternatives to breastfeeding include:
 - Commercial infant formula milk, as long as home conditions outlined on the next page are met

- Animal milk (boiled for infants under 12 months), as part of a diet providing adequate micronutrients. Children should be fed meals, including milk-only feeds, other foods, and combination of milk feeds and other foods, 4 or 5 times per day.
- All children need complementary foods from 6 months of age.
- Mothers living with HIV should consider replacement feeding only if all the following conditions are met:
 - safe water and sanitation are ensured in the household and community; and
 - the mother or caregiver can reliably provide sufficient infant formula to support the infant’s normal growth and development; and
 - the mother or caregiver can prepare it cleanly and frequently enough so that it is safe enough and carries a low risk of diarrhea and malnutrition; and
 - the mother or caregiver can give the replacement feeding exclusively in the first 6 months; and
 - the family supports this practice; and
 - the mother or caregiver can obtain comprehensive child health services.
- If infants and young children are known to be living with HIV, mothers should be strongly encouraged to exclusively breastfeed for the first 6 months of life and continue breastfeeding up to 2 years or beyond.

Managing Any Breastfeeding Problems

If a client reports any of these common problems, listen to her concerns and give advice and support. Make sure she understands the advice and agrees.

Baby is not getting enough milk

- Reassure the woman that most women can produce enough breast milk to feed their babies.
- If the newborn is gaining more than 500 grams a month, weighs more than birth weight at 2 weeks, or urinates at least 6 times a day, reassure her that her baby is getting enough breast milk.

- Tell her to breastfeed her newborn about every 2 hours to increase milk supply.
- Recommend that she reduce any supplemental foods and/or liquids if the baby is less than 6 months of age.

Sore breasts

- If her breasts are full, tight, and painful, then she may have engorged breasts. If one breast has tender lumps, then she may have blocked ducts. Engorged breasts or blocked ducts may progress to red and tender infected breasts. Treat breast infection with antibiotics according to clinic guidelines. To aid healing, advise her to:
 - Continue to breastfeed often
 - Massage her breasts before and during breastfeeding
 - Apply heat or a warm compress to breasts
 - Try different breastfeeding positions
 - Ensure that the infant attaches properly to the breast
 - Express some milk before breastfeeding

Sore or cracked nipples

- If her nipples are cracked, she can continue breastfeeding. Assure her that they will heal with time.
- To aid healing, advise her to:
 - Apply drops of breast milk to the nipples after breastfeeding and allow to air-dry.
 - After feeding, use a finger to break suction first before removing the baby from the breast.
 - Do not wait until the breast is full to breastfeed. If full, express some milk first.
- Teach her about proper attachment and how to check for signs that the baby is not attaching properly.
- Tell her to clean her nipples with only water only once a day and to avoid soaps and alcohol-based solutions.
- Examine her nipples and the baby's mouth and buttocks for signs of fungal infection (thrush).