





# What Works:

A Policy and Program Guide to the Evidence on Postabortion Care

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This module is one component of the *Postabortion Care Global Resources: A Guide for Program Design, Implementation, and Evaluation,* which also contains policies, guidelines, and communication materials related to PAC.



## LIST OF ABBREVIATIONS

ANC	Antenatal Care
AIDS	Acquired Immune Deficiency Syndrome
CHW	Community Health Worker
CIDA	Canadian International Development Agency
CI	Coitus Interruptus (withdrawal)
CLADEM	Latin American and Caribbean Committee for the Defense of
	Women's Rights
CRLP	Center for Reproductive Law and Policy
D&C	Dilation and Curettage
DHS	Demographic and Health Survey
DMPA	Depot-medroxyprogesterone acetate
EmOC	Emergency Obstetric Care
EOC	Essential Obstetric Care
EVA	Electrical Vacuum Aspiration
FHI	Family Health International
FP/RH	Family Planning/Reproductive Health
GBV	Gender Based Violence
hCG	Human Chorionic Gonadotropin
HIV	Human Immunodeficiency Virus
HIV-1	Human Immunodeficiency Virus (Subtype, non-B)
IARC	International Agency for Research on Cancer
IMSS	Mexican Institute of Social Security
IOM	Institute of Medicine
IUD	Intrauterine Device
IUFD	Intrauterine Fetal Demise/Death
IUGR	Intrauterine Growth Retardation
JHPIEGO	A non-profit organization affiliated with Johns Hopkins University
MCH	Maternal and Child Health
MMR	Maternal Mortality Ratio/Rate
MOH	Ministry of Health
MTCT	Mother-to-Child Transmission of HIV/AIDS
MVA	Manual Vacuum Aspiration
OB/GYN	Obstetrics and Gynecology
OC	Oral contraception
OR	Operations Research
PAC	Postabortion Care
PPH	Post-Partum Hemorrhage
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
TBA	Traditional Birth Attendant

Sjs

UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations Children's Education Fund
USAID	United States Agency for International Development
VCT	Voluntary Counseling and Testing
VVF	Vesico-Vaginal Fistula
WHO	World Health Organization



## INTRODUCTION TO THE SERIES OF MODULES IN THE GUIDE

Policymakers and program planners are faced with a wide array of evidence when designing reproductive health interventions. The current push for "best practices" is an attempt to evaluate the evidence on programs and interventions and highlight those that are most effective. With scarce resources for reproductive health and growing demand for services, program priorities must be based on effective interventions. Most scientific and biomedical research on reproductive health interventions has been written for scientists; little has been written specifically for policymakers. This guide is intended for policymakers and program planners who are designing reproductive health interventions and who are deciding among priority interventions. Organizations that provide assistance to programs worldwide may also benefit from this guide.

This guide, *What Works: A Policy and Program Guide to the Evidence on Postabortion Care*, provides a summary of the evidence that documents the effectiveness of various interventions. This guide will be useful to those developing guidelines for best practices.

The modules in this guide provide information complementary to the biomedical information from clinical studies in the WHO Reproductive Health Library, based on the Cochrane Collaboration. <sup>1</sup> While the Cochrane Collaboration reviews provide meta-analyses of randomized clinical trials, there are many health problems in developing countries that are not amenable to investigation using this methodology. This guide also adds to the ongoing work on best practices in reproductive health.

This guide on PAC, in contrast to the companion volume on Safe Motherhood (Gay et al., 2003), has drawn on unpublished reports to supplement the research published in peer-reviewed publications because of the limited amount of published literature on PAC. Biomedical information is included insofar as it is relevant to programmatic considerations.

Furthermore, the modules in this guide categorize these interventions by those that are effective, those that may be on the cutting edge but for which sufficient evidence has not yet been gathered, and common interventions that are not effective. This guide includes policy and program issues related to reproductive health. Most evidence cited in the guide comes from studies in developing countries; however, when such research was not available, evidence from developed countries was included.

In contrast to the Cochrane Collaboration, the authors have not reanalyzed the data on interventions, rated the grades of evidence, or presented an analysis of the implications of the data. For some interventions, many large-scale studies including some randomized controlled trials are listed; for other interventions, supporting research is

<sup>1</sup> The Cochrane Collaboration, an international resource for evidence-based medicine in all specialties, is a continuously updated review of randomized controlled trials (PANOS, 2001). Information on the Cochrane Collaboration and the related WHO Reproductive Health Library is available at www.cochrane.org or www.update-software.com.



available from only one study using a small sample size. With review articles, the original studies are cited as reported in the review. An attempt has been made to use the original studies and primary sources, but where the original could not be located, the authors relied on review articles. Evidence from review articles is clearly noted (e.g., x cited in y).

Gray (1997) lists the five strengths of evidence in research:

Туре	Strength of evidence
Ι	Strong evidence from at least one systematic review of multiplewell designed, randomized controlled trials.
II	Strong evidence from at least one properly designed, randomized controlled trial of appropriate size.
III	Evidence from well-designed trials without randomization, single group pre-post,cohort, time series, or matched case- control studies.
IV	Evidence from well-designed, non-experimental studies from more than one center or research group.
V	Opinions of respected authorities, based on clinical evidence, descriptive studies, or reports of expert committees.

The evidence available for this guide primarily falls in strength level III; however, some

evidence that falls in strength levels I, II, IV, and V is included. The evidence presented in the guide represents the best available research on reproductive health interventions the authors were able to gather at the time each module was published. In the "Summary of Evidence" column, the authors have noted whether the preponderance of evidence is strong or whether the issue related to PAC needs more evidence (e.g., "needs more research"). The "Gray Type" column refers to Gray Scale's strength of evidence for each particular study.

This PAC guide attempts to address the issues of cost and sustainability. Unlike the companion volume on Safe Motherhood (Gay et al., 2003), which did not cover the issues of cost, equity, and sustainability, the data on PAC provide some clear-cut cost data. PAC studies, which provide cost data, are included in this guide.

This module is organized as follows:

- Introduction summarizing critical issues.
- Effective interventions, presented in table format, with the summary of the evidence related to the interventions in the left hand column and details of the relevant research that supports the intervention or particular policy direction in the right hand column. The interventions are listed in the table of contents of the module and are organized by the three core components of the new USAID PAC strategy: 1) emergency treatment; 2) family planning counseling and service delivery with provision of selected reproductive health services (STI evaluation and treatment; and HIV counseling and/or referral for HIV testing); and 3) community empowerment via community awareness, and mobilization.



- Policy and program issues (such as access to care and quality of care).
- Web-based resources for program design.
- References and clinical manuals.
- Annotated index of interventions.

It is important to note that high-quality PAC is a package or constellation of services. This package includes a reorganization of services; infection control practices; patient information and informed consent for emergency treatment and pain management. Patient information and counseling related to possible complications, follow-up care at home; family planning counseling and services, information on return to fertility; and information and services related to STI/ HIV/AIDS is also a part of the package of services. Community empowerment via awareness and mobilization to address these issues is new to the postabortion care package so fewer interventions have included these components.

References to a number of important PAC interventions and studies are repeated in a number of sections of this module for example in the emergency treatment, counseling, training, and policy sections.

Regular updates will be posted to the online document available at www.postabortioncare.org.

In addition, a CD-ROM version of the guide will be made available.



## EXECUTIVE SUMMARY

This guide reviews the research related to interventions in postabortion care. Postabortion care (PAC) has three core components:

a) emergency treatment for complications spontaneous or related to induced abortions; b) family planning and birth spacing counseling and provision of family planning services with provision of selected reproductive health services (STI evaluation and treatment, HIV counseling and referral/ provision of HIV testing) to prevent further mistimed or unplanned pregnancies that may result in repeat induced abortions; and c) community empowerment through community awareness and mobilization. PAC is an appropriate intervention for all countries, regardless of the country's legal status regarding abortion. Numerous studies documented the following key findings:

#### **Emergency care**

Both vacuum aspiration (VA) and sharp curettage are effective surgical methods for emergency treatment in PAC. Manual vacuum aspiration (MVA), the most commonly used method of VA in developing countries, costs less than sharp curettage primarily due to the costs associated with general anesthesia, overhead costs associated with extended hospital stay, use of the emergency room, the surgical obstetrics suite, and the gynecology ward for triage, recovery and discharge; increased personnel costs; cost of medications which may include anesthesia; medication; blood transfusion; pain contraceptives; discharge medications; cost of supplies; and cost of services from other departments.

- It is not necessary to train all providers in VA in order to include the other components of PAC. Programs that provide sharp curettage should give the same attention to patient information, counseling, and family planning methods for clients undergoing sharp curettage prior to hospital discharge—rather than waiting until VA (usually MVA) is available at health facilities.
- Pain medication is needed for MVA even though it is provided under local anesthetic.
- Various cadres of providers have been successfully trained to provide MVA.

# Familyplanning and STI/HIV counseling and services

- High-quality family planning and reproductive healthcare can reduce the number of unintended pregnancies and can result in a reduction of women who seek abortions for unintended pregnancies (Marston and Cleland, 2003 cited in Gillespie, 2004).
- It is critical that women who access PAC receive information and contraceptive methods to help them and their partners plan their pregnancies.
- It is critical that PAC be linked to other reproductive health interventions and that guidelines for PAC be well disseminated (Farrell, 2004; FHI, 2004).



- Women and men need to know that immediate use contraception upon resumption of sexual relations is critical to averting future mistimed or unplanned pregnancies.
- Misoprostol administered either orally or vaginally, has been studied extensively as an alternative to surgical evacuation of the uterus. Though somewhat less effective compared with VA or sharp curettage, it may help further extend services to lower level health centers so long as clients are adequately monitored and referral links are in place should treatment failure occur.
- Providing family planning counseling and services at the same site as emergency treatment can increase the number of women leaving the facility with a family planning method.

# Community awareness, mobilization and empowerment

- Women, when specifically asked, often want their male partners to be counseled concerning PAC.
- Community health workers (CHWs) and volunteer health workers can identify pregnant women; provide information to pregnant women and encourage them to use hospital care in cases of emergency; educate the community on risk factors and danger signs during pregnancy; and provide information about contraception. CHWs can dispense selected contraceptive methods. However, more research is needed on how best to involve CHWs in PAC.

#### Policy and program issues

- Policy initiatives to allow midwives to perform manual vacuum aspiration can increase access to all components of postabortion care. Providing vacuum aspiration at the primary care level also increases geographic access to emergency treatment and other PAC services.
- Training providers in counseling can increase the satisfaction of PAC patients with emergency treatment, family planning counseling, and FP services and can increase the number of women who choose a contraceptive method following emergency treatment. Training providers can also improve the quality of PAC care.
- Reducing HIV transmission and the incidence of malaria among pregnant women, as well as reducing exposure to environmental contamination and physical violence, can reduce the incidence of miscarriage.
- Reorganizing PAC services, implementing policy changes, and disseminating revised protocols to support the reorganization of services can result in cost savings.

Many interventions that show promise for PAC have not been documented with studies, particularly in developing country settings. In addition, there are numerous issues in postabortion care which must be addressed to reduce mortality and morbidity, yet for which no effective interventions have been devised or documented. Some of these issues are:

- Protocols for the provision of pain medication are needed.
- Strategies must be developed to empower and mobilize communities



so that women, their partners, and their communities are aware of unsafe abortion and will know the danger signs of incomplete abortion or miscarriage. Furthermore, access to PAC, particularly in settings where abortion is illegal and unsafe, remains a problem.

- Stigma and discrimination against HIVpositive women or women with AIDS needing PAC must be decreased, and messages need to be incorporated on how to use condoms to prevent HIV transmission for women who access PAC services.
- Although youth are also at risk of needing PAC, few interventions address youth specifically.
- Exactly what pre-service and in-service training will be most effective for PAC remains to be studied and documented.
- PAC can be scaled up to a national level, but much work remains to expand access to all components of PAC around the world, regardless of methodology for emergency treatment (sharp curettage, VA, or medical management).



## NOTE ON THE UNITED STATES GOVERNMENT'S POSITION ON POSTABORTION CARE

#### Statement of Support for Postabortion Care

The President's clear intention is that any restrictions (on family planning assistance) do not limit organizations from treating injuries or illnesses caused by legal or illegal abortions, for example, postabortion care.

White House statement on the Mexico City Policy, January 22, 2001

USAID family planning assistance is subject to a number of abortion-related restrictions, including those outlined in the Mexico City Policy. These restrictions do not prohibit USAID assistance for postabortion care. A White House press release announcing President Bush's restoration of the Mexico City Policy on January 22, 2001, indicated that "[t]he President's clear intention is that any restrictions do not limit organizations from treating injuries or illnesses caused by legal or illegal abortions, for example, postabortion care."

USAID FP/RH funds may be used to support postabortion care activities regardless of whether the abortion was legally or illegally obtained, although no USAID funds may be used to purchase manual vacuum aspiration kits for any purpose. Foreign NGOs may also perform and promote postabortion care without affecting their eligibility to receive USAID assistance for family planning (Source: USAID Guidance on the Definition and Use of the Child Survival and Health Program Funds and the Global HIV/AIDS Initiative Account, FY 2004 Update, dated July 22, 2004). The U.S. government does not provide support for induced abortions by MVA or any other method. This module, however, includes some research on induced abortion funded by sources other than the U.S. government. The inclusion of this research attempts only to present the most comprehensive and helpful review of research on postabortion care. Reference to such research does not affect the government's position against induced abortion in any way.



## **INTRODUCTION TO POSTABORTION CARE**

#### **International Agreement on PAC**

Abortion complications are among the major reasons women seek emergency obstetric care. Postabortion care (PAC) consists of emergency treatment for complications related to spontaneous or induced abortions, family planning and birth spacing counseling, and provision of family planning methods for the prevention of further mistimed or unplanned pregnancies that may result in repeat induced abortions. PAC also includes services such as evaluation for sexually transmitted infections, including HIV/ AIDS.

PAC has become more of a focus in reproductive health programs during the past decade, particularly since the 1994 International Conference on Population and Development (ICPD), when nearly 180 countries agreed that no matter what an individual country's official position on the legality of abortion:

"In all cases, women should have access to quality services for management of complications arising from abortion. Postabortion counseling, education and family planning services should be offered promptly, which will help to avoid repeat abortions" (ICPD, 1994 paragraph 8.25).

"Improving PAC is an important way to help address the problem of unsafe abortion, reduce maternal morbidity and mortality, and improve women's reproductive health. PAC can be implemented in any country, no matter how prohibitive the law against abortion, as it deals with treating a woman after she had experienced an induced or spontaneous abortion" (Solo, 2000: 45). Moreover, quality PAC is a relatively simple, effective, and costefficient way to lower maternal death rates (AED, 2003: 21).

#### The Magnitude of the Problem

Worldwide, the World Health Organization (WHO) estimates that 67,000 women, mostly in developing countries, die each year from untreated or poorly treated abortion complications. This number, which likely understates the true statistics, represents 13 percent of all pregnancy-related deaths and is the tip of the iceberg, as many more women live with resulting morbidities including chronic pain, chronic pelvic inflammatory disease, and infertility as a result of incomplete abortion. Serious social problems are also often caused or exacerbated by these illnesses. Most deaths and disabilities resulting from abortion complications are preventable (AGI, 1999; WHO, 1998; WHO, 2003 cited in Corbett and Turner, 2003).

#### The Health System and PAC

Many national health services dedicate a high percentage of beds in third and second level facilities to accommodate the large number of women who require postabortion emergency treatment. In sub-Saharan Africa, up to 50 percent of gynecological beds are occupied by patients with abortion complications (UNICEF, 1997 cited in Dabash, 2003). Incomplete abortion is the most prevalent abortion-related complication treated in Bolivian hospitals. Health officials estimate that 47 to over 50 percent of hospital beds on gynecology wards in secondary and tertiary level hospitals are occupied by



women admitted for abortion complications (Billings et al., 2003b). In some countries, more than half of all obstetric/gynecologic expenditures in public hospitals are incurred on the treatment of women with abortion complications (Rance, 1994; World Bank, 1994). The complications bringing women to the attention of health services include "sepsis, hemorrhage, genital and abdominal trauma, tetanus, perforated uterus, and poisoning from abortifacient medicines" (Institute of Medicine, 2003: 49).

One in four women who seek abortion lives in countries where abortion is forbidden or allowed only to save a woman's life (Rahman et al., 1998 cited in Corbett and Turner, 2003). Where abortion is legally restricted or not accessible, or even if legal, many women with unwanted pregnancies that result from lack of use of contraception or from contraceptive failure, resort to clandestine and often unsafe abortion, and in many cases suffer complications that require emergency medical care (Huntington et al., 1998).

"The pool of women seeking postabortion care is diverse, but all have urgent psychological and physiological needs. All are bleeding. Those who have induced the abortion may be fearful of the consequences of being discovered and eager to ensure that their unwanted pregnancy has been terminated. Those who have miscarriedespecially those who desired the pregnancyare experiencing the grief of pregnancy loss" (Abdel-Tawab et al., 2002: 191-192). Interviews with postabortion patients during a project conducted in Egypt revealed that the most salient issue confronting them was "physical survival" (Abdel-Tawab et al., 2002).

Women in countries in which abortion is legal, such as India and Russia, also require access to PAC (Johnson et al., 2003). Even where abortion is legal and performed in safe facilities, some women will have complications. A study in Perm, Russia, of women who had facility-based abortions, found that 17 percent of the women reported having to return to the facility for a postabortion complication and 7 percent were hospitalized (Savelieva et al., 2003). Women who suffer from spontaneous abortion or miscarriage-an estimated 15 percent of pregnant women-may also have complications that require medical follow up (Laferla, 1986 and Hammerslogh, 1992 cited in Nielson, 1997).

#### The PAC Consortium

In 1993, the PAC Consortium was established with representation of AVSC International (now EngenderHealth), Ipas, IPPF, the JHPIEGO Corporation, and Pathfinder International. The Consortium continues to function as a 15-plus agency networking group.

In 1994, Ipas developed the original postabortion care model, *Essential Elements of PAC*, which was subsequently adopted by USAID and the PAC Consortium. This innovative model emphasized the need not only to provide for women's emergency needs, but also to help women avoid further mistimed or unplanned pregnancies and other reproductive health problems. The PAC model, as it became known, listed three essential elements:

- Emergency treatment for complications of spontaneous or induced abortion;
- Postabortion family planning counseling and services; and



• Linkages between emergency care and other reproductive health services, for example, management of STIs.

To transform the largely medical PAC model to a public health model, the PAC Consortium added two elements in 2002, (Postabortion Care Consortium Community Task Force, 2002):

- Counseling tailored to each woman's emotional and physical needs; and
- Community and service provider partnerships.

# U.S. Government and USAID Position on PAC

Currently, "over half of the developing world's population lives in countries in which at least some PAC activity has been initiated" (Cobb et al., 2001: 13). USAID, which has supported PAC activities in over 30 countries since the early 1990s, specifically identifies postabortion care as a priority in reproductive health (EngenderHealth and Ipas, 2001). Support of postabortion care programs by the U.S. government was evidenced in January 2001 by a statement made by the White House Press Secretary on the restoration of the Mexico City Policy: "...the President's clear intention is that any restrictions do not limit organizations from treating illnesses caused by legal or illegal, abortions, for example, postabortion care" (see http://www. whitehouse.gov/news/releases/20010123. html). This position is allowed under previous policies that have had wide congressional support.

Support of the administration was further emphasized by the Assistant Administrator of USAID in an email that was sent globally to all USAID population, health, and nutrition officers dated September 10, 2001. The memo stated "The U.S. Agency for International Development's (USAID) Population, Health and Nutrition Center places high priority on preventing abortions through the use of family planning, saving the lives of women who suffer complications arising from unsafe abortion, and linking those women to voluntary family planning and other reproductive health services that will help prevent subsequent abortions. Postabortion care should be a key component of both our Safe Motherhood and family planning programs"

(USAID. 2003. Guidance on the Definition and Use of the Child Survival and Health Program Funds, FY 2003 Update—Final, May 23).

In 2003, building on an evaluation of its global PAC program in 2001 (Cobb et al., 2001), USAID revised its model for postabortion care and developed a five-year strategic plan results framework and indicators for PAC. These documents serve as the framework for USAID's efforts to reduce maternal mortality, morbidity, and repeat abortions by supporting improved access to and quality of PAC services over the next few years. USAID adopted the principles proposed by the PAC Consortium in Essential Elements of Postabortion Care and maintained a streamlined model via integrating the community and service delivery partnerships component into its three core components while maintaining counseling tailored to each woman's emotional and physical needs as an integral part of all its quality postabortion care services. The three core components of the USAID PAC Strategy (USAID, 2003) are:

• Emergency treatment for complications of spontaneous or induced abortion;



- Family planning counseling and service provision, STI evaluation and treatment, and HIV counseling and/or referral for HIV testing; and
- Community empowerment through community awareness and mobilization.

#### **International Donors and PAC**

A number of other donors, including the Department for International Development of the UK and UNFPA, support PAC. Numerous countries have come to recognize the contribution that PAC can make to saving women's lives. For example, the government of Kenya's 1997 reproductive health guidelines and standards for service providers states, "the prompt treatment of postabortion complications is an important part of health care that should be available at every district-level hospital" (cited in Cobb et al., 2001: 7).

Addressing the needs of women who are experiencing abortion complications is a clear public health mandate; women should have all needed emergency care to prevent death and disability, and the information and services they need in order to make healthy decisions for themselves and their families.

#### The "What Works-PAC" Module

This document describes what is known about PAC interventions and addresses lessons learned by multiple studies largely conducted since 1990. It includes peer reviewed publications, and gray literature where appropriate, and is organized in sections describing which interventions have given positive results, which have not been shown to be effective, as well as common practices that are unnecessary or can be harmful. The interventions that have provided evidence on PAC services are subdivided into the three components of the USAID PAC Strategy.

The module also identifies knowledge gaps for which there is a need for further PAC research, including care needs of HIV positive women, refugee women and women who are subject to trafficking and such issues as demand generation and the community level contributions for PAC services. For the evidence related to each intervention, the Gray Type strength of evidence (I to V) is listed and for each intervention, a summary of the strength of the evidence is included.

Since 1994, PAC programs have been initiated in at least 40 countries around the world, 30 of which receive USAID funds (Cobb et al., 2001). This module will assist program managers and policymakers in using evidence to expand and improve quality of and access to their programs. In addition, it may become an important resource in countries which have not yet introduced PAC programs.



# I. EMERGENCY TREATMENT



## I. EMERGENCY TREATMENT

#### Introduction

The most frequent need for women seeking postabortion care (PAC) is treatment for complications related to miscarriage or induced abortion. Most women who seek care for postabortion complications present at facilities with vaginal bleeding. Bleeding is usually caused by products of conception still attached to the uterine lining or incomplete abortion. The solution to this complication is to evacuate or remove these remaining products from the uterus. Risk of death is significantly elevated for women needing PAC who do not undergo "treatment shortly after hospital admission" (Goyaux et al., 2001: 570).

The principal methods used today to evacuate the uterine cavity are dilation and curettage, also referred to as sharp curettage or D&C, and vacuum aspiration (VA). The choice of which method to use in any particular site or case depends on established protocols, the duration of the gestation, and availability of equipment and supplies and trained staff. However, the WHO has endorsed vacuum aspiration as the safest technique for uterine evacuation. Most recently, the WHO has advised that the preferred surgical technique for abortion up to 12 weeks of pregnancy is vacuum aspiration, and that "Where sharp curettage is currently practiced, all possible efforts should be made to replace sharp curettage with vacuum aspiration to improve the safety and quality of care. Additionally, at sites where sharp curettage continues to be used, managers must ensure that proper pain management procedures are followed, and that staff are well trained and receive adequate supervised clinical practice to maintain their skills (WHO, 2003: 34).

Sharp curettage is usually performed in an operating room by a surgically trained provider (usually a doctor/surgeon) with general anesthesia. It consists of dilating the cervical opening with graduated metal instruments and emptying the uterus with a spoon-shaped metal instrument (curette).

VA can be performed in an outpatient setting in a clinic or emergency room with the appropriate conditions, by a lower level, well trained provider using pre-evacuation analgesia and local anesthesia. Due to this, VA usually results in a shorter facility length of stay, which, in turn, lowers costs to the system and the client.

There are two methods to perform VA: electric vacuum aspiration (EVA) and manual vacuum aspiration (MVA). In both methods, the cervix is dilated either with plastic or metal instruments and the uterus is evacuated using a plastic cannula, applying sufficient vacuum to aspirate all the remaining pregnancy products from the uterus (Solter et al., 2000).

a) EVA uses an electric pump.

b) MVA uses a large syringe which can produce a sufficient vacuum through a series of valves. The important benefits of MVA are that electricity is not needed, the equipment is portable, and it is easily processed for reuse. Also, there is less risk of hemorrhage, infection, and trauma, as compared to EVA.

c) The WHO recommends that doctors, midwives, and medical assistants be trained in VA for treatment of incomplete abortion (WHO, 1994).



Although both sharp curettage and VA are safe, there has been a movement to switch from sharp curettage to VA because VA causes fewer complications and can be performed at lower level facilities without operating rooms. With hospital policy changes, as well as use of systemic analgesia instead of general anesthesia, it may be possible to perform sharp curettage as an ambulatory outpatient procedure in hospitals. However, VA is still the method endorsed by the WHO.

As noted in the USAID Postabortion Care Strategy Paper, while MVA is safer, less costly, and as effective as sharp curettage for treating postabortion complications, MVA does not equal PAC. Where MVA is not available, sharp curettage is an effective practice to provide lifesaving emergency care (p. 15).

Newer research has focused on the use of medical management of incomplete abortion using the synthetic prostaglandin misoprostol which can be administered orally or intra-vaginally. To date, most of this research has included care for women who have experienced a miscarriage, but new research is being conducted in its use with women who have an incomplete induced abortion. Misoprostol has the potential to assist in emergency treatment of incomplete abortion at the lowest-level health facilities by lower-level trained providers, and established supervisory and referral systems. Research on misoprostol is included in section I.C.3 of this module.

## I.A. PRIVACY AND CONFIDENTIALITY IN HISTORY AND PHYSICAL ASSESSMENT

Summary of Evidence	Supporting Research	Gray Type
Women need privacy and confidentiality during the taking of their history and physical assessment.	A study in Bolivia in 1993, which interviewed 30 PAC patients in four hospitals, found women wanted privacy and confidentiality during the taking of their history and physical assessment. (Rance, 1994: 6).	IV
☑ Enough evidence for action: One study.		





## I.B. TRIAGE

Summary of Evidence	Supporting Research	Gray Type
Triage during emergency treatment.	No PAC-related studies found on this topic.	

## I.C. MEDICAL TREATMENT

#### I.C.1. VA and Sharp Curettage

According to a 2002 Cochrane review, "Vacuum aspiration can be performed without the need for a fully equipped and staffed operating theater as it can be done with or without electricity, under local anesthesia or sedation. It can therefore be performed in settings with limited resources, saving time and money, and possibly minimizing complications. Eliminating the need for transport to a better equipped facility might decrease the severity of an infection, or decrease blood loss and the subsequent need for transfusions" (Forna and Gulmezoglu, 2003: 5). It is critical to ensure that all equipment used in emergency treatment of abortion complications are sterilized prior to reuse to decrease any risk of transmission of HIV, malaria, or bacteria which could cause sepsis.

Both sharp curettage and VA are safe and effective. "Large scale studies in the 1970s showed rates of both total and major complications from electric vacuum aspiration to be half that of sharp curettage, although low complications were seen for both procedures" (Koontz et al., 2003: 8). Some of the complications related to sharp curettage are not due to the procedure itself but to the use of general anesthesia, which provides overall muscle relaxation, including for the uterus. This muscle relaxation makes it easier for perforation and increased blood loss due to lack of constriction of uterine blood vessels and other complications.

Koontz et al. (2003) outlines the following which are included for the total costs of sharp curettage procedures: 1) overhead costs associated with staying in the emergency room (initial assessment), the surgical obstetrics unit (the procedure), and the gynecology ward (postoperative recovery and discharge); 2) cost of time of personnel involved in patient care; 3) cost of medications given during the hospital stay, including anesthesia, pain medications, blood transfusion, contraception, discharge medications, and any other medication given; 4) cost of standard supplies and disinfection (with separate estimates for sharp curettage and MVA); 5) cost of equipment used for each MVA procedure (with the cost of sharp curettage equipment estimated at zero); and 6) costs of services from other departments that were calculated based on specific resources each patient used such as labs, meals, and ultrasound, as well as more rarely used resources such as chest x-ray, electrocardiograph, and internal medicine consults.

As reflected in this section, most comparative studies on methods of emergency treatment related to PAC have involved comparing MVA and sharp curettage. While VA and MVA carry a lower risk of morbidity; however, some complications may require the use of sharp curettage.



Summary of Evidence	Supporting Research	Gray Type
MVA is as effective as sharp curettage for treatment of first trimester incomplete abortion. ☑ Enough evidence for action: One study.	A prospective, longitudinal study from 1990–1991 conducted in Harare, Zimbabwe, found that MVA was as safe as sharp curettage for treatment of incomplete abortion, with 0.7 percent resulting in incomplete evacuations with MVA and zero percent resulting in incomplete evacuations with sharp curettage. Sharp curettage tended to be utilized when a woman presented with a more complicated case. For example, 17 percent had sepsis as compared to 11 percent for those who had MVA. At follow-up, only 0.3 percent of those who had MVA had extreme pain as compared to 2.7 percent of those treated with sharp curettage. In this study, 834 women were treated with MVA and 589 women were treated with sharp curettage for treatment of incomplete abortion. Only women with fewer than 12 weeks of gestation, determined by bimanual pelvic examination of uterine size, were included. At time of discharge, patients were scheduled for a two-week follow-up appointment and examined for post procedural complications. Home visits were made for those who did not return for follow-up appointments. Physicians received a five-day training course in MVA, including use of analgesics for pain relief. Over a three-month period, data were collected on 1,000 consecutive patients treated for PAC with sharp curettage; one year after the initiation of the study, the same data were collected on 834 PAC patients treated with MVA, of which 589 were included in the analysis, as they had under 12 weeks gestation. Results were based on assessments made at the two-week follow-up (Mahomed et al., 1994).	III

Summary of Evidence	Supporting Research	Gray Type
Women undergoing MVA procedures had significantly decreased bleeding seven days post evacuation than women undergoing sharp curettage.	A study (year not specified) of 300 postabortion patients treated with MVA in Nairobi, Kenya, indicated that the use of MVA significantly decreases bleeding after seven days post-evacuation compared to those treated with sharp curettage. The patients treated with MVA were asked to stay in the ward for a minimum of six hours for observation after evacuation and then were sent home, whereas hospital stay for the sharp curettage patients was one to three days in the ward. Clinical findings seven days after evacuation reported that 70.3 percent of the women treated with MVA were without signs of vaginal bleeding compared to 64.6 percent of the group treated with sharp curettage. In addition, 3.3 percent of the MVA patients experienced some bleeding in	III
	comparison to 5.6 percent of the sharp curettage patients (Kizza et al., 1990).	





Summary of Evidence	Supporting Research	Gray Type
Women who receive VA treatment for incomplete abortion had shorter	A randomized study in South Africa of 357 women presenting with incomplete abortions found that those who received VA had significantly lower blood loss, a quicker procedure, and less pain than those who underwent sharp curettage (Verkuyl and Crowther, 1993).	Π
<ul> <li>procedures, had significantly lower blood loss and less incidence of moderate to severe pain than women treated with sharp curettage.</li> <li>☑ Enough evidence for action: One study, one review.</li> </ul>	A Cochrane Collaboration review of two trials (Tan et al., 1969 and Verkuyl and Crowther, 1993) found that vacuum aspiration compared with sharp curettage was associated with decreased blood loss, fewer cases of blood loss greater than or equal to 100 mls, and fewer cases of post-operative hemoglobin level less than 10 g/dl. Compared with women undergoing sharp curettage, women undergoing vacuum aspiration were less likely to report moderate to severe pain. Additionally, the duration of VA procedures was shorter than that of sharp curettage. The trials were relatively small, with 193 women in the Tan, 1969 study and 357 in the Verkuyl, 1993 study (Tan et al., 1969; Verkuyl and Crowther, 1993 reviewed in Forna and Gulmezoglu, 2003).	Π
MVA has low complication rates.	A study of 12,888 MVA procedures in 21 countries found an immediate complication rate of 0.8 per 100 procedures and no deaths (Laufe, 1977 cited in Baird and Flinn, 2001).	II
☑ Enough evidence for action: Two studies.	A study of 1,896 women in Ethiopia from August 1993 to April 1995 compared the efficacy of MVA versus sharp curettage. Immediate complications such as perforation, hemorrhage, shock, and infection were significantly higher in the sharp curettage group whereas nausea and vomiting occurred more often in the MVA group. All MVA patients reported less pain than sharp curettage patients. MVA proved to be more friendly and applicable in smaller uterine sizes than sharp curettage and did not severely damage the endometrial lining (Lukman et al., 1996).	Ш

Summary of Evidence	Supporting Research	Gray Type
The use of systemic analgesia with sharp curettage for incomplete abortions with dilated cervix up to 14 weeks is safe, effective, has a smaller chance of requiring a blood transfusion, and does not require the use of the operating theatre.	A prospective randomized clinical trial in 1992 in South Africa comparing 142 patients with use of sharp curettage for uncomplicated incomplete abortion with systemic analgesia of fentanyl and midazolam to sharp curettage with general anesthesia found that use of systemic analgesia of fentanyl and midazolam was safe, effective, and acceptable and had a significantly smaller chance of requiring a blood transfusion. Use of systemic analgesia did not require an operating theater, but "the danger of respiratory depression still exists and the evacuation room must therefore be equipped with a resuscitation unit and a pulse oximeter for continuous oxygen saturation monitoring" (de Jonge et al., 1994: 483). Ninety-seven of the 99 patients who were available for their six-week follow-up visit stated they were pleased that they had not had general anesthesia; only two would have preferred it.	Ι
The use of general anesthesia with suction curettage is associated with increased risks of blood loss, cervical injury, uterine perforation, and subsequent abdominal hemorrhage. ☑ Strong evidence: One study. Two studies.	A study in the US compared the safety of suction curettage among 36,430 women receiving local anesthesia and 17,725 women receiving general anesthesia. Total complication rates for the two groups were the same; however women who received general anesthesia experienced greater rates of hemorrhage, cervical injury, and uterine perforation. Local anesthesia was associated with increased febrile and convulsive morbidity. (Grimes et al., 1979; Greenslade et al., 1993b cited in Baird and Flinn, 2001). occurred more often in the MVA group. All MVA patients reported less pain than sharp curettage patients. MVA proved to be more friendly and applicable in smaller uterine sizes than sharp curettage and did not severely damage the endometrial lining (Lukman et al., 1996).	IV



Summary of Evidence	Supporting Research	Gray Type
Using MVA for PAC instead of sharp curettage can reduce the length of hospital stays. ☑ Strong evidence: Seven studies.	A study of 339 postabortion patients in Oaxaca, Mexico, (year not specified) found that introducing MVA resulted in reducing the length of hospital stay from 20.7 to 17.4 hours. Following hospital protocol, no attempt was made to determine whether or not the patient's abortion was spontaneous or induced in nature. At baseline, MVA was being used zero percent of the time and increased to 78.1 percent at post-intervention. Sharp curettage at baseline was the most utilized technique at 89.6 percent and decreased to 20.8 percent. Use of a combination of sharp curettage and MVA was 10.4 percent at baseline and decreased to 1.1 percent. Guidelines were modified to stipulate using MVA with local anesthesia if a patient's uterus was determined to be smaller than 12 cm. Finally, all operating rooms became functional 24 hours a day to reduce waiting times (Langer et al., 2002; Langer et al., 1999; Brambila et al., 1999).	III
	A 1991 rapid assessment in Kenya and Mexico found that MVA required less hospital time than sharp curettage. Data were collected between January and June 1991 in four hospitals in Kenya and five hospitals in Mexico using direct observation to document actual time and resources from the beginning to the end of patients' hospital stays. All women included in the study had incomplete abortions with a uterine size related to gestation of less than 13 weeks. The study design planned for at least 15 women from each hospital to be observed, but because of small caseloads this was not possible in all of the hospitals. Among the hospitals in Kenya, the hospital with the longest average stay for MVA (23.9 hr) was 42 percent shorter than the hospital with the shortest average stay for sharp curettage (40.9 hr.). In Mexico, at the one hospital that performed both MVA and sharp curettage, MVA patients stayed an average of 45 percent less time than sharp curettage clients (11.4 hours versus 20.6, respectively) (Johnson et al., 1993).	III

Summary of Evidence	Supporting Research	Gray Type
Using MVA for PAC instead of sharp curettage can reduce the length of hospital stays. ☑ Strong evidence: Seven studies.	A study conducted from 1997–1978 in Burkina Faso found that treating patients with MVA led to significantly shorter hospital stays for PAC patients. Before the intervention, patients were treated with sharp curettage or digital curage. The mean treatment time was 73 minutes and patients spent an average of 36 hours in the hospital, in large part recovering from the sharp curettage and general anesthesia. When providers were trained and began to use MVA, treatment time dropped to 23 minutes and patients left the hospital after an average of 19 hours. As part of this pre-post intervention study, researchers trained staff at two large hospitals in Ouagadougou and Bobo-Dioulasso to provide PAC and reorganized services to make them available at one location. Training for physicians, nurses, and midwives covered manual vacuum aspiration (MVA), family planning methods, infection prevention, and communication with patients. Staff also participated in the development of policies and standards for PAC services. To measure changes in knowledge and behavior, researchers interviewed 330 patients with abortion complications and 78 providers before the intervention, and 456 patients and 41 providers after the intervention, and collected information on hospital costs (Ministry of Health, Burkina Faso, 1998).	III
	A study conducted during 1999 of the introduction of MVA to treat incomplete abortion at a regional hospital in El Salvador found that compared to sharp curettage, use of MVA and associated changes in protocol led to a significant reduction (28 percent) in time spent by the PAC patient in the hospital. Time spent in the hospital was reduced from 27.2 hours for sharp curettage PAC patients to 19.7 hours for MVA patients. Hospital cost, length of stay, complication rates, and family planning acceptance following PAC were compared in a prospective, randomized controlled study of 154 women assigned to either sharp curettage or MVA (Koontz et al., 2003).	III





Summary of Evidence	Supporting Research	Gray Type
Using MVA for PAC instead of	A 1996–1998 intervention study in a referral hospital in Lima, Peru, tested a model where all	III
sharp curettage can reduce the	PAC services were provided in an obstetrics and gynecology emergency room on an outpatient	
length of hospital stays.	basis. Doctors were trained in MVA and improved clinical practices, counseling on medical care	
	and family planning, and provision of contraceptive methods. Pre-intervention patients spent the	
Strong evidence: Seven studies.	majority of their time (an average of 20.1 hours, or 60 percent of the total stay) in the obstetric	
	and gynecology ward, following the sharp curettage procedure. Post-intervention recovery times	
	were reduced to 2.7 hours. This increased somewhat to 3.5 hours three years later, in part due	
	to an occasional practice of hospitalizing patients until their fees are paid. The original study	
	utilized a pre-post intervention design with no control group. A follow-up assessment of the same	
	outcomes was conducted in 2000-2002 to assess the sustainability of the intervention without	
	outside assistance. The average length of stay at baseline was 33.3 hours, which declined to 6.4	
	hours after the intervention and remained fairly constant at 6.7 hours three years later. Data	
	collection included review of the surgical logbook for 455 patients, clinical histories and exit	
	interviews of 323 patients, a time-motion study of 52 patients from arrival at the emergency room	
	until departure, 17 random inventories of supplies and equipment, and 13 in-depth interviews	
	with providers and policymakers (Benson and Huapaya, 2002).	
## I.C.I.A. EFFECTIVENESS AND SAFETY OF MVA, VA, AND SHARP CURETTAGE

Summary of Evidence	Supporting Research	Gray Type
<ul> <li>Using MVA for PAC instead of sharp curettage can reduce the length of hospital stays.</li> <li>☑ Strong evidence: Seven studies.</li> </ul>	A 1999–2001 intervention study conducted in Bolivia's three largest maternity hospitals found that the average length of hospitalization for women treated with MVA was much lower than with sharp curettage. Pre-intervention women treated with sharp curettage were hospitalized for an average of 34 hours in La Paz, 34.3 in Santa Cruz, and 38.6 in Sucre. The average length of stay after the intervention was 10.7 hours using MVA (a decrease of 68 percent) and 49.1 hours using sharp curettage in La Paz, 4.4 hours using MVA (a decrease of 78 percent) and 26.2 hours using sharp curettage in Santa Cruz, and 19.9 hours using MVA (a decrease of 48 percent) and 45.9 hours using sharp curettage in Sucre. The bulk of the difference came from the shorter recovery time required for MVA with local anesthesia compared to sharp curettage with general anesthesia. However, treatment time was marginally shorter with MVA, and pre-procedure waiting time for women treated with MVA dropped by about two hours in all three hospitals, to 1.7–3.5 hours post-intervention, while it remained constant or increased for women treated with sharp curettage who waited between 3.4 (Santa Cruz) and 22.4 hours (Sucre). The pre-post intervention study was conducted in maternity hospitals in La Paz, Santa Cruz, and Sucre. Due to differences in infrastructure, size, and staff and population characteristics, comparisons were made between pre- and post-intervention results within but not between hospitals. The intervention consisted of reorganization of services to ambulatory care; PAC training on information and counseling (health status, uterine evacuation procedure, postabortion contraception, and care after leaving the hospital) and appropriate technologies and technical performance; and refresher training and supportive supervision. Data were collected through 935 client exit interviews, 269 threemonth follow-up interviews with clients, 439 client observations, review of 768 clinical records, 47 provider interviews, 204 provider questionnaires, 138 mal	III





### I.C.I.A. EFFECTIVENESS AND SAFETY OF MVA, VA, AND SHARP CURETTAGE

Summary of Evidence	Supporting Research	Gray Type
<ul> <li>Using MVA for PAC instead of sharp curettage can reduce the length of hospital stays.</li> <li>☑ Strong evidence: Seven studies.</li> </ul>	A study in Senegal from 1997–1998 that trained providers to use MVA to treat patients for abortion complications found that the average length of hospitalization decreased significantly in all three study hospitals, despite wide variation among hospitals. During the pre-intervention phase, digital curage was used to treat 52.8 percent of patients, while sharp curettage and EVA were used for 43.7 percent and 3.5 percent of patients, respectively. After the intervention to train providers to use MVA, use of digital curage, sharp curettage, and EVA dropped to 24.9 percent, 23.8 percent, and zero percent, respectively, whereas MVA was used for 51.4 percent of patients. All forms of treatment were carried out in the hospital. After the change in treatment protocol switched to favor MVA, mean hospital stays almost decreased by half in two of the hospitals, dropping from 40 hours to 21 hours in one hospital, and from 73 hours to 39 hours in the other hospital. The third hospital had much longer average stays before and after the intervention, but nevertheless decreased from 136 hours (or 5.7 days) to 104 hours (or 4.3 days). Physicians, nurses, and midwives at three teaching hospitals in Dakar received training in clinical management of abortion complications including MVA and infection prevention, family planning, and counseling. To measure the impact of the intervention, researchers in this pre-post intervention study interviewed 320 patients and 204 providers before the intervention and 543 patients and 175 providers after the intervention. A time-motion study was conducted to assess costs for 35 patients (Centre de Formation et de Recherche en Santé de la Reproduction and Clinique Gynécologique et Obstétricale CHU A. le Dantec, 1998).	Ш

Summary of Evidence	Supporting Research	Gray Type
Using MVA for PAC instead of sharp curettage along with associated changes in protocols and an improved	A study conducted during 1999 of the introduction of MVA to treat incomplete abortion at a regional hospital in El Salvador found that compared to sharp curettage, use of MVA and associated changes in protocol led to a significant cost savings of 13 percent (Koontz et al., 2003). See Appendix I, Koontz et al. for a description of the intervention.	III
significantly reduce costs of care in most cases. ☑ Strong evidence: Nine studies.	A study in Oaxaca, Mexico, (year not specified) found that use of MVA decreased the average cost of PAC by almost 32 percent. Using sharp curettage as the procedure of choice cost \$264.47 per patient as compared to \$180.22 using MVA. These costs include the intervention costs (e.g., project costs), supplies (e.g., syringes), training time, supervision, and monitoring. "The results of this study show that the improved service-delivery model achieved significant cost savings and simultaneously improved quality of care for patients undergoing postabortion treatment" (Brambila et al., 1999: 121). In terms of the procedure used for uterine evacuation, MVA was being used zero percent of the time at baseline and increased to 78.1 percent at post-intervention. Sharp curettage at baseline was the most utilized technique at 89.6 percent and decreased to 20.8 percent, and a combination of sharp curettage and MVA was 10.4 percent at baseline and decreased to 1.1 percent. Length of hospital stays was reduced by 36 percent. In terms of which procedure to use, guidelines were modified to stipulate the standard protocol of MVA usage with a local anesthesia if a patient's uterus was determined to be smaller than 12 cm. Finally, all operating rooms became functional 24 hours a day to reduce waiting times (Langer et al., 2002 and Langer et al., 1999). See Appendix I, Langer et al. for a description of the intervention.	III





Summary of Evidence	Supporting Research	Gray Type
Using MVA for PAC instead of sharp curettage along with associated changes in protocols and an improved service delivery model can significantly reduce costs of care in most cases. ☑ Strong evidence: Nine studies.	A 1996–1998 intervention study in a referral hospital in Lima, Peru, showed that providing PAC services in an obstetrics and gynecology emergency room on an outpatient basis was successful and resulted in lower costs than did providing PAC as an inpatient service. Doctors were trained in MVA and improved clinical practices, counseling on medical care and family planning, and provision of contraceptive methods. Prior to the intervention, the hospital recovered US\$52.98 in patient fees out of a cost of US\$118.73, requiring the facility to subsidize an average US\$65.75 per PAC patient. Following the intervention, the average cost recovery was US\$37.40 from an average cost of US\$45.13, with the hospital subsidizing US\$7.73 per patient. Three years later, the hospital underwrote only US\$0.70, as costs were reduced to an average of US\$33.45 per patient, and patient fees accounted for US\$32.75. "The actual cost recovery to Hospital Carrión is likely to be slightly less because some medications and supplies purchases are made in private pharmacies, rather than from the hospital pharmacy. The hospital and patient cost data suggest, however, that the Hospital Carrión is now recovering almost its full cost of providing PAC services" (Benson and Huapaya, 2002: 29). Researchers found that differences in costs were primarily related to length of hospitalization, and therefore greatly reduced by the shorter length of stay accompanying the shift to MVA use (Benson and Huapaya, 2002). See Appendix I, Benson and Huapaya, for a description of the intervention.	III
	A study from 1997–1978 in Burkina Faso found that dilation and curettage, the primary treatment prior to the intervention, cost 20,106 CFA, the equivalent of about US\$34, while the average cost per patient for MVA was 8,546 CFA, or approximately US\$15. MVA lowered costs for both the hospital and patients due to shorter hospital stays, less use of general anesthesia, and less staff time (Ministry of Health, Burkina Faso, 1998). See Appendix I, Ministry of Health, Burkina Faso, for a description of the intervention.	III

Summary of Evidence	Supporting Research	Gray Type
Using MVA for PAC instead of sharp curettage along with associated changes in protocols and an improved service delivery model can significantly reduce costs of care in most cases. ☑ Strong evidence: Nine studies.	A 1999–2001 intervention study conducted in Bolivia's three largest maternity hospitals found that treating women with MVA cost much less than treatment with sharp curettage. Cost components considered were personnel (salaries and benefits), medication, supplies, and hospitalization, and were assessed using client flow analysis, observing a sample of patients from arrival to discharge. Pre-intervention costs for women treated with sharp curettage ranged from US\$59.35 in Santa Cruz to US\$88.77 in Sucre. Costs for treatment with MVA after the intervention were 45 percent lower in Sucre (US\$48.74), 62 percent lower in La Paz (US\$24.92), and 75 percent lower in Santa Cruz (US\$15.67). The drop in costs was primarily due to much shorter duration of hospitalization, although costs for personnel decreased by half or more in all three hospitals, and costs for medication and supplies decreased modestly in La Paz and Santa Cruz. The intervention had mixed effects on the cost of treatment with sharp curettage. In two hospitalization, while in the Santa Cruz costs dropped by 18 percent for sharp curettage, compared to 75 percent for MVA treatment. The pre-post intervention study was conducted in maternity hospitals in La Paz, Santa Cruz, and Sucre (Billings et al., 2003b). See Appendix I, Billings et al., 2003b Bolivia, for a	III
	description of the intervention.	





Summary of Evidence	Supporting Research	Gray Type
Using MVA for PAC instead of sharp curettage along with associated changes in protocols and an improved service delivery model can significantly reduce costs of care in most cases. ☑ Strong evidence: Nine studies.	A 1991 rapid assessment in Kenya and Mexico found that MVA used fewer resources and required less hospital time than sharp curettage. The study identified and analyzed the differences in the costs of MVA and sharp curettage used in the treatment of incomplete first-trimester abortions. Data were collected between January and June 1991 in four hospitals in Kenya and five hospitals in Mexico using direct observation to document actual time and resources from the beginning to the end of patients' hospital stays. All women included in the study had incomplete abortion with a uterine size related to less than 13 weeks gestation. The protocol required that MVA not be performed for pregnancies of more than 12 weeks. The study design planned for at least 15 women from each hospital to be observed, but this was not possible because of small caseloads in all of the hospitals. Cost components studied were staff, drugs, and hospitalization. Cost at the four Kenyan hospital ranged from US\$2.94 to US\$5.24 for MVA (a 23 percent difference) and US\$3.99 to US\$15.25 for sharp curettage (a 66 percent difference). In the Mexican hospital that performed both MVA and sharp curettage, the average cost for an MVA client was US\$65.73, 17 percent less than the hospital with the lowest cost for sharp curettage (US\$235.90). Hospital costs accounted for the largest proportion of total cost, yet even when hospitalization costs were excluded, the cost of MVA was less than the cost for sharp curettage. Personnel costs were the second greatest contributor to average cost (Johnson et al., 1993).	Ш

Summary of Evidence	Supporting Research	Gray Type
Using MVA for PAC instead of sharp curettage along with associated changes in protocols and an improved service delivery model can significantly reduce costs of care in most cases. ☑ Strong evidence: Nine studies.	A 1992 study in Tanzania found that MVA was more cost effective than sharp curettage. Data on 199 patients (107 treated with MVA and 92 treated with sharp curettage), collected between September and November 1992 at Muhimbili Medical Center, showed that direct costs and resource utilization for MVA was 61 percent less than those for sharp curettage. Cost of drugs, infusions, and syringes was 93.1 percent less for MVA patients (80.7 compared to 1,171.1 Tanzanian shillings (Tshs)); total direct cost was 50 percent less; pre-evacuation waiting time was 55.1 percent less for MVA (3.8 hours compared to 8.5 hours); duration of procedure was 46.4 percent less for MVA (10.2 minutes compared to 19 minutes); and duration of hospital stays was 40.5 percent less for MVA (10.7 hours compared to 18 hours). "In principle longer pre-evacuation waiting times have been associated with increased incidence of septic abortion and hemorrhagic shock as immediate complications The longer the duration of the procedure the higher the cost" (Magotti et al., 1995: 250). The MVA equipment was purchased for the study, but the sharp curettage equipment, because it was already available in the hospital, was not included in the total direct costs. However, the monthly depreciation value of both sets of equipment, based on replacement value, was similar (Tshs 1,250 for MVA equipment and Tshs 1,500 for sharp curettage equipment.) Hospitalization costs, although known to contribute heavily to medical costs, were not included because of the absence of a clear pricing policy. Patients included in the study were diagnosed with an incomplete abortion during the time of data collection with uterine size related to less than 16 weeks gestation. MVA was performed on even numbered days and sharp curettage was performed on odd numbered days. One MVA patient needed re-evacuation (Magotti et al., 1995).	Π





Summary of Evidence	Supporting Research	Gray Type
Using MVA for PAC instead of sharp curettage along with associated changes in protocols and an improved service delivery model can significantly reduce costs of care in most cases. ✓ Strong evidence: Nine studies.	A 1994 quasi-experimental study conducted in one U.S. hospital found that MVA costs less compared to sharp curettage. Data collected on all patients presenting with incomplete abortion between January 1990 and July 1992 showed that MVA use reduced total hospital costs by 41 percent (US\$827 compared to US\$1,404), anesthesia charges by 93 percent, admission charges by 92 percent, and expenses related to sterile supplies by 54 percent. The study found that "eliminating the need for a staff- and cost-intensive operating theaterresulted in considerable cost reductions, without sacrificing standards for clinical care" (Blumenthal et al., 1994: 266). From January 1990 to September 1991, patients suspected of having incomplete abortion with uterine size less than or equal to 12 weeks gestational size were treated with sharp curettage in the operating room. From October 1991 to July 1992, incomplete abortion patients (mean gestational age not given) were treated with MVA in the gynecology exam room, or, when not available, on the labor corridor in a labor and delivery room or procedure room. Costs were compared through itemizing hospital bills (Blumenthal and Remsburg, 1994).	III
	In the one year following a study in Nairobi, Kenya, where MVA was introduced in a wider scale with over 3,000 patients being evacuated, the savings calculated were estimated at Ksh.5.1 million (US \$300,000) by not utilizing an operating theater or using sharp curettage and anesthesia. This amount was equivalent to the sum of basic salaries of about 200 nurses annually (Kizza et al., 1990).	III

Summary of Evidence	Supporting Research	Gray Type
Switching to MVA from sharp curettage can cause an initial increase in cost due to improved quality of care resulting in increased cost for supplies and medications. ☑ Needs more research: One study	A study in Egypt found an 8 percent increase in the total per-patient cost in one hospital and a 32 percent increase in another hospital after switching from sharp curettage to MVA, due to an increase in the cost of supplies and medicines associated with the use of MVA, which were not offset by reductions in length of hospital stay. "These increases are due to the relatively inefficient use of medical supplies and pain control medication in the pre-intervention, and the improvements in the quality of care during the post intervention that required a more intensive use of medical supplies" (Nawar et al., 1999: 136).	Π
MVA can be performed safely in a primary care setting with a referral system available for those requiring higher-level care. ☑ Enough evidence for action: One study.	A 2001–2003 operations research study in health centers in Senegal found that 57 percent of PAC patients were treated with MVA in the 14 months after it was introduced. This pre-post intervention study introduced an integrated three-element PAC model in 18 primary care sites in two predominantly rural regions in Senegal to test the feasibility of making services more immediately accessible to women in rural areas and to assist with the development of national standards of care for PAC services. Following the intervention, 460 patients were treated for complications of abortion at the study sites. Of these, 326 women had gestational age of less than 14 weeks and were considered suitable cases for MVA treatment, and 266, or 57 percent, were treated with MVA. Thirty-four women, or 10 percent of those eligible for MVA, experienced severe complications such as closing of the cervix and were referred to the secondary-level district hospital. It is important to note that not all postabortion patients can be treated with MVA. During this study, 134 of the 400 women requiring care were beyond the first trimester, which is the WHO-recommended limit for MVA use (Dabash, 2003). See Appendix I, Dabash 2003, Senegal, for a description of the intervention.	III





### I.C.2.A. EFFECTIVENESS AND SAFETY OF FOOTPUMP SUCTION VACUUM ASPIRATION

Summary of Evidence	Supporting Research	Gray Type
MVA and Footpump suction evacuation (FSE) are equally effective for uterine evacuation following first or second trimester incomplete abortion.	A prospective comparative analysis in South Africa of women allocated either to MVA or Footpump suction evacuation (FSE) following first or second trimester incomplete abortion found that both methods were equally effective for uterine evacuation. The Menox footpump (Menox AB, Gothenburg, Sweden) was used. Sixty-five women received MVA and 56 received FSE. The volume of products of conception obtained in both groups was similar. Four women in the MVA group and one in the FSE group required antibiotics. In two cases women allocated to FSE required MVA as a result of the footpump valve being clogged. In four cases, women who received MVA required sharp curettage because of a faulty or incomplete syringe apparatus (Gaertner et al., 1998).	III

#### I.C.2.B. COST COMPARISONS OF FOOTPUMP SUCTION VACUUM ASPIRATION

Summary of Evidence	Supporting Research	Gray Type
Cost Comparisons with Footpump Suction Vacuum Aspiration.	No PAC-related data found on this topic.	





#### I.C.3. EFFECTIVENESS AND SAFETY OF MISOPROSTOL FOR PAC

Misoprostol is a prostaglandin E1 analogue originally approved by the United States Food and Drug Administration for the prevention and treatment of gastric ulcer during long-term use of nonsteroidal anti-inflammatory drugs. Because it acts to contract the uterus, misoprostol is currently used off-label for a variety of obstetric and gynecologic indications (Goldberg et al., 2001).

Studies that have examined its potential use in evacuating the uterus following early pregnancy failure (incomplete spontaneous abortion or missed abortion) demonstrate the efficacy, safety and acceptability of misoprostol for this indication (Beucher et al., 2003). Side effects are generally mild, short-lived and dose-related and include chills, fever, nausea, vomiting, diarrhea and headache. Gastrointestinal side effects are more common with oral compared to vaginal administration. Bleeding is increased compared to surgical management but not significantly. Pain needs to be relieved by analgesics. Questions remain about the optimal dose and route of administration (Winikoff, 2005).

Though most published trials of medical management of early pregnancy failure were conducted in industrialized countries in well-equipped facilities, the greatest potential use of misoprostol for PAC may be in resource-constrained environments where surgical care is not readily available (Winikoff 2005). Misoprostol is relatively inexpensive, has a long shelf-life, is heat stable and requires no special storage facilities. Misoprostol treatment as an alternative to surgery appears to be acceptable to women where it has been tested (Zhang et al., 2005; Ngoc et al., 2004). Studies suggest that using misoprostol instead of surgery in an outpatient setting reduces the cost of services (Graziosi et al., 2005).

Despite encouraging results, medical management has several drawbacks. A number of women treated with misoprostol will still need to undergo surgical evacuation due to treatment failure. Treatment success rates are higher with longer periods of observation and thus concerns exist about how to manage potential losses to follow up (Weeks et al., 2005). It is important to keep in mind that not all PAC clients may be appropriate candidates for medical management. For example, medical management with misoprostol, according to one source (Ipas, 2004) is contraindicated when a patient has a known allergy to prostaglandins, an IUD is in place (prior to removal), or when there are signs of endometritis, sepsis or ectopic pregnancy. In clinical studies, women with clinical or laboratory evidence of severe anemia were considered ineligible for medical evacuation because of the small but real risk of hemorrhage (Ipas, 2004). Lastly, it may be possible to control bleeding problems more quickly with a surgical procedure (Ipas, 2004). Thus medical management needs to be seen as a potential option within a system of PAC services that include close monitoring and access to higher level surgical services.

## I.C.3.A. EFFECTIVENESS AND SAFETY OF MISOPROSTOL FOR SPONTANEOUS AND MISSED ABORTIONS

Summary of Evidence	Supporting Research	Gray Type
	Misoprostol compared with both expectant and surgical management	
Use of misoprostol to evacuate the uterus after early pregnancy failure can completely evacuate the uterus reducing the need for surgical evacuation.	A meta-analysis was conducted of 13 randomized controlled clinical trials that reported a comparison of misoprostol and curettage, misoprostol and expectant management, or expectant management and curettage for early pregnancy loss. Combined data in women with missed abortion managed expectantly or treated with misoprostol showed complete evacuation rates of 28 percent (49/173; range 14-47%) and 81 percent (242/298; range 60-83%) respectively. In women with incomplete abortion, these rates were 94 percent (31/33; range 80-100%) and 99 percent (75/76; range 99-100%) respectively. Both expectant management and misoprostol treatment reduce the need for surgical evacuation for early pregnancy loss, but for women with missed abortion misoprostol seems to be much more effective that expectant management (Graziosi et al., 2004).	Ι
	This study in Denmark from 1999 to 2000 compared treatment of spontaneous abortion by expectant management, 400 mcg of vaginal misoprostol, and surgical evacuation. Seventy-eight women were enrolled and reevaluated after treatment on days 8 and 14. Successful evacuation of the uterus was achieved in 14/17 (82%) of women in the expectant management group; in 28/31 (90%) of women in the misoprostol treatment group; and 29/30 (97%) of women in the surgical management group (Grønlund et al., 2002).	III





#### I.C.3.A. EFFECTIVENESS AND SAFETY OF MISOPROSTOL FOR SPONTANEOUS AND MISSED ABORTIONS

Summary of Evidence	Supporting Research	Gray Type
	Misoprostol compared with expectant management or placebo	
Medical management of early pregnancy failure using misoprostol is more effective than expectant management in reducing the need for surgical evacuation. ☑ Strong evidence: Four studies.	This randomized controlled trial in South Africa enrolled 104 women with pregnancy failure and assigned them to receive either 600 mcg misoprostol or placebo vaginally. Repeat doses were offered if evacuation was not complete the following day. At Day 7, women who had not experienced complete evacuation of the uterine contents were given surgical evacuation. The overall success rate in the misoprostol arm was 88.5 percent compared to 44.2 percent in the placebo arm. There was no significant difference in success rates between the two arms among women experiencing an incomplete abortion (100% vs. 85.7%). However, women experiencing a missed abortion had a much higher success rate with misoprostol (87%) as compared to placebo (29%) (Bagratee et al., 2004).	Π
	This randomized controlled trial in Hong Kong enrolled 60 women with pregnancy failure. Women in the medical arm received 400 mcg of vaginal misoprostol on days 1, 3 and 5. The control group was treated with expectant management only. Final outcome was assessed at day 15. Eighty-three percent of women in the misoprostol group avoided surgical evacuation compared to 48 percent of the control group (Ngai et al., 2001).	Π
	This randomized controlled trial in Canada enrolled 50 women with missed abortion. Women received either one to two 800 mcg doses of vaginal misoprostol or placebo. Outcome was assessed one week after misoprostol administration. Eighty percent of women in the misoprostol group and 16 percent of women in the placebo group had successful expulsion of products of conception and did not require surgical intervention (Wood and Brain 2002).	Π

## I.C.3.A. EFFECTIVENESS AND SAFETY OF MISOPROSTOL FOR SPONTANEOUS AND MISSED ABORTIONS

Summary of Evidence	Supporting Research	Gray Type
	Misoprostol compared with expectant management or placebo	
Medical management of early pregnancy failure using misoprostol is more effective than expectant management in reducing the need for surgical evacuation.	This prospective, observational study in Hong Kong enrolled 252 women diagnosed with incomplete abortion. All women were first treated with expectant management. Two weeks after the initial diagnosis, women who were found to still have significant retained products of conception were given 400 mcg oral misoprostol every 4 hours for a total of 3 doses. They were reassessed the following morning for complete evacuation. One hundred forty one women had retained products at the two week follow up and were treated with misoprostol. Of those women, 88 (62%) did not require surgical intervention (Chung et al., 1995).	III





#### I.C.3.A. EFFECTIVENESS AND SAFETY OF MISOPROSTOL FOR SPONTANEOUS AND MISSED ABORTIONS

Summary of Evidence	Supporting Research	Gray Type
	Misoprostol compared with expectant management or placebo	
Misoprostol given either orally or vaginally for treatment of early pregnancy failure can completely evacuate the uterus 50 to 96 percent of the time reducing the need for surgical intervention.	This randomized controlled trial in the US enrolled 652 women with a diagnosed first trimester pregnancy failure to receive either 800 mcg of misoprostol vaginally or to undergo vacuum aspiration in a 3:1 ratio. The misoprostol group received treatment on day 1, a second dose on day 3 if expulsion was incomplete and vacuum aspiration on day 8 if expulsion was still incomplete. Of the women who completed the trial according to the protocol, 84 percent treated with misoprostol and 97 percent treated with vacuum aspiration had completed uterine evacuation by day 8 (Zhang et al., 2005).	Π
☑ Strong evidence: Eight studies.	This randomized controlled trial in Hong Kong enrolled 635 women and compared the efficacy of misoprostol for treatment of incomplete abortion to that of surgical evacuation. Women in the misoprostol arm received 400 mcg of oral misoprostol every 4 hours up to a dose of 1200 mcg. Evaluation of success was made the following morning. Of the 371 women who received misoprostol, 159 (50%) expelled the products of conception and did not require surgical intervention (Chung et al., 1999).	Π
	This randomized controlled trial in Uganda enrolled 330 women with a clinically diagnosed incomplete abortion and assigned them to receive either manual vacuum aspiration or 600 mcg of misoprostol orally to complete uterine evacuation. Follow up was conducted on Day 14. Misoprostol successfully completed the uterine evacuation in 96.3 percent of the available cases. Nearly 30 percent of women in both arms of the trial were lost to follow up (Weeks et al., 2005).	Π

## I.C.3.A. EFFECTIVENESS AND SAFETY OF MISOPROSTOL FOR SPONTANEOUS AND MISSED ABORTIONS

Summary of Evidence	Supporting Research	Gray Type
	Misoprostol compared with expectant management or placebo	
Misoprostol given either orally or vaginally for treatment of early pregnancy failure can completely evacuate the uterus 50 to 96 percent of the time reducing the need for surgical intervention	This randomized controlled trial in the United Kingdom of 80 women compared surgical evacuation to medical management with 800 mcg of vaginal misoprostol for early pregnancy failure. This study included women with both incomplete and missed abortions. Follow up was conducted 10 days following treatment administration. Misoprostol was successful in 82.5 percent (33/40) patients. None of the patients in the surgical arm required repeat evacuation (Demetroulis et al., 2001).	Π
Intervention. ☑ Strong evidence: Eight studies.	This randomized controlled trial in South Africa enrolled 50 women who presented with incomplete abortion to receive either medical management consisting of a single dose of 400 mcg oral misoprostol or surgical curettage. The outcome was assessed 12 hours after misoprostol administration. After 12 hours, only 3 (13%) of the women in the misoprostol group had achieved complete evacuation of the uterus (deJonge et al 1995).	Π
	This randomized controlled trial in South Africa enrolled 94 women diagnosed with incomplete abortion to receive 600 mcg misoprostol vaginally or surgical curettage. The overall success rate of medical management was 91.5 percent; one-third of women (15 of 47) had complete uterine evacuations after only one dose of misoprostol and 8.5 percent required surgical intervention to remove retained products of conception after 1 week because of treatment failure. The success rate in the surgical arm was 100 percent. Women in the medical arm experienced a longer duration of bleeding and a greater need for analgesia. More women who received medical treatment would recommend it or choose it in the future than in the surgical arm (Moodliar et al., 2005).	Π





#### I.C.3.A. EFFECTIVENESS AND SAFETY OF MISOPROSTOL FOR SPONTANEOUS AND MISSED ABORTIONS

Summary of Evidence	Supporting Research	Gray Type
	Misoprostol compared with expectant management or placebo	
Misoprostol given either orally or vaginally for treatment of early pregnancy failure can completely evacuate the uterus 50 to 96 percent of the time reducing the need for surgical	This randomized controlled trial in the US enrolled 50 women who were assigned either surgical or medical treatment with misoprostol 800 mcg vaginally which could be repeated at 24 and 48 hours if significant products of conception remained in the uterus. The outcome was measured 72 hours after misoprostol administration. Sixty percent (15/25) women in the medical group had successful uterine evacuation and did not require curettage (Muffley et al., 2002).	Π
intervention. ☑ Strong evidence: Eight studies.	This randomized controlled trial in Turkey enrolled 80 women who were assigned either surgical curettage or medical treatment with misoprostol 200 mcg vaginally plus 200 mcg orally four times daily for a maximum of five days. The overall success rate was 93.3 percent for the misoprostol group and 100 percent for the surgical group (Sahin et al., 2001).	Π

## I.C.3.A. EFFECTIVENESS AND SAFETY OF MISOPROSTOL FOR SPONTANEOUS AND MISSED ABORTIONS

Summary of Evidence	Supporting Research	Gray Type
	Misoprostol compared with expectant management or placebo	
Misoprostol given either orally or vaginally for treatment of early pregnancy failure can completely evacuate the uterus 50 to 96 percent of the time reducing the need for surgical intervention. ✓ Strong evidence: Eight studies.	This randomized controlled trial in Thailand enrolled 169 women with diagnosed incomplete abortion. Women received either a single or repeated dose of 600 mcg misoprostol taken orally. Follow up was conducted two weeks following misoprostol administration. There was no difference in efficacy between the two treatments: 66 percent of women in the single dose arm and 70 percent of women in the repeat dose arm experienced complete expulsion without the need for surgical intervention (Blanchard et al., 2004).	Π
	This small randomized controlled trial in the US enrolled 20 women to receive either 400 mcg of oral misoprostol (12 women) or 800 mcg vaginal misoprostol (8 women) for treatment of early pregnancy failure. The dose was repeated in 24 hours if a gestational sac was still present. After an additional 24 hours, women failing to expel the products of conception were given a surgical evacuation. Successful expulsion occurred in 25 percent (3/12) in the oral group and 88 percent (7/8) in the vaginal group (Creinin et al., 1997).	Π
	This randomized controlled trial in Vietnam enrolled 300 women presenting with a diagnosed incomplete abortion. Women received either a single 600 mcg or repeated oral dose (600 mcg x 2) of misoprostol. Final assessment of success was made at day 10. There were no significant differences in success rates in the two treatment arms. Misoprostol effectively evacuated the uterus for nearly all women (94.6%). Most women reported bleeding for four days and pain from cramps lasting one day. Women indicated that the side effects were tolerable (96%) and that their experience was satisfactory (95%) (Nguyen et al., 2005).	Π





#### I.C.3.A. EFFECTIVENESS AND SAFETY OF MISOPROSTOL FOR SPONTANEOUS AND MISSED ABORTIONS

Summary of Evidence	Supporting Research	Gray Type
	Comparisons of dosage regimens and routes of administration	
Misoprostol may be administered orally, sublingually, or vaginally with good results. Optimal dose/	This randomized controlled trial in Vietnam enrolled 200 women with a missed abortion confirmed by ultrasonography to receive 800 mcg of misoprostol either orally or vaginally. All women returned for follow up two days later. Efficacy was high in both groups and not statistically significant (oral 89%; vaginal 92.9%) (Ngoc et al., 2004).	Π
<ul> <li>route combinations have not been firmly established.</li> <li>✓ Strong evidence: Eight studies.</li> </ul>	This randomized controlled trial in Hong Kong enrolled 201 women to receive 800 mcg of misoprostol either orally or vaginally with a repeat dose 4 hours later if products of conception had not been passed. Final outcome was assessed the day after treatment. The success rate was similar in both groups: 61.1 percent in the vaginal group and 64.4 percent in the oral group (Pang et al., 2001).	Π
	This randomized controlled trial in Hong Kong enrolled 80 women with silent miscarriage to receive 600 mcg of misoprostol either sublingually or vaginally. The dose was repeated every three hours for a maximum of three doses. The success rate in both groups was 87.5 percent. Final determination of success was obtained at days 7 and 43 (Tang et al., 2003).	Π

## I.C.3.A. EFFECTIVENESS AND SAFETY OF MISOPROSTOL FOR SPONTANEOUS AND MISSED ABORTIONS

Summary of Evidence	Supporting Research	Gray Type
	Comparisons of dosage regimens and routes of administration	
Misoprostol may be administered orally, sublingually, or vaginally with good results. Optimal dose/ route combinations have not been firmly established	This randomized controlled trial in Hong Kong enrolled 180 women with silent miscarriage (<13 weeks) to receive 600mcg of sublingual misoprostol every three hours for a maximum of three doses and then to receive either (i) no extended course of misoprostol or (ii) an extended course of 400mcg sublingual misoprostol daily for one week. The success rates for complete uterine evacuation were similar in both groups: 92.2 percent for the no extended course group compared to 93.3 percent for the extended course group. An additional one week course of misoprostol did not improve the success rate nor shorten the duration of vaginal bleeding. It did increase the incidence of diarrhea but other side effects were similar in the two groups (Tang et al., 2006).	Π
	A prospective observational study of 25 women diagnosed with missed abortions in Hungary found that an intravaginal dose of 200 micrograms of misoprostol repeated every four hours, up to a maximum dosage of 800 micrograms, was effective in completing uterine evacuation within 10 hours of initiating the regimen in 88 percent of the patients. Five women had complete abortions after receiving the first dose of misoprostol, 13 after the second dose, four after the third, and none after the fourth. Three of 25 women (12%) failed to abort even after all four doses were administered and subsequently required surgical evacuation (Zalányi, 1998).	III





#### I.C.3.A. EFFECTIVENESS AND SAFETY OF MISOPROSTOL FOR SPONTANEOUS AND MISSED ABORTIONS

Summary of Evidence	Supporting Research	Gray Type
Use of misoprostol to evacuate the uterus after early pregnancy failure can increase patient satisfaction.	This randomized controlled trial of 80 women described previously compared surgical evacuation to medical management with 800 mcg of vaginal misoprostol for early pregnancy failure. All patients treated successfully in the misoprostol group expressed satisfaction with the treatment as compared to only 58 percent of women in the surgical group (Demetroulis et al., 2001).	Π
☑ Needs more research: Three studies.	This randomized controlled trial of 94 women described previously compared surgical curettage to medical management with 600 mcg vaginal misoprostol. More women who received medical treatment would recommend it or choose it in the future than in the surgical arm (Moodliar et al., 2005).	Π
	This randomized controlled trial of 80 women with incomplete spontaneous abortion described previously compared surgical curettage with medical management with 200 mcg of vaginal misoprostol followed by another 200 mcg of oral misoprostol taken four times daily for a maximum of five days. Only 2.5 percent of women in the misoprostol group were dissatisfied with their treatment compared to 35 percent in the surgical group (Sahin et al., 2001).	Π
Side effects of misoprostol include chills, fever, nausea, vomiting, diarrhea and headache but are generally mild and self-limiting.	This randomized controlled trial of 80 women with incomplete spontaneous abortion described previously compared surgical curettage with medical management with 200 mcg of vaginal misoprostol followed by another 200 mcg of oral misoprostol taken four times daily for a maximum of five days. All women included in the study experienced abdominal cramps and pain, vaginal bleeding, and some passage of products of conception as a result of incomplete miscarriage. The two comparison groups were reviewed after 10 days and reported that women in the misoprostol group experienced an average of 6.5 days of bleeding and the surgically treated group experienced 4.9 days of bleeding. Two patients undergoing surgery (5%) and one patient in the misoprostol group (1%) developed pelvic infection which resolved with antibiotic therapy (Sahin et al., 2001).	Π

## I.C.3.A. EFFECTIVENESS AND SAFETY OF MISOPROSTOL FOR SPONTANEOUS AND MISSED ABORTIONS

Summary of Evidence	Supporting Research	Gray Type
Women experiencing first trimester pregnancy failure treated with misoprostol experience slightly more blood loss compared to women treated with surgical evacuation but the difference is not clinically significant.	Seventy-seven women diagnosed with early pregnancy failure were enrolled in this prospective cohort study and randomized to receive either 800 mcg of dry or moistened (2 ml saline) vaginal misoprostol. Self-reported bleeding and sanitary product usage were recorded in a daily diary over a two-week period. Hemoglobin was assessed at enrollment and 2 weeks later. Women reported bleeding or spotting every day for the 14 days observed. Self-assessed heavy bleeding days were few (median 3) and usually occurred immediately after treatment. The mean decrease in hemoglobin was 0.5 g/dl. Sanitary pad use was highly variable and not related to changes in hemoglobin (Davis et al., 2004).	III
	This randomized controlled trial described previously enrolled 201 women to receive 800 mcg of misoprostol either orally or vaginally with a repeat dose 4 hours later if products of conception had not been passed. There were no differences between the groups in the incidence of fever, nausea, or vomiting. The incidence of diarrhea was elevated in the oral group. Both groups experienced similar durations of bleeding, surgical evacuation, and need for analgesia although the vaginal misoprostol group reported a slightly longer duration of pelvic pain (two days compared with one day) (Pang et al., 2001).	Π
	This randomized controlled trial described previously enrolled 80 women who were assigned either surgical curettage or medical treatment with misoprostol 200 mcg vaginally plus 200 mcg orally four times daily for a maximum of five days. The average number of days of bleeding was 6.45 in the misoprostol group compared with 4.90 in the curettage group. There were no statistically significant differences in hemoglobin between the two groups (Sahin et al., 2001).	Π





#### I.C.3.A. EFFECTIVENESS AND SAFETY OF MISOPROSTOL FOR SPONTANEOUS AND MISSED ABORTIONS

Summary of Evidence	Supporting Research	Gray Type
Women experiencing first trimester pregnancy failure treated with misoprostol experience slightly more blood loss compared to women treated with surgical evacuation but the difference is not clinically significant.	This randomized controlled trial described previously compared surgical evacuation to medical management with 800 mcg of vaginal misoprostol for early pregnancy failure. The number of women who experienced significant abdominal pain did not differ between the groups nor did duration and severity of bleeding (4.7 days in the misoprostol group versus 4.9 days in the curettage group). Post-treatment hemoglobin levels were also comparable (Demetroulis et al., 2001).	Π
Use of misoprostol for treatment of uncomplicated early pregnancy failure is less costly than either expectant management or surgical intervention.	An analysis designed to simulate the clinical outcome and health care resource utilization of surgical evacuation, misoprostol and expectant care for women presenting with uncomplicated spontaneous abortion in the first trimester of pregnancy was undertaken using clinical inputs from the scientific literature and cost analyses from the perspective of a public health care provider in Hong Kong. The results showed that misoprostol was the least costly alternative per patient, followed by expectant care and surgical evacuation. (You and Chung, 2005).	III

#### I.C.3.B. COST COMPARISONS OF MISOPROSTOL FOR PAC

Summary of Evidence	Supporting Research	Gray Type
Cost comparisons between misoprostol.	No PAC-related data found on this topic.	



#### I.C.4. USE OF PROPHYLACTIC ANTIBIOTICS FOR INCOMPLETE ABORTION

Summary of Evidence	Supporting Research	Gray Type
There is not enough evidence to determine whether women presenting with incomplete abortion should be routinely provided prophylactic antibiotics. ☑ Needs more research: One study	A Cochrane Collaboration review of one trial (Seeras, 1989) found that there is not enough evidence to determine whether women presenting with incomplete abortion should routinely be provided with prophylactic antibiotics. No differences were found in postabortion infection rates between treatment and control groups, but compliance with antibiotic treatment was very low, with only 17.4 percent of participants taking the antibiotics, and even then not completely following instructions. The treatment group received 500 milligrams of tetracycline capsules four times a day for one week. The study monitored 140 women admitted with incomplete abortion in a hospital in Harare, Zimbabwe. The search was conducted using the Cochrane Fertility Regulation Group search strategy and consisted of electronic searches of MEDLINE and POPLINE and keyword searches of the Cochrane controlled trials register (May et al., 2003).	Ι

#### I.C.5. PAIN MANAGEMENT

Pain control is used to ensure that a woman undergoing treatment for miscarriage or incomplete abortions "suffer(s) the minimum of anxiety and discomfort as well as the least risk to her health" (Margolis et al., 1993: 1). Pain has both physiological and psychological aspects. Adequate pain management requires medication for physiological pain and counseling for the psychological aspects of pain. "Physiologically, there are two types of pain for MVA patients: the deep, intense pain which accompanies the cervical dilation and stimulation of the internal cervical os and a diffuse lower abdominal pain with cramping from the movement of the uterus. Pain medication falls into three categories, namely analgesics, which alleviate the pain in the receptors of the spinal cord and brain; anesthetics, which numb physical sensation; and anxyolitics, which do not actually reduce pain but do reduce anxiety. Women also need supportive counseling and reassurance.... However, counseling should not be seen as a replacement for alleviation of pain" (Solo, 2000: 45, 46, 48). Protocols for sharp curettage usually call for general anesthesia (WHO, 1994).



Summary of Evidence	Supporting Research	Gray Type
Women require pain management for emergency treatment with sharp curettage and MVA.	A study in Kenya (year not specified) found that only 3 percent of women who had MVA and 44 percent of women who had sharp curettage received pain medication. Nearly all patients experienced pain and 60 percent described it as extreme (Solo and Billings, 1997 cited in Ringheim, 1999).	III
Strong evidence: Three studies.	A prospective longitudinal study from 1990–1991 conducted in Harare, Zimbabwe, found that 38 percent of the 834 women treated with MVA for incomplete abortion reported experiencing severe pain during the procedure, but virtually all MVA patients (93.6 percent) received no pain medication (Mahomed et al., 1994).	III
	A 2001–2003 operations research study in Senegal found that women received little or no pain medication during MVA. Reported pain was high: 65 percent of women said they felt strong pain, and 15 percent felt moderate pain during the procedure. These rates dropped after the intervention, when 74 percent of women were given a local anesthetic during treatment. (Virtually all women were prescribed pain medication, but medications were not always available or affordable). Forty percent of women post-intervention reported strong pain and 25 percent reported moderate pain during the procedure, with the remaining 35 percent reporting minimal or no pain (Dabash, 2003). See Appendix I, Dabash 2003, Senegal, for a description of the intervention.	III

Summary of Evidence	Supporting Research	Gray Type
Use of paracervical block using 1% lignocaine showed marked reduction in pain for PAC patients undergoing MVA treatment. ☑ Strong evidence: Two studies.	A randomized double blind clinical trial conducted in 1997 at the Marie Stopes Health Center in Nairobi, Kenya found that PAC patients receiving paracervical block with 1% lignocaine markedly less pain than placebo patients. Intra and postoperative assessment of pain was made using McGill's and facial expression scales The untreated group experienced significantly more pain than the treated group, especially lower abdominal pain and backache. The pain was especially marked intraoperatively, less so 30 minutes post-operatively. "During the MVA procedure for example, those in the untreated group were 10 times more likely to have severe abdominal pain than those treated with lignocaine (lidocaine)" (Egziabher et al., 2002: 533). Following MVA, abdominal pain remained moderate to severe for 47.9 percent of those receiving the placebo, while 31 percent of the treatment group did not have any abdominal pain at all and 53.5 percent had mild pain. One hundred forty-two patients were included in the study. Seventy-one PAC patients received paracervical block with 1 percent lignocaine and 71 received a placebo of paracervical block with sterile water. PAC patients had less than 16 weeks of gestation with no evidence of infection (Egziabher et al., 2002).	Π
	A 2001–2003 operations research study in Senegal found that women received little or no pain medication during uterine evacuation. Reported pain was high: 65 percent of women said they felt strong pain, and 15 percent felt moderate pain during the procedure. These rates dropped after the intervention, when 74 percent of women were given a local anesthetic during treatment. (Virtually all women were prescribed pain medication, but medications were not always available or affordable). Forty percent of women post-intervention reported strong pain and 25 percent reported moderate pain during the procedure, with the remaining 35 percent reporting minimal or no pain (Dabash, 2003). See Appendix I, Dabash 2003, Senegal, for a description of the intervention.	III





Summary of Evidence	Supporting Research	Gray Type
There is no significant difference in severity of pain for MVA PAC patients receiving paracervical block with 1% lidocaine compared to those receiving no anesthesia. Neither the paracervical block technique nor psychological support alone is sufficient in pain management for PAC patients undergoing MVA. I Needs more research: One study.	A randomized controlled trial conducted in the Dominican Republic in 2002 showed that PAC patients undergoing MVA and receiving paracervical block reported no significant difference in severity of pain experienced compared to those receiving no anesthesia. A randomized sample of 215 women with incomplete abortion, an open cervix, and pregnancies of 12 weeks or less gestational age were randomized into two groups—one of which received no anesthesia (108) and one which received two 5ml injections of 1 percent lidocaine paracervical block in the cervix-vaginal joint (107). Analgesics were not used for either group during the procedure, although some participants experiencing severe preoperative pain received analgesics six hours prior to the procedure. Both groups received counseling and psychological support before, during, and after the procedure. Anxiety and pain were measured during the preoperative, intraoperative, and postoperative period. Although the data showed an estimated 9 percent reduction of severe pain in the group receiving paracervical block, no statistically significant differences were found between the two groups regarding the level of anxiety and preoperative pain, the degree of intraoperative pain reported by the patient, nor the degree of pain evaluated by the observer. It was found that neither the paracervical block nor psychological support along "were sufficient for controlling pain from endouterine evacuation using manual vacuum aspiration, and the manual vacuum aspiration technique was associated with severe pain in approximately 50 percent of the patients." Further randomized comparative studies were recommended to "determine the effectiveness of other paracervical block techniques and the efficacy of the use of analgesics in patients suffering from incomplete abortion treated with manual vacuum aspiration." (Gómez, P.I. et al., 2004).	Π

Summary of Evidence	Supporting Research	Gray Type
Use of systemic analgesia and patient controlled sedation can effectively manage pain for MVA procedures for women with incomplete spontaneous abortions.	A study in the UK from 1998–2000 of 57 women found that pain during MVA could be managed effectively by using patient controlled systemic pain medication. Forty-one women diagnosed with missed abortions and 16 with incomplete abortions in their first trimester underwent treatment with MVA. Eight hundred micrograms of vaginal misoprostol was administered to all patients three hours prior to the procedure for the purpose of ripening the cervix and a rectal dose of 100 milligrams diclofenac sodium was given for pain. Forty-two women elected systemic analgesia and 15 opted for patient-controlled sedation. The success rate of the procedure was 100 percent, and both systemic analgesia and patient-controlled anesthesia were associated with high patient satisfaction and acceptability. All 57 women reported they would recommend MVA to a friend or relative (Gazvani et al., 2004).	III
Women who experience spontaneous abortions without surgery report the need for analgesia. ☑ Needs more research: One study.	A study in Canada from 1997–1998 with 50 women who had spontaneous abortions without surgery found that the women reported the need for pain relief. On a scale from 0 to 10, the mean worst pain score was 5.9 (Wiebe and Jannsen, 1999).	IV





#### I.C.5.B. COST COMPARISONS OF PAIN MANAGEMENT TECHNIQUES

Summary of Evidence	Supporting Research	Gray Type
Cost comparisons of pain management techniques.	No PAC-related data found on this topic.	



# II. FAMILY PLANNING COUNSELING AND SERVICE DELIVERY, STI EVALUATION AND TREATMENT, AND HIV COUNSELING AND/OR REFERRAL FOR TESTING



#### II. FAMILY PLANNING COUNSELING AND SERVICE DELIVERY, STI EVALUATION AND TREATMENT, HIV COUNSELING AND/OR REFERRAL FOR HIV TESTING

Counseling for PAC patients must be comprehensive and address the many issues related to health (including birth spacing information) and family planning methods and available family planning services, STI evaluation and treatment, and HIV counseling and testing. Women, for example, who have experienced an unintended pregnancy need to know that approximately half of all women ovulate within two to three weeks after a first trimester pregnancy has ended and, therefore, must be given information on contraception (Cunningham et al., 1997 cited in Thorstensen, 2000 and Vorherr, 1973 cited in Ortayli et al., 2001).

Family planning counseling must also provide women with information on the advantages of family planning, as well as method choices and the health implications of these selections including side effects, risks, and failure rates. Unfortunately, these important components of counseling are often excluded. A study in Bolivia in 1993, which interviewed 30 PAC patients in four hospitals, found that women were often given IUDs without being informed of any other contraceptive method choices (Rance, 1994).

Furthermore, patients need to be informed of ways to avert post-procedure infection and when it may be safe to resume sexual activity.. Women need to know what to do if complications do arise; how to recognize complications; and how, when, and where to seek care. In addition, women need to know behaviors that put them at risk for sexually transmitted infections and HIV/AIDS. Women who have experienced a miscarriage and wish to have a subsequent pregnancy also need to know the optimum time for planning a successive pregnancy.



### II.A. PRE, DURING, AND POST-TREATMENT COUNSELING

Summary of Evidence	Supporting Research	Gray Type
Information and counseling on         PAC treatment costs, follow-         up home care, and effect on         future pregnancies influences         a woman's satisfaction with         PAC.         ☑ Needs more research: Three         studies.	A study in Burkina Faso found that patient satisfaction was significantly higher after improved PAC services, including counseling on treatment, and follow-up were introduced. Nearly all patients stated that providers answered their questions readily and gave clear explanations and instructions. Prior to the intervention, 88 percent of patients said they were satisfied with the care they received, while 94 percent said they were satisfied after the intervention (Ministry of Health, Burkina Faso, 1998). See Appendix 1, Ministry of Health, Burkina Faso, for a description of the intervention.	Ш
	A study in Bolivia in 1993 that interviewed 30 PAC patients in four hospitals found that many wanted but were not given information on their condition, the treatment that would be given, and the financial costs the woman would incur. A 27 year old woman interviewed shortly after hospital admission for hemorrhage from incomplete abortion stated, "I don't know what they will do, I don't know, I don't even have any idea. But I'm frightened" (Rance, 1994: 4).	IV
	A study in Canada from 1997–1998 with 50 women who had spontaneous abortions without surgery found that "receiving adequate information was extremely important for these women. They wanted to know how much bleeding and pain to expect, how to care for themselves, whether to save the tissue, how long symptoms would last, and the possible effect on future pregnancies. They wanted reassurance that they were healthy" and to know their options for treatment (Wiebe and Jannsen, 1999: 2357). One woman reported, "My doctor wanted to let things happen naturally, but that can take up to two monthsI probably like many others wanted it finished" (Wiebe and Jannsen, 1999: 2358). Women who felt they lack sufficient information reported more intense pain (Wiebe and Jannsen, 1999).	IV
Summary of Evidence	Supporting Research	Gray Type
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Offering family planning counseling and methods at the same location where the woman receives emergency treatment can increase the proportion of women leaving with a contraceptive method. ☑ Strong evidence: Four studies.	A study in Kenya compared three different models of PAC care: 1) contraceptive options were provided on the gynecological ward by the same staff who provided PAC care; 2) contraceptive options were provided on the gynecological ward by family planning counselors; and 3) contraceptive options were provided off-site at a family planning clinic by family planning counselors. Model 1 was most effective in increasing use of family planning, with 92 percent of women receiving counseling and 82 percent of PAC patients leaving the hospital with a method compared to Model 2 sites, in which 62 percent received counseling and 63 percent left the hospital with a method and Model 3 sites, in which 54 percent received counseling and 75 percent left the hospital with a method. The intervention consisted of training PAC staff in MVA and postabortion family planning, provision of equipment and supplies, and reorganization of services. Four hundred and eighty-one women were interviewed prior to the intervention and 319 women were interviewed post-intervention. Prior to the intervention, only 7 percent of women had received family planning counseling, 22 percent had decided to use family planning, and only 3 percent received a contraceptive method. In the post-intervention period, 68 percent of women received family planning counseling, 69 percent decided to begin using contraceptives, and of these, almost 70 percent received a method prior to leaving the hospital (Solo et al., 1999a in Huntington and Piet-Pelon, editors, 1999; Solo et al., 1998 cited in Billings, 1998).	III
	A study in Burkina Faso found that providing family planning counseling and services in the same place as PAC emergency treatment increased patients' knowledge and intent to use family planning. Before the intervention, women treated for abortion complications were referred to an off-site family planning clinic for services. Only 30 percent of women received counseling about family planning, and although 64 percent said they intended to use contraception, only 57 percent received a method. As a result of the integrated family planning counseling and services introduced in the intervention, 94 percent of women reported being counseled on family planning. Eighty-two percent of women said they intended to practice family planning, and 83 percent left the hospital with a method. (Ministry of Health, Burkina Faso, 1998). See Appendix I, Ministry of Health, Burkina Faso, 1998, for a description of the intervention.	III





Summary of Evidence	Supporting Research	Gray Type
Offering family planning counseling and methods at the same location where the woman receives emergency treatment can increase the proportion of women leaving with a contraceptive method. ✓ Strong evidence: Four studies.	A 1996–1998 intervention study in a referral hospital in Lima, Peru, tested a model where all PAC services were provided in an obstetrics and gynecology emergency room on an outpatient basis. Doctors were trained in MVA and improved clinical practices, counseling on medical care and family planning, and provision of contraceptive methods. The original study utilized a pre-post intervention design with no control group. A follow-up assessment of the same outcomes was conducted in 2000–2002 to assess the sustainability of the intervention without outside assistance. Prior to the study, women receiving emergency treatment were referred to another location for family planning services. At baseline, 38 percent of patients were told they could become pregnant again almost immediately, 18 percent received family planning counseling and only 2 percent left with a method. In the immediate post-intervention period, the proportions of women receiving information about their return to fertility and family planning rose to 65 percent and 78 percent, with 59 percent leaving with a contraceptive. Three years later, 72 percent were informed of their return to fertility. There were also significant increases in women receiving a method, 48 percent of patients in 1997 and 18.8 percent of patients in 2000 were given a follow-up family planning appointment (Benson and Huapaya, 2002). See Appendix I, Bensen and Huapaya, 2002, Peru, for a description of the intervention.	III
	A descriptive study of 2,050 women from September to December of 1992 at Harare and Parirenyatwa Hospitals in Zimbabwe showed that by providing family counseling and services at the same site where women with abortion complications were treated, 97 percent were discharged with a contraceptive method they had chosen. Prior to providing on-site family counseling, only 34 percent of women reported going home with some form of contraceptive method (Mahomed et al., 1997).	III

Summary of Evidence	Supporting Research	Gray Type
Counseling patients in family planning methods will increase family planning uptake. ☑ Strong evidence: Three studies.	An intervention study from 1997–1998 in Senegal introducing integrated postabortion services found that the proportion of women reporting being counseled on family planning increased from 18 percent to 34 percent after training. Of those counseled, 56 percent left with a method of contraception before the intervention (10 percent of all patients), while 76 percent of women counseled (26 percent of all patients) left the hospital with a contraceptive method after the intervention. Training also increased the proportion of providers who offered family planning services. Before the intervention, 31 percent of providers interviewed reported counseling women on family planning and 18 percent of providers reported counseling women and 40 percent said they gave women contraceptive methods (Centre de Formation et de Recherche en Santé de la Reproduction and Clinique Gynécologique et Obstétricale CHU A. le Dantec, 1998). See Appendix I, Centre de Formation, 2003, Senegal, for a description of the intervention.	III
	A study conducted in 1998 of 191 postabortion care patients in a hospital in Mexico City, Mexico, of the Mexican Institute of Social Security found that all of the 75 PAC patients who accepted contraception were offered contraceptive information; but among the 116 PAC patients who did not accept contraception, only 26.7 percent of them received contraceptive information. For the 75 PAC patients who accepted contraception, 75 percent considered the contraceptive information provided satisfactory; all the 116 PAC patients who did not accept contraceptive information provided was inadequate. The study administered questionnaires to two groups of women who presented for PAC: those who accepted contraceptives and those who did not (García-Hernández et al., 2000).	III





Summary of Evidence	Supporting Research	Gray Type
Counseling patients in family planning methods will increase family planning uptake. ☑ Strong evidence: Three studies.	A study at Temeke Municipal Hospital in Dar es Salaam from January 2001 through July 2002 assessed the need for postabortion contraception among 788 women who had abortions. Women received counseling on the risk of contracting STDs/HIV and contraception methods. Following counseling, 708 of the 788 women left the hospital with a contraception method of her choice. A follow up study of 526 women of these 708 who left the hospital with a contraception method revealed that 86 percent of these women were still using contraception 3–6 months after receiving postabortion counseling (Rasch et al., 2004).	III
Women who experience either induced or spontaneous abortions and desire another pregnancy should wait at least six months before becoming pregnant again to reduce the incidence of maternal anemia, premature rupture of membranes, low birth weight and preterm delivery in a successive pregnancy. ✓ Strong evidence: One study.	A retrospective cross-sectional study of 258,108 women between 1985 and 2002 in Latin America found those delivering singleton infants less than 6 months after a previous abortion had a greater risk for adverse maternal and perinatal outcomes than women delivering infants 18 to 23 months after a previous abortion. The post-abortion interval, defined as the time elapsed between the day of the abortion and the first day of the first menstrual period for the index pregnancy, was significantly related to adverse outcomes such as maternal anemia, premature rupture of membranes, low birth weight (less than 2500g), very low birth weight (less than 1500g), preterm delivery (less than 37-week gestation), and very preterm delivery (less than 32-week gestation). No distinction was made between women who had spontaneous and induced abortions in this study (Condé-Agudelo et al., 2005).	III

Summary of Evidence	Supporting Research	Gray Type
Family planning counseling and services reduce repeat abortions. ☑ Strong evidence: One study.	A pilot program to improve the provision of family planning to PAC patients to avoid repeat abortions in a single public maternity hospital in Turkey has been successfully expanded into 10 public facilities throughout Turkey and then into 12 private sector and two public sector hospitals. Early evidence that "women were relying on repeat abortion to control their fertility made it clear that the Turkish family planning program, despite its successes, was unable to meet the contraceptive needs of its clients" and, therefore, became the impetus for providing family planning to PAC patients (Senlet et al., 2001: 91). The Turkish Ministry of Health initiated a pilot postabortion family planning program from 1991–1993 to link these services in a selected facility where large numbers of abortions were provided. The Turkish Ministry of Health set up structural links between abortion and family planning services; overcame staff resistance to providing PAC family planning services by conducting both a study on the safety of IUD insertions following PAC (which showed no increased risk of infection or expulsion) and conducting a series of seminars to reeducate staff on contraceptive technology; and provided accurate information to PAC patients about family planning. For example, "when women first came to the clinic to verify their pregnancy and to request an abortion, they attended a group session in which each contraceptive method was explained in detail" (Senlet et al., 2001: 91). At their appointment for an abortion, women met with a family planning counselor for a private counseling session. Contraceptive among abortion clients increased from 65 percent in 1991 to 97 percent in 1992. The pilot project resulted in more effective contraceptive use, which led to the "reduction of repeat abortions." From 1992–1998, the same strategy from the pilot project was expanded to 10 more large public hospitals. These interventions then served as prototypes in the curriculum of Turkey's MCH program, "Postabortion Family Planning,"	III

2



Summary of Evidence	Supporting Research	Gray Type
PAC delivery models that provide on-site FP counseling and contraceptives can result in: (a)women using highly effective contraceptives; (b) fewer unplanned pregnancies; and (c)reduced repeat abortions one year later.	A longitudinal study, carried out between 1996 and 1998, that compared results from the two largest public hospitals in Zimbabwe where the intervention site provided on-site counseling and access to free contraceptives found that significantly more women who had access to contraceptive services on-site following postabortion care used highly effective methods of contraception (i.e., oral contraceptives, Depo-Provera, the IUD, implants, barrier methods, and sterilization) and had fewer unplanned pregnancies and fewer repeat abortions. The proportion of women choosing a modern method of contraception immediately following postabortion care was 96 percent at the intervention site compared to 5 percent at the control site. There were twice as many unplanned pregnancies among patients at the control site during the year-long follow-up compared to the intervention site (96 compared to 42). A higher percentage of women in the control site than in the intervention site had a repeat abortion during the one-year follow-up (5.3 percent compared to 2.5 percent). Only women who stated a desire to postpone their next pregnancy for at least two years from the time of receiving postabortion care and who kept at least one-follow up appointment	III
	were included in the study. Following their treatment for incomplete abortion, 271 women at the intervention site were provided free, on-site family planning services prior to discharge. These services included information and counseling about short- and long-term fertility control and the option to receive condoms, oral contraceptives, or the injectable Depo-Provera prior to leaving the hospital. Clients who desired implants, IUDs, female sterilization, or other methods were given referral appointments. At the control site, the usual discharge procedures were followed with no special attention paid to the 258 women's postabortion contraceptive needs, although contraceptives were available for a nominal fee in the nearby maternity ward, a family planning clinic adjacent to the maternity ward, and other municipal clinics. Women at both sites were followed for one year, with study participants asked to return for follow-up interviews every three months. At follow-up, women at the control site were provided with information about where they could obtain contraceptives, but only if they asked. Women in the intervention site were provided with free contraceptive refills or different contraceptives if they were not satisfied with their original choice. Approximately one-fifth of women in the intervention site received home visits when they did not present for follow up visits. Women were tested for pregnancy and positive tests were given a second test to reconfirm the results (Johnson et al., 2002).	

Summary of Evidence	Supporting Research	Gray Type
Providing FP counseling can increase the proportion of women agreeing to use a contraceptive method before leaving the health facility that provided PAC.	A study in Malawi from 1995–1996 found that of 464 PAC patients counseled for contraception, 80.4 percent agreed to use contraceptives after the intervention, as compared to 4.1 percent prior to the intervention. The intervention consisted of asking PAC patients if she would like to receive further counseling, information, and education on contraception. Those who agreed were counseled individually after the emergency care, when they had rested adequately, but before discharge. Each patient was given information on available contraceptives, how they are used and how they work, who can use which method, and their side effects (Lema and Mpanga, 2000).	IV
Improving counseling and clinical skills can increase the proportion of women being discharged with a contraceptive method and an expanded method mix. ☑ Strong evidence: One study.	A 2001 operations research study to expand postpartum and postabortion family planning in five hospitals in Honduras found that improving counseling and clinical skills led to an increase in the proportion of women being discharged with a contraceptive method and to an expansion of the method mix to a greater use of temporary methods, in particular injectables. On average, postabortion women surveyed were slightly older, with a higher number of pregnancies, and more likely to be single than postpartum women. Approximately one-quarter of women receiving postabortion care said they wanted to become pregnant when they did, indicating they probably experienced a spontaneous abortion and might want to become pregnant again. However, the only contraceptive method immediately available to women before the intervention was voluntary surgical contraception (VSC), which was selected by 13 percent of postabortion women. The midterm evaluation showed a movement toward temporary methods; only 5 percent of contraceptive acceptors (34 percent of postabortion women) received VSC. The rest were discharged with injectables (60 percent), IUDs (25 percent), or oral contraceptives (10 percent). After the intervention, 54 percent of patients were discharged with a method. Most women chose injectables (79 percent) or oral contraceptives (11 percent), with the remainder choosing condoms, IUDs or VSC. (It is worth noting that (continued)	III





Summary of Evidence	Supporting Research	Gray Type
<ul> <li>Improving counseling and clinical skills can increase the proportion of women being discharged with a contraceptive method and an expanded method mix.</li> <li>☑ Strong evidence: One study.</li> </ul>	(continued) all 21 percent of women who reported wanting a method but not receiving it wanted IUDs, or VSC, but services could not be provided before they were discharged). This study was a follow-on to a 1996–1999 quasi-experimental, pre- and post-intervention operations research study in Hospital Escuela, the largest hospital in Honduras, that tested an intervention to improve postpartum and postabortion ("post-obstetric event") family planning counseling, provision of methods, and intent to use among women (Medina et al., 1998). The 2001 operations research study was conducted in five additional hospitals to help the MOH expand the Hospital Escuela model between 1999 and 2001. A repeated measures pre/post intervention design with no comparison group was used to evaluate the impact of training 164 providers (including physicians, nurses, nurse auxiliaries, social workers, and educators) in counseling, communication, FP methods and informed choice, and training 65 nurses and physicians in providing medical methods (e.g., IUD insertion, mini-laparotomy). Medical equipment and educational materials were provided to the five hospitals and referring health centers, and each hospital held quarterly meetings to discuss most recent data collected through service statistics, patient surveys, and supervision visits. Of the 1,774 women surveyed, 154 had received postabortion care. They received the same FP services from the same providers as the postpartum women, except that they had a more immediate need for contraception to prevent a subsequent pregnancy and were able to use hormonal methods, as they were not breastfeeding. Study sites were chosen purposively; among the seven hospitals with the highest regional maternal mortality nationally, the five hospitals with the most favorable conditions for such an intervention were chosen, and on average, admissions for abortion complications were about 10 percent of deliveries. Sampling consisted of interviewing all women in a two-week period for each of six quarterly sur	Ш

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Summary of Evidence	Supporting Research	Gray Type
IUD use postabortion does not increase the incidence or severity of early complications. ☑ Strong evidence: One study.	A study in Finland in 1971 found that insertion of the IUD neither increased the incidence or severity of early complications nor lengthened the in-hospital stay after the abortion. A Copper T-200 was inserted immediately after legal abortion in 154 women. Early complications during the operation and within the first eight postoperative weeks were recorded and compared with those of a control group of 144 women having only had abortion and no IUD (Timonen and Luukkainen, 1973).	III
Use of IUDs in the immediate postabortion period is safe. ☑ Strong evidence: One study and one review.	A study of 100 women with inevitable or incomplete first trimester abortions at Al-Hussein University and El-Monera General Hospitals in Egypt who had selected the IUD were randomly selected to receive either immediate postabortion IUD insertion or IUD insertion two weeks later. Also prior to insertion of IUDs, the women were counseled with emphasis on three main points: (1) fertility returns rapidly and women may become pregnant again right away; (2) availability of contraception methods, particularly IUDs; and (3) family planning information and follow-up. Results showed that of the 69 women who received IUD insertion immediately postabortion, there were no cases of perforation or pelvic infections. This study indicated that insertion of an IUD immediately after abortion is safe and could be offered to PAC patients (Moussa, 2001).	III
	A 2004 Cochrane review of postabortion insertion of IUDs found that insertion of an IUD immediately after abortion is "both safe and practical" (Grimes et al., 2004). The review included nine randomized controlled trials (Grimes et al., 2004).	II





Summary of Evidence	Supporting Research	Gray Type
Women who choose to use IUDs or Norplant postabortion find both contraceptive methods safe and highly effective.	A prospective cohort study conducted between 1996 and 1998 of 150 women in Istanbul, Turkey, compared results for 50 women who used IUDs, 50 women who used Norplant, and 50 women who relied on withdrawal, also known as coitus interruptus (CI), immediately postabortion. After one year, those using Norplant had a 95 percent continuation rate; those using the IUD had a continuation rate of 90 percent but only 59 percent of women continued to practice withdrawal or continued to postpone the use of contraception. Continuation rates three years later were	III
☑ Strong evidence: One study.	61.3 percent for the IUD and 60.8 percent for Norplant, but only 34.1 percent for those using traditional methods such as CI. There were no pregnancies in either group of women using the IUD or Norplant, but there were three pregnancies in the first year among the other 50 women. Antibiotics and uterotonics were rarely prescribed. Women were advised to abstain from vaginal intercourse for two weeks. The expected side effects and signs of possible complications of abortion were explained and women were told to return immediately to the clinic if any one of them occurred. All participants were asked to return at two weeks, six weeks, six months, and one year after the abortion and any time they needed to consult with medical staff (Ortayli et al., 2001).	

Summary of Evidence	Supporting Research	Gray Type
Use of IUDs after spontaneous and induced	A study analyzing literature on randomized, controlled trials of IUD insertion after spontaneous and induced abortions concluded that such method of post-abortion contraception is both safe	Ι
abortions is both safe and	and effective. Combined, the eight studies included in the analysis yielded 4,476 woman-years of	
highly effective.	data. Each trial compared three different types of IUDs in different settings including insertion	
Strong evidence: One review	after induced surgical abortion and insertion after curettage for miscarriage. Patients in most	
El strong evidence. One review.	assessed. Of the studies analyzing insertion after induced surgical abortion, complication rates	
	were low with only three perforations observed in 2,348 insertions, 157 expulsions, 70 intrauterine	
	or ectopic pregnancies, and 12 cases of pelvic inflammatory disease. The study assessing insertion	
	after miscarriage also found complication rates to be low with only one perforation in 1,060 insertions 128 expulsions 21 intrauterine pregnancies and three cases of pelvic inflammatory	
	disease. Both groups of data had continuation of use rates ranging from 54 percent to 64 percent	
	after one year. Other studies included in the analysis observed continuation rates as high as 91	
	percent. Discontinuation rates as a result of pelvic inflammatory disease were low and ranged	
	from 0.0 to 0.8 per 100 women one year following insertion. Copper devices were associated with lower failure rates than those without copper, and "T" shaped devices were associated with	
	lower expulsion rates than were others. One study analyzing expulsion rates found no significant	
	differences between women who had immediate post-abortion insertion of an IUD compared	
	to those with a three to five week delayed insertion. However, 40 percent of the women in this	
	study who had agreed to delayed insertion failed to return for the procedure. Lastly, gestational age may increase the risk of expulsion, although data on this relationship is limited (Stanwood et	
	al., 2001).	





Summary of Evidence	Supporting Research	Gray Type
<ul> <li>The availability of free contraceptive commodities may increase the likelihood patients will report that they intend to use a contraceptive and will be discharged with a method.</li> <li>☑ Strong evidence: One study.</li> </ul>	A 2000–2003 operations research study to increase postabortion family planning in Perm, Russia, found that women who were offered a contraceptive method free of charge were significantly more likely to report that they intended to use a modern method and that they intended to begin using contraception immediately as compared to PAC patients who only received counseling. This study used a quasi-experimental time series design to compare two interventions to institutionalize pre-discharge postabortion counseling and family planning services in five sites (two hospitals and three outpatient facilities). Model I consisted of training providers in family planning counseling and interpersonal communication skills and developing and supplying provider job aids and client education materials on postabortion skills and developing and supplying provider job aids and client education materials on postabortion skills and developing and supplying provider job aids and client education materials on postabortion skills and developing and supplying provider job aids and client education materials on postabortion skills and developing and supplying provider job aids and client education materials on postabortion supply of condoms, pills, DMPA, or IUD. The interventions were evaluated by comparing women assigned to each of the interventions to a "control" group of women attending the same facilities prior to the intervention. Researchers interviewed 1,516 women and observed 40 client-provider interactions prior to the clients being discharged. In addition, they interviewed 49 providers and conducted 1,079 13-month, follow-up interviews with clients to assess contraceptive use and subsequent pregnancies. Among women in the Model I group who wanted to use a family planning thod to postpone pregnancy, 88 percent intended to use a modern method and 11 percent were undecided whether to use a modern or traditional method. The proportion of women intending to use a modern method was significantly lower in the Model I (69.0 percent) and	III

Summary of Evidence	Supporting Research	Gray Type
The availability of free contraceptive commodities may increase the likelihood patients will report that they intend to use a contraceptive and will be discharged with a method.	(continued) three-month free supply (Model II), and both groups were significantly more likely than the control group to be using a modern method, or any method. Just over half (53.3 percent) of control group women were using a modern method, compared to 62 percent of Model I and 66.7 percent of Model II women. Use of any method after one year was 69.8 percent in the control, 77.3 percent in Model I and 78.3 percent in Model II groups. While less than 2 percent in any group said they intended to use a traditional method in their exit interview, the follow-up interviews found between 12 percent and 17 percent of women were using withdrawal or natural family planning (Savelieva et al., 2003).	Π





Summary of Evidence	Supporting Research	Gray Type
<ul> <li>Providing on-site counseling and access to free contraceptives following emergency treatment can result in:</li> <li>(a) increased use of highly effective contraceptives;</li> <li>(b) decreased unplanned pregnancies; and</li> <li>(c) reduced repeat abortions.</li> <li>☑ Strong evidence: One study.</li> </ul>	A longitudinal study, carried out between 1996 and 1998, that compared results from the two largest public hospitals in Zimbabwe where the intervention site provided on-site counseling and access to free contraceptives found that significantly more women who had access to contraceptive services on-site following postabortion care used highly effective methods of contraception (i.e., oral contraceptives, Depo-Provera, the IUD, implants, barrier methods, and sterilization) and had fewer unplanned pregnancies and fewer repeat abortions. The proportion of women choosing a modern method of contraception immediately following postabortion care was 96 percent at the intervention site compared to 5 percent at the control site. There were twice as many unplanned pregnancies among patients at the control site during the year-long follow-up compared to the intervention site (96 compared to 42). A higher percentage of women in the control site than in the intervention site had a repeat abortion during the one-year follow-up (5.3 percent compared to 2.5 percent) (Johnson et al., 2002). See Appendix I, Johnson et al., 2002, Zimbabwe, for a description of the intervention.	III

Summary of Evidence	Supporting Research	Gray Type
Male involvement with counseling and fam When asked, many PAC patients wou in learning about their partners' hear	<i>illy planning service delivery</i> uld like to have their husbands receive the same counseling and information that they receive. Most men th conditions as well as family planning information.	are interested
Hospital policies that ban men from obstetrical and gynecology wards make it difficult for male involvement and discourage male participation. Strong evidence: One study.	A study conducted in six hospitals in Egypt (year not specified) on counseling husbands of PAC patients found that "Many hospitals bar men from obstetrics/gynecology wards. One husband interviewed during this project described his experience as follows: 'I spent two nights in the hallway; it was so inconvenient. Every few hours the janitors would come and ask me to go away because they needed to scrub the floors.' These barriers make it difficult for men to get involved even if they want to, and may discourage many from even visiting their wives at the hospital'' (Abdel-Tawab et al., 2002: 191). One hundred and thirty-six patients were in the intervention group and 157 patients were in the control group. Counseling was only given to husbands of consenting patients. Consenting postabortion patients were randomly assigned to either an intervention or a control group. Husbands in the intervention group did not. A follow-up interview was conducted with both groups of patients one month after hospital discharge (Abdel-Tawab et al., 2002).	III







Summary of Evidence	Supporting Research	Gray Type
After receiving the patient's expressed and informed consent, counseling husbands of PAC patients separately on follow-up care, return to fertility, and family planning can increase family planning usage and physical, material and emotional support for PAC patients during recovery. ☑ Strong evidence: One study.	A study conducted in six hospitals in Egypt found that counseling husbands of PAC patients led to a greater increase in family planning and greater instrumental and emotional support to their wives. Husbands who were counseled were 50 percent more likely to provide a high level of material support to their wives, 30 percent more likely to provide their wives with a high level of emotional support, and 60 percent more likely to provide a high level of support for the use of family planning, as compared to husbands who were not counseled. When other variables such as the severity of postabortion complications were controlled for, women who received high levels of emotional support from their husbands were 70 percent more likely to report good physical recovery (i.e., they were less likely to report having had symptoms such as fever, bleeding, pain, and weakness). Women who reported receiving high levels of emotional support from their husbands. Husbands were counseled concerning the patient's need for rest and adequate nutrition; postabortion warning signs indicating the need for follow-up care; the possibility of a return to fertility within two weeks; the need for family planning to avoid unwanted or poorly timed pregnancy; and a source of referral care should such care be necessary. One hundred and thirty-six patients were in the intervention group and 157 patients were in the control group. Counseling was only given to husbands of consenting patients. Nurses read a consent statement to the patient only after she had received complete medical treatment, including counseling, and only after it was determined that she was in stable physical and emotional condition. Husbands received counseling by the attending physician in private away from their were. Thirty physicians received one day of orientation on the content and procedures for counseling the husbands of PAC patients, in conjunction with training on the use of MVA and patient counseling. A posttest-only group design was used. Consenting postabortion patie	Π

Summary of Evidence	Supporting Research	Gray Type
After obtaining expressed consent from the PAC patient, many male partners want more information about their partner's conditions during PAC and more information on family planning.	A study in Kenya conducted from 1995 and 1997 evaluated an intervention consisting of training PAC staff in MVA and postabortion family planning, provision of equipment and supplies, and reorganization of services. In this study, 481 women who received postabortion care were interviewed prior to the intervention and 319 women were interviewed post-intervention. Twenty-nine percent of the women's husbands or partners were interviewed during the post-intervention. Only 14 percent of the men interviewed said that they had received any information about their wives' condition and 94 percent said they would have liked to receive such information. Only 15 percent of men received family planning counseling. Of the men who did not receive family planning counseling. Of the men who did not receive family planning counseling.	IV
E strong evidence. One study.	Ninety-three percent of the women said they would have liked to have had their husbands receive family planning information (Solo et al., 1999a in Huntington and Piet-Pelon, editors, 1999). See Appendix I, Solo et al., 1999a and Solo et al., 1998, Kenya, for a description of the intervention.	





Summary of Evidence	Supporting Research	Gray Type
Male partners desire to understand more about emergency treatment, care of the woman after the procedure, cause for women's health problems, and contraceptive methods. ☑ Enough evidence for action; needs more research: One study.	A 1999–2001 intervention study conducted in a maternity hospital in Sucre, Bolivia, found 38 percent of male partners interviewed received any information about the health status of their partner, most commonly about the uterine evacuation procedure (97 percent). After obtaining consent from the woman, male partners who were present at the time of discharge were interviewed about their role in the abortion experience; their perspectives toward contraceptive use within the couple, including plans for the postabortion period; their understanding of the woman's health status; possible complications and factors related to return to normal life activities; and the forms of social support that they would offer once the couple returned to their home. Of the 97 men who were not informed at all about their partner's health status, 60 percent expressed that they would have liked to have understood more, particularly about: the procedure, care for the woman after leaving the hospital, possible causes of the woman's health problem, ways of ensuring that the same problem does not happen again, and contraceptive methods. Eighty percent of all men interviewed had many remaining questions and concerns, including whether the woman would be able to be pregnant once again and about the overall consequences of the procedure or "operation." The pre/post intervention study was conducted in maternity hospitals in La Paz, Santa Cruz, and Sucre, but male partners were only included in Sucre (Billings et al., 2003b). See Billings et al., Bolivia 2003b, Honduras, for a description of the intervention.	III
Many women want their husbands present for counseling associated with PAC. ☑ Strong evidence: One study.	Sixty-five percent of PAC patients in an intervention study in Senegal said they would like their husband present for family planning counseling, in contrast to 32 percent who did not want their husband present (the remaining 2 percent were undecided). The level of support for couple counseling sessions changed moderately after the intervention, from 70 percent to 62 percent. An important reason to counsel men is to gain their support for family planning and to encourage them to talk to their partners. While less than half of women interviewed said their partner approved of family planning (44 percent at baseline and 47 percent after the intervention), nearly one third said their partner disapproved (27 percent pre and 30 percent post), and almost another third were unsure (30 percent at baseline and 32 percent at follow-up) (Centre de Formation et de Recherche en Santé de la Reproduction and Clinique Gynécologique et Obstétricale CHU A. le Dantec, 1998). See Appendix I, Centre de Formation, 1998, Senegal, for a description of the intervention.	III

Summary of Evidence	Supporting Research	Gray Type
Many women want their partners to be informed about their condition, treatment they are receiving, follow-up care, and family planning methods they intend to use. ☑ Strong evidence: One study.	A 2001 operations research study to expand postpartum and postabortion family planning in five hospitals in Honduras found that most women wanted their partners to be informed about their condition. Over 70 percent of women receiving postabortion care said her partner knew she had been hospitalized, and of these, more than two-thirds of partners were at the hospital with the patient. Most women wanted hospital staff to inform their partners about the treatment they were receiving (70 percent) as well as about follow-up care and family planning methods they could use (80 percent). This study was a follow-on to a 199601999 quasi-experimental, pre/post intervention operations research study in Hospital Escuela, the largest hospital in Honduras, which tested an intervention to improve postpartum and postabortion ('post-obstetric event'') family planning, counseling and provision of methods, and intent to use among women. (Medina et al., 1998 and Medina et al., 2001). See Appendix I. Medina et al., 2001, Honduras, for a description of the intervention.	III
<ul> <li>Men need counseling on when sexual relations can resume following PAC.</li> <li>☑ Enough evidence for action: One study.</li> </ul>	A study in Bolivia from 1995–1996 with PAC patients found that men were not counseled about when sexual relations can resume following PAC and did not listen to their sexual partners. One PAC patient stated, " one should not have sexual relations for 15 days following intercourse. So for 15 days I thought I could sleep. But I couldn't. My husband did not believe me" (Rance, 1997: 34).	IV





Summary of Evidence	Supporting Research	Gray Type
Male partners desire to understand more about emergency treatment, care of the woman after the procedure, causes for women's health problems, and contraceptive methods. ☑ Enough evidence for action; needs more research: Two studies	A 1999–2001 intervention study conducted in a maternity hospital in Sucre, Bolivia, foun 38 percent of male partners interviewed in the Hospital "Jaime Sánchez Porcel" received ar information about the health status of their wife/partner, most commonly about the uterir evacuation procedure (97 percent). After obtaining consent from the woman, male partners wh were present at the time of discharge were interviewed about their role in the abortion experience their perspectives toward contraceptive use within the couple, including plans for the postabortion period, their understanding of the woman's health status, possible complications and factor related to return to normal life activities, and the forms of social support that they would offer once the couple returned to their home. Of the 97 men who were not informed at all about the partner's health status, 60 percent expressed that they would have liked to have understood mor particularly about the procedure, care for the woman after leaving the hospital, possible cause of the woman's health problem, ways of ensuring that the same problem does not happen agair and concrens, including whether the woman would be able to be pregnant once again and about the overall consequences of the procedure or "operation." (Billings et al., 2003b). See Append L Billings et al., 2003b Bolivia, for a description of the interviewed had many remaining question and concerns, including whether the woman would be able to be pregnant once again and about the overall consequences of the procedure or "operation." (Billings et al., 2003b). See Append	III
	A qualitative study in Kenya using 74 in-depth interviews with female adolescents, women having abortions, providers, and leaders, in addition to 32 focus group discussions with married men and women, adolescent males and females, community health workers, CSWs, teachers, elderly men and women, and single men and women found that male involvement in PAC in descending order of frequency included abandoning the girl or woman; paying for care; influencing the decision to seek PAC care; identifying or accompanying woman or girl to a provider; offering emotional support; and providing care and accommodation during and after PAC (Rogo et al., 1999).	IV

Summary of Evidence	Supporting Research	Gray Type
Adolescent PAC patients may have substantially older male partners. ☑ Enough evidence for action; needs more research: One study.	A 1997 study in Dar es Salaam, Tanzania, of 89 adolescents who were PAC patients found that over 72 percent of the male partners of these adolescent PAC patients were over age 30, and that "the male partner exploits and takes advantage of the adolescent girl, who, without realizing what she exposes herself to, ends up in a life threatening situation. Therefore, it is the behavior of these adult men that ought to be targeted in the first place in Tanzania" (Silberschmidt and Rasch, 2001: 1822). In addition, "while the 'sugar daddies' trust that they are having 'safe sex' with their young girlfriends, they may, in fact, be jeopardizing their own health, that of their wife and other partners" (Silberschmidt and Rasch, 2001: 1822).	V







### **II.C. STI EVALUATION AND TREATMENT**

Summary of Evidence	Supporting Research	Gray Type
<ul> <li>Bacterial vaginosis significantly increases the risk of spontaneous abortion nearly 10-fold.</li> <li>✓ Strong evidence: One meta- analysis.</li> </ul>	A meta-analysis of 18 studies with 20,232 patients found that bacterial vaginosis significantly increased the risk of spontaneous abortions nearly 10-fold. "More controlled studies are needed to make more reliable conclusions about the effectiveness of the antibiotic treatment of bacterial vaginosis (BV) in high risk patients." (Leitich et al., 2003: 139).	Ι
Women experiencing two or more spontaneous abortions have a high prevalence of toxoplasmosis gondii compared to women without this same history. The extent to which toxoplasmosis causes habitual abortions remains controversial.	A study of 285 women who had two or more repeat spontaneous abortions in Kashmir found high prevalence of the IgM antibody against Toxoplasma gondii in women with repeat abortions (49.5 percent) compared with controls (8.9 percent) who did not have a history of spontaneous abortions. "The extent to which toxoplasmosis causes habitual abortion is still controversial" (Zargar et al., 1998: 136).	III

#### **II.C. STI EVALUATION AND TREATMENT**

Summary of Evidence	Supporting Research	Gray Type
Women accessing PAC services often do not receive STI and HIV prevention and care information or services due to lack of training by physicians and midwives in dual protection. I Needs more research: One study.	A study in South Africa, where physicians observed 96 abortion procedures performed by 40 midwives in 25 sites, found that only 1 percent of clients had received condoms. Neither physicians nor midwives were trained in dual protection. "In light of the high incidence of HIV infection in South Africa, the finding that so many women did not receive male or female condoms highlights a missed opportunity. All of the abortion clients who participated in the evaluation had had unprotected intercourse and were thus at risk of STIs and HIV infection in addition to unwanted pregnancy. Postabortion counseling should have been used to counsel women about preventing STIs and HIV and not just the prevention of further unwanted pregnancies. However, because both providers and clients traditionally have considered the condom a method of STI prevention, it often is not routinely offered in the context of contraception services" (Dickson-Tetteh and Billings, 2002: 149). The evaluation was conducted at 37 public health care facilities in South Africa's nine provinces during 2000. Data were collected by observing abortion procedures and counseling sessions, reviewing facility records and patients' charts, and interviewing patients and midwives (Dickson-Tetteh and Billings, 2002. Tetteh and Billings, 2002.	III





### **II.D. HIV COUNSELING AND TREATMENT**

Summary of Evidence	Supporting Research	Gray Type
Women who are HIV positive are at an increased risk for spontaneous abortion.	A study in Zimbabwe carried out from 1998 to 2001 with a survey of 209 women affected by HIV/AIDS and in-depth interviews with 59 women found that of 41 pregnancies of HIV-positive women, six ended in miscarriages (Feldman and Maposhere, 2003).	IV
Strong evidence: Five studies and two systematic reviews.	In a study from Malawi, 30 percent of 53 HIV-positive women reported a history of spontaneous abortion compared with 15 percent of 289 seronegative controls (Miotti et al., 1990 cited in Temmerman et al., 1994).	III
	A study of the impact of HIV infection on pregnancy and maternal and fetal outcome from 1992– 1993 in Manipur, India, found that symptomatic HIV infection is associated with a significantly increased rate of spontaneous abortion, with 18.2 percent of HIV-positive women experiencing spontaneous abortions as compared to 3.7 percent of HIV-negative women. One hundred and sixty HIV-positive and 164 HIV-negative pregnant women were recruited into a prospective study. Mother and infant were followed until six weeks postpartum. Asymptomatic HIV infection was not associated with adverse pregnancy outcomes (Kumar et al., 1995).	III
	A study of 218,357 women in Italy tested for HIV between 1989 and 1994 when they presented to hospitals for delivery, induced abortion, or treatment for a miscarriage found that the HIV infection rate was significantly higher among women who had spontaneous abortion (Abeni et al., 1997 cited in de Bruyn, 2003).	III

#### **II.D. HIV COUNSELING AND TREATMENT**

Summary of Evidence	Supporting Research	Gray Type
Women who are HIV positive are at an increased risk for spontaneous abortion.	An observational study at two prenatal clinics in Abidjan, Cote d'Ivoire, showed that HIV-positive women had a significantly higher risk of miscarriage than HIV-negative women (Berer, 1999 cited in de Bruyn, 2003).	III
Strong evidence: Five studies and two systematic reviews.	A WHO/UNAIDS literature review found that women with HIV in Africa were 1.47 times more likely to have had a miscarriage than HIV-negative women. HIV-positive women may have higher rates of infection and complications with surgical procedures and therefore, medical management of spontaneous abortions may be particularly advantageous (McIntyre, 1999 cited in de Bruyn, 2003).	Ι
	A meta-analysis of 31 prospective studies published between 1983 and 1996 found a correlation between HIV infection and spontaneous abortion (Brocklehurst and French, 1998 cited in de Bruyn, 2003).	Ι
Asymptomatic HIV positive adolescents on antiretroviral therapy are at no greater risk for spontaneous abortion, IUFD, IUGR, or fetal, infant or maternal death.	A study from 1997 to 2001 of 30 asymptomatic HIV-positive pregnant adolescents in India found that of the 27 who received antiretroviral therapy, there were no "intrauterine fetal demise/death (IUFD), intrauterine growth retardation (IUGR), spontaneous miscarriages, or fetal, infant, or maternal deaths" (Chibber and Khurranna, 2003: 1). Four of the 30 pregnant adolescents had elective abortions (Chibber and Khurranna, 2003).	IV
study.		





### **II.D. HIV COUNSELING AND TREATMENT**

Summary of Evidence	Supporting Research	Gray Type
<ul> <li>Information is lacking on the needs of HIV positive women in relation to unwanted pregnancy.</li> <li>✓ Enough evidence for action; needs more research: One study.</li> </ul>	"Little systematically organized information is available on the needs of women living with HIV/AIDS (WHA) in relation to unwanted pregnancy and abortion care, nor on services to cope with these needs" (de Bruyn, 2003: 2). This literature review summarized findings from approximately 250 documents from the scientific and gray literature from 1998–July 2002 using Medline, Popline, Sociofile, Psychinfo and the CDC website including retrospective studies, prospective cohort studies, and qualitative studies (de Bruyn, 2003).	III

#### **II.E.I. INFERTILITY COUNSELING**

Summary of Evidence	Supporting Research	Gray Type
Infertility counseling as a component of PAC.	No PAC-related studies found.	

### **II.E.2. NUTRITION COUNSELING**

Summary of Evidence	Supporting Research	Gray Type
Nutrition counseling as a component of PAC.	No PAC-related studies found.	







The literature regarding psychological sequelae following abortion or miscarriage is reflective of studies done in the United States. Few international studies addressing this issue are available. While the majority of women receiving PAC services will not develop any psychological sequelae that will require intervention, there is a minority of women who may experience negative emotions related to their miscarriage or abortion. It is important to be aware of risk factors that place these women at increased risk for psychological sequelae that may require further intervention. The decision to abort a pregnancy or carry a pregnancy to term is a complex one. While the literature suggests that the incidence of severe negative response following abortion is low, some women are affected, sometimes for years.

Women presenting for postabortion care services may also be victims of abuse. Studies indicate that between 27.3 percent and 35.1 percent of women seeking abortion have experienced abuse in their lifetime (Leung, et al., 2002; Keeling, et al., 2004; Chescheir, 1996); with 15 percent to 21.6 percent of women reported being abused in the past year (Wiebe and Janssen, 2001; Chescheir, 1996). Domestic violence-related issues are cited by 27.7 percent to 38.9 percent of women as the main reason for terminating their pregnancies. (Kaye, 2001; Leung, et al., 2002). "Domestic violence is a significant problem among gynecology patients, particularly those seeking termination of pregnancy... [and while] a single interview prior to abortion is adequately effective for domestic violence screening... the most effective and acceptable approach of helping the victims needs to be further explored" (Leung, et al., 2002: 54).

The type of emotional/psychological support needed is different for women experiencing miscarriage than for those experiencing induced abortion. Findings from studies using pre- and post-test evaluation show that women who have undergone a miscarriage or spontaneous abortion may have feelings of loss, and grief (Broen, et al., 2004; Stritzinger, 1999; Frost and Condon, 1996); yearn for the lost child; desire to talk to others about the loss, (Athey and Spielvogel, 2000); experience self-blame (Athey and Spielvogel, 2000; Stirtzinger, 1999); seek an explanation for the loss (Huntington et al., 1997); worry about their ability to carry a future pregnancy to term (Huntington, et al., 1997); and have the need for a follow-up appointment (Nikcevic et al., 1998). A Canadian study of 1428 women found that 25 percent of women felt that they needed professional help to cope with their loss (Ney et al., 1994).

Nine studies indicate that 1 percent to 41 percent of women who have had abortions are likely to experience feelings of loss, guilt and shame, anxiety, self-reproach, and depression (Broen et al., 2004; Suffla, 1997; Adler et al., 1990; Dagg, 1991; Reardon et al., 2003; Deckardt et al., 1994; Bradshaw and Slade, 2003; Major et al., 2000; Cougle et al., 2005). In the month following abortion, 19 percent to 27 percent of women had high levels of anxiety with 3 percent to 9 percent reporting high levels of depression (Dagg, P.K., 1991; Bradshaw and Slade, 2003). These reactions are noted in the immediate, short-term, and long-term periods following abortion.

Findings from two older studies in Sweden and the United States that conducted pre- and post-test evaluation before abortion and at varied intervals after the abortion indicate that the majority of women who have had induced abortion generally experienced feelings of relief (Major et al., 2000; Kero, 2004). While relief is experienced by most women following abortion, a small minority of women may continue to experience long-term negative emotions. Abortion may be associated with subsequent depression up to eight years after the pregnancy event (Cougle et. al., 2003). Approximately 1 percent to 10 percent of women may experience significant negative reactions consisting of mainly depression and anxiety symptoms severe enough to need psychiatric intervention (Bradshaw and Slade, 2003). Inpatient admission rates for women between the ages of 13 and 49 were significantly higher for women who had abortions, particularly in the first 90 days after the abortion (Reardon et al., 2003). Other studies have found that between one to two years postabortion up to 20 percent of women experienced clinical depression along with self-reproachful coping and physical complaints (Deckardt et al., 1994; Dagg, 1991; and Major, 2003). One percent of women met the diagnostic criteria for post traumatic stress disorder during this timeframe (Major, 2003). At four years, there was a statistically significant higher rate of inpatient psychiatric admissions for women ages 13–19, 20–24, and 35–49 (Reardon et al., 2003).

Women at greatest risk for negative reactions include younger women (Pope et al., 2001; Major et al., 2003); women with a history of pre-pregnancy depression (Reardon, 2002; Major, 2003; Pope et al., 2001; Bradshaw and Slade, 2003; Dagg, 1991); women who have been pressured or coerced to abort their pregnancy (Pope et al., 2001; Kero, 2004; Brown et al., 1993); and women with conservative attitudes toward abortion or conflicting religious beliefs (Bradshaw and Slade, 2003; Kishida, 2001; Adler et al., 1990). Stotland (1997) concludes that women who show great emotional distress, have had several previous abortions, or request psychiatric consultation should be offered referrals. Women seeking postabortion care need to be supported in their need to express grief and suffering even if they do not regret their abortion decision (Kero et al., 2004). Increased research...focusing in particular on which women are most likely to suffer psychological sequelae is important for targeting assistance. Physicians, nurses, and midwives involved in postabortion care services should take careful note of the woman's obstetrical and pregnancy loss history, her anxiety level, attitude, and emotions in providing pain management, emotional, and physical support as an integral part of postabortion care.





Summary of Evidence	Supporting Research	Gray Type
	Spontaneous abortion or miscarriage	
<ul> <li>Women may report suffering negative psychological effects after a spontaneous abortion.</li> <li>I Strong evidence: Four studies.</li> </ul>	A qualitative study of 31 PAC patients in Egypt in 1995 found that of the women who miscarried, all "reported an almost complete ignorance of the reasons for their miscarriages and this caused them to worry about their ability to carry a future pregnancy to term." As one woman put it: "I just want to know how it happened. This is my only problem. Some people say that I will keep aborting every time I get pregnant and I do not want that to happen to me" (Huntington et al., 1997: 105).	V
	"If early pregnancy loss occurs, grief can be as intense and complex as for any perinatal or other major loss" (Thorstensen, 2000: 481). "Women are often surprised at the intensity of their feelings and reviewing the process of grieving can normalize the process for them and support their ability to cope" (Athey and Spielvogel, 2000 cited in Thorstensen, 2000: 491). "Miscarriage is often viewed as a traumatic event by the women who experience it" (Zucker, 1999: 771). Studies in a developed country setting have found that grief after miscarriage is common (Frost and Condon, 1996).	V

Summary of Evidence	Supporting Research	Gray Type
	Spontaneous abortion or miscarriage	
Women may report suffering negative psychological effects after a spontaneous abortion. ☑ Strong evidence: Four studies.	Studies in Europe and the U.S. have found that approximately half of all women who experience spontaneous abortion may suffer psychiatric morbidity and that up to 44 percent of women show clinically significant levels of depression and anxiety (Lee et al., 1997 and Neugebauer et al., 1997 cited in Athey and Spielvogel, 2000). Many women also report worries that they will have a subsequent pregnancy loss. "The main symptoms noted are sadness, a yearning for the lost child, a desire to talk to others about the loss, and a search for a meaningful explanation of the loss. There are also features of the grief which are unique to the loss of miscarriage. Women may perceive themselves as a 'failure' for not having produced a healthy baby and may question their identity as a reproductive woman" (Athey and Spielvogel, 2000: 64).	IV
	A study in Canada that surveyed 1,428 women with 2,961 pregnancies found that 25 percent felt that they needed professional help to cope emotionally with their pregnancy loss (Ney et al., 1994).	V





Summary of Evidence	Supporting Research	Gray Type
	Induced abortion	•
Some women presenting for PAC may have been compelled to have abortions and may experience guilt and immediate or long-term regret. ☑ Strong evidence: One study.	A study of 96 young women ages 14–21 seeking counseling for unwanted pregnancies at four clinics in San Francisco (year of study not specified) found that "adolescents under age 18 years were less comfortable with their decision, but showed no other differences compared with those aged 18–21 years" (Pope et al., 2001: 2). The young women completed questionnaires after counseling and of the 96, 63 were reinterviewed four weeks postabortion. The study found that "subjects' pre-abortion emotional state and the degree to which they felt pressured by their partners" were related to postabortion adjustment (Pope et al., 2001: 10). The study used a number of measurements including the Beck Depression Inventory (BDI), Feelings about Pregnancy, Difficulty of Decision, Positive State of Mind Scale (PSOM), Impact of Events Scale (IES), Rosenberg Self-Esteem Scale, and Spielberg State Trait Anxiety Inventory (STAI) (Pope et al., 2001).	III
<ul> <li>19 to 27 percent of women who have induced abortions may report anxiety and depression ranging in duration from one month to two years after the event.</li> <li>✓ Strong evidence: Seven studies.</li> </ul>	A review of the literature from 1990 to 2000 concerning psychological experiences and sexual relationships prior to and following induced abortion found that "women due to have an abortion are more anxious and distressed than other pregnant women or women whose pregnancy is threatened by miscarriage, but in the long term they do no worse psychologically than women who give birth" (Bradshaw and Slade, 2003: 929). Still, around 30 percent are experiencing emotional problems after a month. A search of Medline, PsycLit and Web of Science found 24 studies post-1992 that focused on emotional issues. In these studies, "considerable variations in distress are reported after a pregnancy is recognized but prior to the abortion" — ranging from 15 percent to 69 percent (Bradshaw and Slade, 2003: 932). In one study (Rizzardo et al., 1991), "whilst women due to have an abortion were more anxious than women in the other groups [women in the hospital because of threatened miscarriage, and women who were up to 5 months pregnant (continued)	III

Summary of Evidence	Supporting Research	Gray Type
<ul> <li>19 to 27 percent of women who have induced abortions may report anxiety and depression ranging in duration from one month to two years after the event.</li> <li>☑ Strong evidence: Seven studies.</li> </ul>	(continued) and were continuing their pregnancies], they were not significantly depressed" (Bradshaw and Slade, 2003:934). The review found that "levels of anxiety, depression, and general distress clearly reduce in the month following abortion. The proportion of women with high levels of anxiety in the month following abortion ranged from 19 to 27 percent, with 3 to 9 percent reporting high levels of depression" (Bradshaw and Slade, 2003: 941). A small minority of women were found to experience problems one or two years post-abortion, "and levels of difficulties were similar to that expected in the general population" (Bradshaw and Slade, 2003: 941). Long-term, prospective studies of around 10 years have generally found that "women who have abortions do no worse psychologically than women who give birth to wanted or unwanted children" (Bradshaw and Slade, 2003: 941).	III
	A 1993 study of 882 women (442 of whom were followed for two years) found that six (1 percent) reported posttraumatic stress disorder. In this small group, while "depression decreased and self-esteem increased from preabortion to postabortionnegative emotions increased and decision satisfaction decreased over time" (Major et al., 2000: 777). Prepregnancy history of depression was a risk factor for depression, lower self-esteem, and more negative abortion-specific outcomes two years postabortion. Younger age and having more children preabortion also predicted more negative abortion evaluations. In this study, women who came to one of three sites to terminate a first-trimester unintended pregnancy were randomly approached to participate in a longitudinal study with four assessments: one hour before the abortion, and one hour, one month, and two years after the abortion. Of 1,043 women, 882 (85 percent) agreed. Of those, 442 (50 percent) were followed for two years. Preabortion and postabortion depression and self-esteem, postabortion emotions, decision satisfaction, perceived harm and benefit, and posttraumatic stress disorder were assessed. Demographic variables and prior mental health were examined as predictors of postabortion psychological responses (Major et al., 2000).	III





Summary of Evidence	Supporting Research	Gray Type
19 to 27 percent of women who have induced abortions may report anxiety and depression ranging in duration from one month to two years after the event.         ☑ Strong evidence: Seven studies.	A quantitative and qualitative study of 65 women, conducted at the University Hospital of Umeå in northern Sweden in 1995, found that "most women (56/58) were satisfied with their decision to have an abortion in the four-month follow-up However, one woman reported 'much' and three 'some' mental disturbances related to the abortion. At the four-month follow-up, the women were also asked <i>retrospectively</i> about their <i>immediate</i> post-abortion reactions, and three main subgroups were found: women without emotional distress (62 percent), women with mild/moderate emotional distress, and women with severe emotional distress (21 percent). No significant differences were found between those subgroups concerning age, educational level, civil status, personal finances, children, and previous abortions" (Kero et al., 2004: 2562-2563). Factors causing distress included conflict of conscience, religious beliefs, pressure to have the abortion, problems in the relationship, and desire for the birth. The study "highlights that reactions post-abortion cannot be separated from experiences of the pregnancy and the decision-making process before abortion" (Kero et al., 2004: 2568). The authors concluded that "womenwho had experienced a mourning process valued it as an important and appropriate reaction Thus women should be encouraged to express grief and suffering even if they do not regret their decision" (Kero et al., 2004: 2568). In all, 250 women who applied consecutively for legal abortion were asked to participate—88 percent agreed to do so. Of those, 65 women agreed to participate in a follow up study a few days after the first interview and again four and 12 months later. Of those, 61 women participated at four months and 58 at 12 months (Kero et al., 2004).	III
	A study that compared psychiatric admission rates of women in time periods from 90 days to four years after either an abortion or childbirth, using California Medical (Medi-Cal) records of women ages 13–49 during the time of abortion or childbearing in 1989, found that women who had abortions had a significantly higher inpatient admission rate than women who delivered during each time period analyzed, particularly in the first 90 days after the pregnancy event. At four years, statistically significant differences (continued)	V

Summary of Evidence	Supporting Research	Gray Type
19 to 27 percent of women who have induced abortions may report anxiety and depression ranging in duration from one month to two years after the event. ☑ Strong evidence: Seven studies.	(continued) were found for women ages 13–19, 20–24 and 35–49. The authors conclude that "additional research, using data that encompass complete medical histories, is strongly recommended. Clinicians who are alert to a patient's history of pregnancy loss may be better able to identify women who would benefit from a referral for counseling." In the analysis, 56,741 women who had no psychiatric admissions or pregnancy events during the previous year, were included in the analysis. Of those, 15,299 had abortions and the remaining 41,422 had live births and were included as comparisons. The analysis controlled for age and mean number of months eligible for Medi-Cal assistance (Reardon et al., 2003).	V
	A study of 66 Japanese women requesting abortion, who participated in a survey at six clinics in Japan (year not specified), found that a conservative attitude toward abortion (in general, not necessarily the current abortion) was the most significant predictor of postabortion anxiety after controlling for the level of pre-abortion anxiety. This study used multiple regression analyses to predict anxiety postabortion. Anxiety was measured using the State Trait Anxiety Inventory (STAI). The women ranged in age from 20 to over 40. In all, 61 questionnaires were usable and included in the analysis. The author concludes that, "a woman's attitude toward abortion and reproductive rights is an important but neglected factor influencing post elective abortion anxiety. Medical and nursing professionals should, therefore, take note of a woman's attitude toward abortion as a part of her mental health care" (Kishida, 2001: 495).	V





Summary of Evidence	Supporting Research	Gray Type
<ul> <li>19 to 27 percent of women who have induced abortions may report anxiety and depression ranging in duration from one month to two years after the event.</li> <li>☑ Strong evidence: Seven studies.</li> </ul>	A study of five single South African women who underwent illegal induced abortion prior to the legalization of abortion in South Africa in 1996 (study year not specified), found that "the manner in which women responded to the abortion was a joint function of their psychological state and the social environment in which the procedure occurred" (Suffla, 1997: 214). The most common postabortion response was relief; however, some feelings of guilt, shame, and loss were present. Postabortion adjustment was positively related to the perception of support from one's partner. The in-depth interviews (with two students, a clerk, a factory worker and a social worker ages 20–31) focused on the social context of the abortion decision, the procedure, the psychological impact of the abortion and perceptions of coping (Suffla, 1997).	V
	A descriptive, comparative study of 93 women (45 who had a history of elective abortion within the past one to 14 months and 48 who had never had an abortion) at a university in a large southwestern city in the U.S. (study year not specified), found that "although there were no statistically significant differences in the intensity of grief in women who had a history of elective abortion and the comparison group, there was an overall trend towards higher grief intensities in the abortion group. Presence of living children, perceived pressure to have an abortion, and the number of abortions appear to affect the intensity of the short-term grief response" (Williams, 2001: 174). The study used the Intensity of Grief (GEI) scale to measure short-term grief. The women had not had a previous involuntary perinatal loss nor did they have any previous documented psychiatric history (Williams, 2001).	V
Summary of Evidence	Supporting Research	Gray Type
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Between 27 and 39 percent of women seeking abortion have been victims of abuse sometime during their lifetime. ☑ Strong evidence: Seven studies.	A 2000 study of 311 women seeking PAC at a national referral hospital in Uganda found that 70 women (23.2 percent) had induced abortions and 28 of those (38.9 percent) "gave domestic violence-related issues as the main reason for inducing the abortion" (Kaye, 2001: 324). Over half (57.0 percent) of the women reported domestic violence in their first pregnancy, inflicted by a spouse (58.7 percent), ex-spouse/ex-boyfriend (6.1 percent), or relative (24.6 percent). The study was open to all women admitted with abortion complications—every third woman was requested to participate in the study. In all, 311 agreed to do so (total requested sample not given). The women were treated before being referred to a counselor. The women were interviewed using a structured questionnaire and history of abuse was measured using the Abuse Assessment Screen. Age and parity of the sample was similar to that observed in antenatal women. (Kaye, 2001: 324).	III
	A 1999 case control study in a hospital in Hong Kong of 501 women (245 seeking abortion and 256 other ob/gyn patients) found that "the lifetime prevalence of abuse in the group seeking abortion was 27.3 percent compared to 8.2 percent in the ob/gyn group" (Leung et al., 2002: 47). The study also found that "among those with recent history of abuse, 27 percent (9/33) admitted that their decision for termination of pregnancy had been affected by their experience of abuse" (Leung, et al., 2002: 51). The women were interviewed using a modified Abuse Assessment Screen. The women were interviewed when they presented for treatment and again six weeks later to assess how best to measure the experience of violence. Only a small percentage (18.8 percent) of women said they wanted to reveal the information on abuse to their health care providers for further management. The authors conclude that "domestic violence is a significant problem among gynecology patients, particularly those seeking termination of pregnancy [and while] a single interview prior to abortion is adequately effective for domestic violence screeningthe most effective and acceptable approach of helping the victims needs to be further explored" (Leung et al., 2002; 54).	III
	that their decision for termination of pregnancy had been affected by their experies (Leung, et al., 2002: 51). The women were interviewed using a modified Abus Screen. The women were interviewed when they presented for treatment and again to assess how best to measure the experience of violence. Only a small percentage of women said they wanted to reveal the information on abuse to their health for further management. The authors conclude that "domestic violence is a signi among gynecology patients, particularly those seeking termination of pregnancy single interview prior to abortion is adequately effective for domestic violence s most effective and acceptable approach of helping the victims needs to be furt (Leung et al., 2002: 54).	ence of abuse" se Assessment six weeks later (18.8 percent) care providers ficant problem [and while] a screeningthe ther explored"



Summary of Evidence	Supporting Research	Gray Type
Between 27 and 39 percent of women seeking abortion have been victims of abuse sometime during their lifetime. ☑ Strong evidence: Seven studies.	A study in a pregnancy counseling clinic in a large district hospital in the northwest of England (year not specified) of 312 women who sought abortion found that 35.1 percent had experienced intimate partner abuse at some point in their lives and 3.7 percent reported forced sexual intercourse during the past year. Fewer than half (45.5 percent) of these women were sure the index pregnancy was not associated with the forced sex. All women attending the pregnancy counseling clinic over a seven month period were eligible for the survey and the response rate was 96.7 percent. Over half (55.3 percent) of the women were under age 25 and most were under age 35 (85.7 percent) (Keeling et al., 2004).	III
	A study in an urban abortion clinic in Canada found that among the 254 women who were asked a series of screening questions, 38 (15 percent) said they had been abused during the past 12 months. The women, all of whom sought abortion, were not asked if the violence was related to their decision to seek abortion. The women who had experienced abuse did not differ significantly from those who had not experienced abuse in terms of age, gestational age, or ethnicity. Of the 499 women for whom the screening questionnaire should have been used, 254 women were asked the screening questions (58 percent of white women, 40 percent of East African women and 37 percent of South Asian women). Various reasons were given for the other women not being screened, including that partners were present, language was a barrier, etc. The authors conclude that, "the fact that only half of women were asked the questions shows how difficult it is to implement a policy of universal screening" (Wiebe and Janssen, 2001: 439). The counselors were well trained and enthusiastic and found it easier over time to ask the questions. They also found that women were receptive to the screening. Some women requested information on clandestine contraceptive use (Wiebe and Janssen, 2001).	IV

Summary of Evidence	Supporting Research	Gray Type
Between 27 and 39 percent of women seeking abortion have been victims of abuse sometime during their lifetime. ☑ Strong evidence: Seven studies.	A 1996–97 study on 207 pregnant Swedish-born women visiting three antenatal clinics in the inner city of Gothenburg found that 30 women were abused during the current pregnancy and of those, 95 percent had also been abused prior to the pregnancy. "In the group of abused women a higher proportion of women had undergone one or more abortions than in the non-abused group." Abuse was assessed using the Severity of Violence Against Women Scale (SVAW) (Hedin and Janson, 2000).	IV
	A study of 51 women self-referred to the University of North Carolina abortion clinic in 1994 found that 31.4 percent reported being abused during their lifetime, 21.6 percent reported abuse during the past year, and 7.8 percent reported abuse during the current pregnancy. All women abused during pregnancy had also been abused prior to pregnancy. The women in this study were mostly single, with an average age of 24.4 years. Most were of lower socio-economic status and were women of color (Evins and Chescheir, 1996).	IV
	A descriptive study of 100 women attending an abortion clinic in a city in Canada (year not specified) found that 41 reported abuse by their current partners. The sample included 100 consecutive pregnant women who attended the clinic for pre-abortion consultation (representing around 8 percent of annual patient load at the clinic). The women completed confidential, anonymous questionnaires (Lumsden, 1997).	V





Summary of Evidence	Supporting Research	Gray Type
<ul> <li>Physical violence is associated with an increased risk of spontaneous abortion.</li> <li>☑ Strong evidence: One study and one paper.</li> </ul>	A representative sample of 765 married women from Central Java, Indonesia participated in a longitudinal study carried out between 1996 and 1998 and funded by the World Bank, which found that women who experienced physical violence during pregnancy had higher rates of spontaneous abortion. For those who had experienced physical violence during pregnancy, 10 percent had spontaneous abortions as compared to 5.7 percent of those women who reported no physical violence during pregnancy. For those who had experienced sexual violence during pregnancy, 5.9 percent had spontaneous abortions as compared to 3.8 percent of those who did not report sexual violence during pregnancy (Hakimi et al., 2001).	III
	Violence has been linked with increased risk of miscarriages (Amaro et al., 1990 cited in Heise et al., 1999; Jejeebhoy, 1998 cited in Heise et al., 1999; Rosales Ortiz et al., 1999 cited in Heise et al., 1999; Heise et al., 2002).	IV

#### **II.E.5. YOUTH AND PAC**

Very few studies have focused on youth and PAC. More research is urgently needed on this topic in order to advise policymakers and program planners on the topic. "Every year, an estimated two to four million adolescents resort to abortion. In comparison to adults, adolescents are more likely to delay the abortion, resort to unskilled persons to perform it, use dangerous methods, and present late when complications arise. Adolescents are more likely to experience complications," (Olukoya et al., 2001: 137). Cause-specific maternal mortality ratios from Matlab, Bangladesh, show that deaths from abortion among 15–19 year olds were twice those in women aged 20–24 (UN, 1989 cited in Olukoya et al., 2001). This study was based on a literature review by WHO. A study of four public hospitals in Dar es Salaam, Tanzania showed that over 41 percent of the patients admitted with complications from an illegal abortion were aged 17 or under (Mpangile et al., 1993 cited in Silberschmidt and Rasch, 2001). Most of the data on PAC and young girls were derived from a study in Tanzania and such efforts need to be expanded in order to capture better the scope, magnitude and context of the issue.





# III. COMMUNITY EMPOWERMENT THROUGH COMMUNITY AWARENESS AND MOBILIZATION



#### III. COMMUNITY EMPOWERMENT THROUGH COMMUNITY AWARENESS AND MOBILIZATION

Community mobilization is a newer, but important, component of improving access to postabortion care services. Other sections of this module highlight the need for strengthening political will, upgrading facilities, restructuring services, and training providers in both techniques of providing emergency care and postabortion family planning information and services. Once services are available, communities can be mobilized to know about PAC services and to use the services as well as create demand for quality postabortion care services. Mobilizing communities without adequate services in place is counterproductive.

It is important to acknowledge that PAC has characteristics that set it apart from other components of reproductive health, most notably that abortion is illegal in many countries and most women who seek PAC do so because they have had complications from illegal abortions. In some countries, such as Bolivia, the woman and provider who performed the abortion can be jailed. Community mobilization activities for PAC must be sensitive to such issues.

A combination of fear, rising from the stigma associated with legal and illegal abortion in many communities, and lack of information on how to recognize dangerous complications of abortion, prevent many women from seeking help. Community mobilization strategies must work simultaneously to facilitate community acknowledgment of the problem, foster productive discussion of the issue, and educate women on the signs and symptoms that necessitate treatment.

According to the USAID PAC Model, effective community awareness and mobilization is needed to empower the community to provide and demand quality effective postabortion care services. The term community is meant to be inclusive of governments, ministries of health and educators, PVOs, NGOs, women's groups, youth leaders, professional organizations, community associations, male leadership, faith-based organizations, traditional birth attendants, community-based distributors, donors, and other stakeholders appropriate to each community. The community is needed to:

- Identify its health needs as it relates to postabortion care;
- Plan for resources necessary to meet identified health needs;
- Mobilize required resources to provide PAC, whether this be policy, development of primary sites for service delivery, monetary, equipment, personnel, transportation, and social marketing to meet its identified needs;
- Determine how to make care accessible in the community;
- Educate its constituents regarding unsafe abortion, the three delays in seeking care and its inherent consequences; postabortion complications; and
- Establish relationships with healthcare providers/facilities on all levels (community/ primary/ secondary/ tertiary) to ensure comprehensive service delivery for postabortion care.



Cornerstones of Social Mobilization	Community	Family	Individual Woman
<ul> <li>Focused Action for Postabortion Care</li> <li>Goal: To increase the use of emergency treatment and non-emergency services (FP counseling and services, STI evaluation and treatment, HIV counseling and testing</li> </ul>	Improved community knowledge, norms, and practices Increased community resources Establishment of mechanisms for discussion and action on postabortion care among community members and between community and health services	Improved knowledge and practices related to complication readiness Shared decision- making to support complication readiness	Improved knowledge and practices related to complication readiness
Capacity Building for Postabortion Care • Goal: Increased skills to promote, support, and monitor PAC programs and policies on a sustained basis and empower individuals, communities and organizations	Improved commitment and capacity of community leaders/ groups to analyze local needs, mobilize people and resources, and carry out actions for complication readiness Increased ability to access resources within and beyond community	Improved collective problem-solving and shared decision- making skills related to complication readiness	Increased confidence to articulate and act on their needs and influence household decision-making related to complication readiness Improved problem- solving skills

A number of opportunities exist to link postabortion care with other services, including safe motherhood, family planning, and HIV/AIDS initiatives. Because the literature related to PAC and community mobilization is scant, this section draws from literature on community mobilization from these fields, using the lessons learned and recommendations as a framework into which PAC could be incorporated.

The Maternal and Neonatal Health (MNH) Program Framework for Social Mobilization uses focused action and capacity building to target specific safe motherhood outcomes. This framework can be adapted for postabortion care. The perspectives of the community, the family, and individual women are particularly relevant to discussion of PAC mobilization. Men must be involved at each of these levels—in their capacity as community leaders, family members, and partners.

Effective community education and mobilization efforts are context-specific and account for the political situation and community attitudes toward postabortion



care for complications related to miscarriage and incomplete abortion in each setting. Formative research in the community can uncover important perspectives and determine the best ways to address PAC. Access to PAC can be expanded by training community health workers to provide family planning and make referrals, involving male partners about PAC treatment and followup care, counseling family members, and mobilizing social support systems with gender-sensitive programs. In addition, special consideration should be given to the needs of adolescent and unmarried women seeking abortion services and postabortion care.



Summary of Evidence	Supporting Research	Gray Type
Community education efforts can increase the awareness of PAC services and enhance the quality of and access to PAC programs. Needs more research: One study.	A 1996 operations research study in Ghana found that including a community education component in PAC training and including health educators in PAC activities can increase the number of women receiving postabortion care. Following the training, which was part of a larger project to test the feasibility and safety of training and equipping professional midwives to provide PAC services, 81 percent of the 40 trained midwives participated in community education activities in Eastern Region, Ghana. The private midwives who participated in the training reported feeling more comfortable than the public sector midwives in conducting community education. Those midwives reported that "these health talks increased their visibility in the community, raised awareness of the issue of unsafe abortion, and elevated community members' respect for their skills in providing comprehensive reproductive healthcare" (Baird et al., 2000: 631–632). Two years after the training, the midwives had seen more than 200 PAC patients. The study involved 80 public and private sector midwives [40 in the intervention group and 40 in the control group (for whom no results were reported)], four physicians who provided backup to the midwives, and health educators who worked at four district hospitals in Eastern Region, Ghana (Baird et al., 2000).	V
Community-based health worker education can increase the number of women using PAC and family planning services. I Needs more research: One study.	A study, in the Suba District in Western Kenya in 2001, shows that training of community-based health workers (CBHWs) can increase both the number of women using postabortion care services in clinical facilities and the proportion of women using contraception. Phase II, implemented over a four year period, follows formative research that identified community attitudes toward unintended pregnancy and unsafe abortion as well as socio-cultural determinants of reproductive health seeking behavior (Mukenge, 2002). COBAC's midterm evaluation illustrates significant improvement in health-seeking behavior and contraceptive use. In addition, 72 percent of survey respondents indicated that they preferred health facilities over traditional birth attendants. Use of family planning also increased; 63 percent of users obtained non-prescriptive contraceptives from community-based health workers (CBHW), and 3,000 to 5,600 more clients are being served in area facilities. Ninety percent of PAC clients served in clinical facilities had been referred by CBHWs. With the help of trained CBHWs, women spent less time identifying suitable clinics and providers. (Magak and Mulenge, 2003)	V

Summary of Evidence	Supporting Research	Gray Type
Volunteer health promoters can provide family planning counseling and distribute contraceptive methods, thus, increasing contraceptive acceptance. ☑ Enough evidence for action; needs more research: One study.	Peru's Multi-Sectoral Population Project (MSSP) used community volunteers to increase knowledge about reproductive health in 672 rural and peri-urban communities throughout the country. The project is one effort by CARE to improve reproductive health and increase access to family planning. The project evaluation in 1996 determined that volunteers had recruited over 28,300 contraceptive acceptors and enabled more than 1,000 to access long-term methods from MOH health facilities. The volunteer health promoters had organized 4,680 group talks on reproductive issues. The network of 1,000 volunteer health promoters provided information on family planning, sexuality, and reproductive anatomy through individual and group events. Health promoters disseminated information on contraceptives, distributed methods (oral contraceptive pills, condoms, vaginal tablets, and injectables), and referred women to MOH clinics for long-term methods and other services. The authors highlight the importance of one-on-one messengers to the program's efforts. Reproductive health information was disseminated through community volunteers in a culturally appropriate and sensitive way. Because medical professionals in Peru are not adequately trained in counseling, using community volunteers in outreach efforts proved essential in providing community members accurate information on methods, access to contraceptive supplies, and in linking individuals to health facilities equipped to provide other long-term methods (Schubert et al., 1997). PAC was not mentioned specifically in the report about the spectram activities.	V
	and program, out this could potentially so added to program addition	





Summary of Evidence	Supporting Research	Gray Type
Pre-intervention PAC research shows that involvement of community members can raise awareness of PAC services; identify barriers at the community level (i.e., quality and quantity of services and lack of emergency transport); and, strengthen referral systems by incorporating families and community-based providers. ✓ Enough evidence for action; needs more research: One study.	A 1999 exploratory study on postabortion care consisting of focus groups and in-depth semi-structured individual interviews in two sites of Nyanza Province, Kenya, concluded that the majority of community members interviewed believe that existing PAC services were inadequate, in both quantity and quality. Many participants believed that no formal PAC services were available in their regions. Others stated public hospitals as a source of postabortion care; however, the respondents perceived that a very limited number of public hospitals existed. A range of respondents cited traditional and community-based providers as the first step when complications arise. These providers are often the first to be consulted by women experiencing complications arising from an abortion. These providers often administer herbal remedies to neutralize the effects of the modern medications. This practice is seen as a follow-up to hospital care. Only a few respondents identified a variety of barriers at the community level to PAC: lack of proper, prompt referral by the community-based providers who receive the majority of complication cases; abandonment by the person who induced the abortion; low quality of care within the hospitals that receive PAC cases; lack of emergency transport; and social pressures and perceptions of bad treatment that inhibit girls from alerting others to their emergency. The authors conclude that education efforts can raise awareness concerning available PAC services. In addition, referral systems must be strengthened by incorporating both families and community-based providers (Rogo et al., 1999).	IV
<ul> <li>PAC services are needed even in contexts where abortion is legal.</li> <li>☑ Needs more research: One study.</li> </ul>	A 1999 community assessment in four villages in rural Uttar Pradesh, India, using non-random qualitative data collection techniques found that postabortion care services are needed even where abortion is legal. During the year in which the study took place (April 1999–March 2000) between 8 percent and 10 percent of patients admitted to Kasganj Christian Hospital (5–8 patients per month) were admitted with abortion complications. Data collection revealed that "while there are clear linkages between induced abortions conducted by untrained providers and the severity of complications, postabortion complications were also experienced by some women who went to referral-level providers" (Johnston et al., 2001: 25).	V

Summary of Evidence	Supporting Research	Gray Type
Community participation and support for community emergency transport systems leads to better care for pregnant women and sustained links between the communities and health facilities. ☑ Needs more research: One study.	An evaluation of the Community Capacity Building and Empowerment initiative, a program designed to address high maternal morbidity and mortality in the Mwanza region of northwestern Tanzania, revealed that by 2001, 12 villages had developed emergency transportation systems, and 10 were functional and had been used by women with obstetric emergencies. The initiative was undertaken by the Community-Based Reproductive Health Project (CBRHP), a joint effort of CARE and the Tanzania Ministry of Health, developed to address high infant and maternal mortality in two of Tanzania's poorest districts. The project used qualitative data from group interviews and program data from CBRHP to assess progress in the development and use of community-level transport systems. Fifty-two villages received at least one mobilization visit by master trainers or CARE field staff, follow-up visits to assess their progress on the development of emergency transportation plans, use of participatory problem solving methods, and supportive supervision of VHWs. At baseline, no villages had community-level plans for providing transportation during health emergencies. In the final evaluation, 62 percent of community, a significant improvement from 1997 when the majority of communities believed transport was an individual's responsibility. The cost of obtaining transport decreased to 1,000 to 8,000 shillings from the prohibitive sum of 10,000 to 80,000 shillings at baseline. Service use also improved; in 1997 only 4 percent of pregnant women attending the district hospital were treated for obstetric complications. By 2001, 15 percent were treated. More women in need of specialized care came to the hospital (Ahluwalia et al., 2003)	V





Health action advaction A heal		
ricath action-cutcation       A heal         campaigns using community       Educa         health workers can identify       resulte         pregnant women, provide       percent         them with information on       pregnancy         danger signs of pregnancy       Forty-         and contraception, and can       people         help increase the numbers       RUWS         of women who seek skilled       and pr         attendance.       service         I Enough evidence for action;       includ         needs more research: One study.       Health         housel       surrou         influer       was no         added       added	Ith education-action campaign conducted in February 1990 by the Rural Women's Social tition Center (RUWSEC) to improve pregnancy outcome in Tamil Nadu, South India, ed in an increase in the proportion of hospital deliveries in the catchment area from 22 and to 45.5 percent. A very high proportion of women who developed complications during ancy and delivery were taken to a health facility after the intervention (data not provided). -seven rural hamlets were included in the campaign, encompassing a population of 23,562 e who live in 4,386 households. During the campaign, community health workers from SEC identified pregnant women in the population, carried out health education activities, rovided basic healthcare and advice to the women, encouraging them to use hospital delivery es in the event of an emergency. Over the course of a three-month period, they made ted household visits to identify pregnant women. Baseline data collected at the first visit led detailed pregnancy histories and information about their socioeconomic background. In action-education activities followed the initial data collection. Health workers distributed hiets outlining risk factors and danger signs during pregnancy, along with manuals illustrating o assemble a clean birth kit and information about contraception. In order to circumvent pread illiteracy, health workers read the information out loud with participants. Community workers also reached out to men, recognizing that they are often the literate members of the hold. Later, workshops brought together members of a number of hamlets for discussion anding safe motherhood. The workshops simultaneously informed expectant mothers and need popular opinion on the importance of safe motherhood efforts (Sundari, 1993). PAC ot mentioned specifically in the report about this program, but PAC could potentially be to proeram activities.	IV

Summary of Evidence	Supporting Research	Gray Type
Multiple community-based educational strategies, including women's groups and radio messages, can effectively increase knowledge of danger signs in pregnancy. ☑ Enough evidence for action; needs more research: One study.	Between April 1997 and May 1998, a three-component intervention of the Guatemalan Ministry of Health and MotherCare increased awareness of danger signs during pregnancy, delivery, and the postpartum period in four regions of the country: Quetzaltenango, Sololá, Totonicapán, and San Marcos. Evaluation assessed that among women using health clinics, those who had heard radio messages and who had participated in women's groups were three and five times more likely, respectively, to have heard about danger signs in pregnancy than women who had not. Among women using the health clinics, the likelihood of having heard of danger signs nearly tripled between 1997 and 1998. Three surveys were conducted: 637 pregnant women were interviewed in 1997; 163 pregnant women using a subset of the same health clinics were interviewed in 1998; and a population-based survey of 638 pregnant and new mothers was conducted in 1999. Data were analyzed using logistic regression to model awareness of danger signs as a function of sociodemographic characteristics, prenatal care utilization, and the IEC interventions. Evidence from both the clinic and population-based surveys suggest that the community-based education campaigns produce dramatic increases in knowledge about danger signs during pregnancy. While women who had heard pregnancy-related radio messages were two to three times as likely to be aware of danger signs in 1997 and 1998 (respectively), the women who participated in women's groups were over five times more likely to be aware of danger signs than those who had not (Perreira et al., 2002). PAC was not mentioned specifically in the report about this program, but PAC could potentially be added to program activities.	IV





Summary of Evidence	Supporting Research	Gray Type
Community-based programs can increase women's knowledge of danger signs in pregnancy or delivery, increase use of modern contraceptives, and increase community participation in planning and decision-making for emergency obstetric care. I Needs more research: One study.	An evaluation of the Community Capacity Building and Empowerment initiative, a program designed to address high maternal morbidity and mortality in the Mwanza region of northwestern Tanzania, revealed that women's knowledge of two or more danger signs during pregnancy or delivery increased from 10 percent in 1997 to 56 percent in 2001. The initiative was undertaken by the Community-Based Reproductive Health Project (CBRHP), a joint effort of CARE and the Tanzanian Ministry of Health, developed to address high infant and maternal mortality in two of Tanzania's poorest districts. The evaluation found that 48 percent of the pregnant women had a household birth plan in place (no baseline data available). The number of women with children under age two using modern contraceptives to delay pregnancy more than doubled, from 11 percent at baseline to 24 percent in 2001. In addition, communities were more likely to provide social, financial, and/or technical support for the VHWs. The Community Capacity Building and Empowerment Project promoted problem solving through training, technical assistance, and support for VHWs; developing community-based plans for transportation to health facilities; and increasing participation by community members in planning and decision-making. In addition to working with the communities, CARE Tanzania worked with the MOH to upgrade health centers and hospitals to appropriate levels of obstetric care through staff training and supply provision (Ahluwalia et al., 2003). PAC was not mentioned specifically in the report about this program, but	V
	a description of the intervention.	

Summary of Evidence	Supporting Research	Gray Type
Community-based women's savings and credit groups can provide a forum for women to discuss sensitive topics, and community education efforts can increase use of services. I Needs more research: One study.	The Boudha-Bahunipati Family Welfare Project (BBP) in Nepal laid the foundations of community mobilization and involvement from its inception in 1973 until the second stage of reproductive health interventions which began in 1996. At the community level, new women's savings and credit groups were formed, increasing from less than 10 to 52 across the BBP area. The number of women who received reproductive health services in the eight project sites saw substantial increases from 1,620 women (July 1997–June 1998) to 2,968 women (July 1998–June 1999). During qualitative research, women commented on the connection between reproductive morbidity and mortality and underlying social factors (domestic violence, sexual trafficking, and sexual network patterns). The women's saving and credit groups identified uterine prolapse, maternal health, alcoholism, gender violence, girls' education, and women's low status as the highest-priority issues. Efforts included training of trainers, problem tree analysis to determine the root causes of complicated issues, and the development of action plans to address the highest-priority reproductive health issues. As a complement to system-level changes in the reproductive healthcare delivery systems that were occurring simultaneously, community-based women's savings and credit groups provided the forum for women to discuss sensitive topics (Arens et al., 2002).	V
Community education and mobilization efforts can increase blood banking and decrease primary postpartum hemorrhage fatality rates. I Enough evidence for action; needs more research: One study.	Nigeria's community education and mobilization campaigns about blood donation from 1993–1994 led to increased community understanding of the dangers of postpartum hemorrhage, increased availability of blood for donation, and increased use of blood banks in health facilities. Due to community mobilization efforts, blood availability for transfusion increased from 39 percent in the pre-intervention period to 79 percent in the post-intervention period (P<0.001). Additionally, more than half of the units of blood during the pre-intervention period came from paid donors. After the community mobilization efforts, over 80 percent of the units were from voluntary donors. The primary postpartum hemorrhage rate was 3.6 percent before the intervention. This increased to a rate of 4.8 percent, most likely because after the intervention more women presented at health facilities with postpartum hemorrhage. Even with an increased rate of postpartum hemorrhage, the case fatality rate dropped from 12 percent to 5 percent (P<0.05). (continued)	IV





Summary of Evidence	Supporting Research	Gray Type
Community education and mobilization efforts can increase blood banking and decrease primary postpartum hemorrhage fatality rates.	(continued) In addition to facility-based improvements in blood banking, the Prevention of Maternal Mortality (PMM) team, based in Calabar, addressed socio-cultural beliefs that had been shown to contribute to maternal deaths from hemorrhage. The first phase of the intervention consisted of 15 education and mobilization campaigns from April 1993 until December 1993. Conducted in English and Efik, the campaigns emphasized blood transfusion as life-saving. They also reinforced that transfusion is possible only if blood is available and encourage members of the community to donate their blood voluntarily. Posters, handbills, and songs spread the message from villages to major markets, schools, and churches (Etuk and Asuquo, 2000). PAC was not mentioned specifically in the report about this program, but PAC could potentially be added to program activities by educating community members on the need to seek emergency care at any time heavy bleeding occurs related to pregnancy.	IV
Community education efforts can help reshape social norms surrounding PAC and knowledge of consequences of unsafe abortion including reliance on traditional healers for PAC services and acceptance of adolescents' use of contraceptives. In Needs more research: One study.	A study launched in the Suba District in Western Kenya in 2001, shows that community education and mobilization can increase knowledge of the risks of unsafe abortion, promote appropriate PAC, and foster greater acceptance of adolescents' sexuality and the use of contraception. Community education can generate improved policies toward pregnant girls and women. Phase II, being implemented over a four-year period, followed formative research that identified community attitudes toward unintended pregnancy and unsafe abortion in the area (Mukenge, 2002). COBAC's midterm evaluation showed significant changes in community members' attitudes towards unwanted pregnancy, postabortion care, and adolescent sexuality. Community members were increasingly willing to discuss topics that were considered taboo before the intervention. Knowledge of reproductive health and the consequences of unsafe abortion increased significantly, as did individuals' ability to ask question related to sexual and reproductive health. Respondents were less likely to trust traditional healers for abortion complications. At midterm, only 27 percent of respondents indicated that they would trust a traditional healer for PAC services, a complete reversal from the baseline data, which showed that the majority of the community trusted traditional healers for PAC services. Most importantly, the community is no longer categorically opposed to the provision of contraceptives to adolescents. Health providers are reportedly offering more youth-friendly services (Magak and Mukenge, 2004). See Appendix I, Magak and Mukenge, 2004, for a description of the intervention.	V

# III.A. REDUCING THE INCIDENCE OF INDUCED AND SPONTANEOUS ABORTIONS CAN REDUCE THE NEED FOR PAC

Summary of Evidence	Supporting Research	Gray Type
There is a strong association between malaria in pregnancy and an increased risk of spontaneous abortion. ☑ Strong evidence: One study.	Numerous studies have found an association between malaria in pregnancy and an increased risk for spontaneous abortions (Endeshaw, 1991; Nosten et al., 1991; Taha and Gray, 1993 cited in Ticconi et al., 2003). Please also refer to Appendix 6 on malaria in the module "What Works: A Policy and Program Guide to the Evidence on Family Planning, Safe Motherhood, and STI/HIV/AIDS Interventions; Module 1: Safe Motherhood Module" by Gay et al., 2003.	Π
Exposure to environmental contamination including pesticides and fungicides can increase the incidence of spontaneous abortion.	A study in Canada found strong evidence that women's exposure to pesticides in the three months prior to conception or in the month of conception significantly increased their risk of spontaneous abortion. Preconception exposure to the pesticides gylphosate, atrazine, carbaryl, and 2, 4-D increased relative risk of spontaneous abortion by 20 percent to 40 percent. Risks were even higher for women 35 or older exposed to pesticides and to pesticide mixtures. Older women exposed to both triazines and thiocarbamates before conception had a nearly eight fold increase in the risk of spontaneous abortion over women exposed to triazines only (Arbuckle et al., 2001).	IV
and one literature review.	A study in Turkey found that exposure to the fungicide hexachlorobenzine was strongly correlated with risk of spontaneous abortion. In southeastern Turkey from 1955–1957, women were accidentally exposed to the fungicide hexachlorobenzine (HCB) after eating contaminated seed grain. A retrospective controlled cohort comparison study of three groups was conducted. Group 1 was exposed to HCB; group 2 were controls to the region; and group 3 were controls for the country of Turkey, followed up after 40 years, with 42 women in each group. There was a threefold significant association between concentration of serum HCB and risk for spontaneous abortion. Blood samples were taken for analysis of HCB. Interviews were completed for each woman of their reproductive history (Jarrell et al., 1998).	III





#### III.A. REDUCING THE INCIDENCE OF INDUCED AND SPONTANEOUS ABORTIONS CAN REDUCE THE NEED FOR PAC

Summary of Evidence	Supporting Research	Gray Type
Exposure to environmental contamination including pesticides and fungicides can increase the incidence of spontaneous abortion.	A review of literature on environmental contamination and adverse reproductive outcomes found that solvent exposures are associated with an increased risk of spontaneous abortion. Investigators also reported an increased incidence of spontaneous abortions among women in Bhopal, India, who were exposed to the industrial methyl isocyanate (MIC) gas leak (Mehta, 1990 cited in Bhatt, 2000).	III
Strong evidence: Two studies and one literature review.		
Smoking and exposure to smoke during pregnancy may increase the risk of	In a study in New York, the risk of having a spontaneous abortion for regular smokers increased by 46 percent for the first 10 cigarettes smoked a day and by 61 percent for the first 20 cigarettes (Chollat-Traquet, 1992).	IV
✓ Needs more research: Seven studies and one literature review.	Literature reviews indicated that women exposed to environmental tobacco smoke (ETS) during pregnancy increases the risk of pre-term delivery and spontaneous miscarriages. It was found that pregnant women who were exposed to at least seven hours of ETS a day shows a higher risk of pre-term delivery than women without ETS exposure (Windham et al., 2000 cited in Han and Gan, 2003). It was also reported that pregnant women who work in places with exposure to ETS are 1.53 times more likely to have spontaneous abortions or still births (Ahldorg et al., 1991 cited in Han and Gan, 2003).	III

# III.A. REDUCING THE INCIDENCE OF INDUCED AND SPONTANEOUS ABORTIONS CAN REDUCE THE NEED FOR PAC

Summary of Evidence	Supporting Research	Gray Type
Smoking and exposure to smoke during pregnancy may increase the risk of spontaneous abortion. ☑ Needs more research: Seven studies and one literature review.	A study conducted in Montreal, Canada, during 1982–1984 interviewed 47,146 women with spontaneous abortions concerning their cigarette, alcohol, and caffeine consumption, and found that if the associations were causal, cigarettes accounted for about 11 percent of all spontaneous abortions (40 percent in women who smoked 20 or more cigarettes per day), alcohol consumption for about 5 percent (45 percent in women drinking 3 or more drinks per day), and coffee for about 2 percent (16 percent in women drinking 10 cups per day) (Armstrong et al., 1992).	III
	A study between 1995–1997 in the U.S. of 400 adolescents and women who had spontaneous abortions either at study entry or during 22 weeks of gestation found that cotinine [defined as "a major metabolite of nicotine that indicates levels of nicotine intake" (Foundation for Blood Research, 2004)] in urine was independently associated with an increased risk of spontaneous abortion. Cotinine was detected in the urine of 34.6 percent of the adolescents and women who had spontaneous abortions and 21.8 percent of those who did not have spontaneous abortions (Ness et al., 1999).	III
	A survey of 256 female hospital employees in the United States (year not specified) found that most of the women were largely unaware of the health risks from smoking that are specific to females. Fifty-two of the participants, or 20 percent, were smokers and 204, or 80 percent, were non-smokers and their ages ranged from 16–65 years old. Only 39 percent of the participants knew smoking may increase spontaneous abortions, 27 percent ectopic pregnancy, 22 percent infertility, 17 percent early menopause, 30 percent osteoporosis, and 24 percent cervical cancer. No significant differences between age, level of education, or smoking status was detected. Approximately 29 percent of women of reproductive age in the USA smoke and between 19 percent and 30 percent of these continue to smoke while pregnant (Roth and Taylor, 2001).	III



#### III.A. REDUCING THE INCIDENCE OF INDUCED AND SPONTANEOUS ABORTIONS CAN REDUCE THE NEED FOR PAC

Summary of Evidence	Supporting Research	Gray Type
<ul> <li>Smoking and exposure to smoke during pregnancy may increase the risk of spontaneous abortion.</li> <li>☑ Needs more research: Seven studies and one literature review.</li> </ul>	A hospital-based, case-control study in Italy of 2,325 women found that smoking more than ten cigarettes per day during the first trimester of pregnancy was significantly associated with an increased risk of spontaneous abortion. Beginning in 1990, data was collected from 782 women admitted into a hospital in Milan having had spontaneous abortions, and from 1,543 randomly selected women (control group) who had delivered healthy infants. Structured questionnaires using self-reporting were given and information on the smoking habits of both the mother and father were recorded along with data on other potential confounding factors such as caffeine and alcohol consumption. Overall, 9.3 percent of the cases of spontaneous abortion were associated with smoking more than ten cigarettes per day during the first trimester of pregnancy. No association was found between smoking and spontaneous abortion. Furthermore, women reporting having had one or more alcoholic drinks per day during the first trimester of pregnancy, or women that were coffee drinkers, were found to be at a slightly higher risk of miscarriage. However, this increase was not considered to be significant (Chatenoud et al., 1998).	Π
High levels of caffeine consumption during pregnancy can increase the risk of spontaneous abortion.	A study of the relation between caffeine beverage consumption and spontaneous abortion in 2,967 pregnant women in the U.S. between 1988 and 1992 found that drinking more than three cups of tea or coffee was associated with elevated risks of spontaneous abortion (Dlugosz et al., 1996).	III
☑ Needs more research: Two studies.	A case control study regarding spontaneous abortion was conducted in the U.S. between 1986 and 1987 with 607 cases and 1,284 controls, and found that heavy caffeine consumers reporting nausea had a doubled risk for spontaneous abortion in contrast to those who did not report nausea. Heavy caffeine consumers who decreased their caffeine intake early in pregnancy had a risk of spontaneous abortion similar to that of nonconsumers (Fenster et al., 1991).	III



# IV: POLICY, PROGRAM, AND SYSTEMS ISSUES IN POSTABORTION CARE



#### IV. POLICY, PROGRAM, AND SYSTEMS ISSUES RELATED TO DELIVERY OF POSTABORTION CARE SERVICES

Although the components of PAC have been broken down into individual interventions for purposes of this module, it is important to remember that PAC has four components emergency treatment, family planning counseling and services; STI evaluation and treatment, HIV counseling and/or referral for HIV testing; and community empowerment through awareness and mobilization—that are integrally connected. Those components can be provided using various models, e.g., type of emergency treatment given in inpatient and outpatient settings, type of provider used for emergency treatment and counseling, etc.

PAC models must be designed to provide the range of care needed by women suffering the effects of incomplete abortion—and by their families and communities to ensure that women receive the postabortion care they need. For example, using a PAC delivery model which consists of restructuring the environment; training providers in infection control, counseling, and contraceptive technology; providing accurate information to patients regarding emergency treatment, complications, self-care and family planning methods, return to fertility; and improving contraceptive method availability at the site of emergency treatment can improve provider attitudes, increase provider skills in counseling, increase the number of women being discharged with a family planning method, increase referrals for contraceptive methods not available at the site, and increase quality of care and patient satisfaction.

Ensuring a supportive policy environment for PAC is important so that PAC programs and services are scaled up in a country. Furthermore, as services are redesigned to accommodate or expand PAC, it is important to assess and revise operational policies that affect how services are provided.



#### **IV.A. PROVIDER TRAINING FOR PAC**

Mid-level providers, such as nurses, nurse midwives, and auxiliary nurses, as well as chief medical officers and medical doctors, can provide high quality PAC services. In order to do so, they need training, supervision, essential equipment and supplies, and established referral systems. Also, policy that permits mid-level providers to give PAC services needs to be in place. Knowledge and skills of trained providers must include counseling, history taking, physical examination including general physical and complete pelvic exam, pain management techniques including local anesthesia of the cervix, use of equipment to evacuate the uterus, proper handling of used equipment, infection prevention techniques, and management of immediate complications. A trained provider needs to be able to determine the general physical condition of the patient, including whether there is trauma or sepsis and how to manage these complications. In addition, s/he must estimate the size and position of the uterus and determine the most appropriate technique or techniques that may be used to resolve the patient's medical problem and the service level for each patient. Trained providers should be knowledgeable of return of fertility, birth spacing for future pregnancies, and all family planning methods to prevent unintended/mistimed pregnancy and should be able to evaluate and treat sexually transmitted infections, counsel regarding HIV high risk behaviors, provide HIV counseling, and refer for HIV testing as needed. Empathy and humanization are also very important topics that should be discussed in training. Duration of training will depend on trainees' previous training and experience and must be competency-based to guarantee proficiency (Solter et al., 2000). PAC training is needed for providers regardless of the legal status of abortion in their respective countries. To date, most PAC training has been in-service.

Training a variety of categories of providers (e.g., physicians, nurses, counselors) on comprehensive PAC services could lead to:

- Increased provider knowledge of the appropriate use of various interventions for emergency treatment and medical management;
- Increased use of service delivery data to determine the best interventions to use to decrease total program costs;
- Increased provider knowledge of newer technologies for emergency treatment;
- Increased access to PAC by bringing services closer to women who need them instead of being exclusively available in secondary and tertiary service sites;
- Increased provider knowledge on alternate procedures for emergency treatment, infection prevention, and pain management;
- Increased provider knowledge on rapid return to fertility, family planning methods, and when to initiate each, depending on each patient's fertility desires, and regarding where additional reproductive health services may be available when needed;
- Increased and humane treatment of all patients, regardless of providers' assessment of whether the woman had a spontaneous or induced abortion; and
- Increased patient knowledge of her condition, treatment to be used, possible post treatment complications and care seeking if needed, follow-up care, return to fertility, and need to adopt a contraceptive method to prevent unwanted pregnancy.

Summary of Evidence	Supporting Research	Gray Type
<ul> <li>Providing pre-service training to physicians can result in increased use of MVA over sharp curettage.</li> <li>☑ Enough evidence for action: One study.</li> </ul>	A 1999–2001 intervention study conducted in Bolivia's three largest maternity hospitals found that training providers led to significantly greater MVA use in two hospitals, while physicians in the third hospital continued to use sharp curettage at pre-intervention rates. A review of clinical logbooks for 1,993 procedures showed that use of MVA for uterine evacuation increased to 92 percent from 40 percent in La Paz, and to 75 percent from 68 percent in Sucre. Physicians in Santa Cruz (n=3,044) used MVA for 15 percent of women before and after the intervention. Observations and physician interviews showed that medical residents on rotation were most likely to use MVA, whereas older obstetrician-gynecologists had been using sharp curettage for many years and felt more comfortable with the procedure. Physicians also complained that they did not	IV
	et al., 2003b, Bolivia, for a description of the intervention.	

What Works: Postabortion Care





Summary of Evidence	Supporting Research	Gray Type
In-service PAC training can increase the number of PAC patients who report that they received important information on their care regardless of whether sharp curettage or MVA was used. ☑ Strong evidence: Two studies.	A study in 1997–1998 in six hospitals of the Mexican Institute of Social Security (IMSS) found that providing PAC training for providers led to an increase in PAC clients reporting that they received important information on their postabortion care, regardless of whether MVA or <u>sharp curettage</u> was used. While only 55.7 percent of the 282 women who received PAC from institutions where no PAC training was conducted (the control sites) reported that they received information on the finding of specific problems by their physician prior to uterine evacuation, 87 percent of the 279 women who received <u>sharp curettage</u> from institutions with PAC training for providers and 83.7 percent of the 251 women who received MVA from institutions with PAC training for providers (the intervention sites) reported that they received information on the finding of specific problems by their physician prior to uterine evacuation. While only between 2.2 percent to 9.6 percent of women who received PAC at the control sites reported that they received information on various different signs of post-uterine complications, between 22.8 percent and 41.3 percent of women who received PAC from the intervention sites received information on various different signs of post-uterine complications, between 22.8 percent and 41.3 percent of women who received PAC at the control sites received information on various different signs of post-uterine complications, between 24.8 percent of those receiving for more than two weeks, fever, chills, and foul-smelling vaginal discharge. While only 26 percent of women who received PAC at the control sites received information on where to seek help in case of complications, 32 percent of those receiving MVA at 42 percent of those receiving <u>sharp curettage</u> PAC at the intervention sites received information on where to seek help in case of complications. While only 10.8 percent of women who received PAC at the control sites received information on where to seek help in case of complications. While only 10.8 per	Π

Summary of Evidence	Supporting Research	Gray Type
In-service PAC training can increase the number of PAC patients who report that they received important information on their care regardless of whether sharp curettage or MVA was used. ☑ Strong evidence: Two studies.	A study in Burkina Faso found that training providers led to increased information given to PAC patients. Prior to the intervention, providers explained the treatment they were providing to 52 percent of patients. After the intervention, 86 percent of women received information about the procedure. Pre-intervention, 3 percent of patients were told of possible complications or danger signs for which they should seek care, and 12 percent were told of the immediate return to fertility. After the intervention, 46 percent received information about possible danger signs and 94 percent about the return of fertility (Ministry of Health, Burkina Faso, 1998). See Appendix A, Ministry of Health, Burkina Faso, for a description of the intervention.	III
In-service PAC training can increase the number of PAC patients who report that they received important information on their care. ☑ Strong evidence: Two studies.	A 2001–2003 operations research study in Senegal found that at baseline 68 percent of health center or health post personnel had no previous PAC training (32 percent did), including treatment or counseling, and the proportion of women receiving information on their medical condition or care was very low. The pre/post intervention study introduced an integrated three-element PAC model in 18 primary care sites in two predominantly rural regions in Senegal to test the feasibility of making services more immediately accessible to women in rural areas and to assist with the development of national standards of care for PAC services. Patients treated after provider training took place reported receiving important information at higher (although far from ideal) levels: medical treatment was explained to 51 percent of women, compared to 23 percent before the intervention; 40 percent of women were told of possible future complications, up from 15 percent; and 60 percent were told what to do if they had any complications, compared to 38 percent. Fifty-five percent of women after the intervention, and 20 percent of women before the intervention felt that counseling was sufficient (Dabash, 2003). See Appendix I, Dabash, 2003, for a description of the intervention.	III





Summary of Evidence	Supporting Research	Gray Type
<ul> <li>In-service PAC training can increase the number of PAC patients who report that they received important information on their care.</li> <li>☑ Strong evidence: Two studies.</li> </ul>	A 1996–98 intervention study in a referral hospital in Lima, Peru, tested a model where all PAC services were provided in an obstetrics and gynecology emergency room on an outpatient basis. Doctors were trained in MVA and improved clinical practices, counseling on medical care and family planning, and provision of contraceptive methods. The original study used a pre/post intervention design with no control group. A follow-up assessment of the same outcomes was conducted in 2000–2002 to assess the sustainability of the intervention without outside assistance. Only 10–12 percent of women treated before the intervention about the patient's medical diagnosis, treatment needed, or the results of the procedure. Information about the patient's medical diagnosis was provided to 30 percent of women after the intervention and 35 percent three years later, and information given about the needed treatment increased to 47 percent in 1997 and 62 percent in 2000. Information about treatment results was provided to 28 percent of patients after the intervention and remained fairly constant at 31 percent three years later. Data collection included review of the surgical logbook for 455 patients, clinical histories and exit interviews of 323 patients, a time-motion study of 52 patients from arrival at the emergency room until departure, 17 random inventories of supplies and equipment, and 13 in-depth interviews with providers and policymakers (Benson and Huapaya, 2002).	III
In-service PAC training can increase the number of PAC patients who report receiving sufficient information to make an informed choice on contraception and who leave the hospital with a contraceptive method. ✓ Strong evidence: One study.	A study carried out in 1997–1998 in six Institute of Social Security hospitals in Mexico City, Mexico, found that more women in intervention sites reported that they had sufficient information to make an informed choice on contraception and that they left the hospital with a contraceptive method. In hospitals where PAC training was conducted, between 66.4 percent and 77.8 percent of PAC clients received a method prior to leaving the hospital compared to 39.6 percent of PAC patients in control sites. Over 27 percent of women who received PAC in control sites explained that they left the hospital without contraception because they did not receive enough information to make a choice, as compared to zero to 10.2 percent of those in intervention sites. Significantly greater proportions (30–97 percent) of women in the intervention sites as compared to the control sites (16–65 percent) received information and counseling about future pregnancy; 64.5–84.4 percent of the women in intervention sites knew the advantages of preventing immediate pregnancy compared to 29.4 percent in control sites; 74.1 percent of the women in the (continued)	III

Summary of Evidence	Supporting Research	Gray Type
In-service PAC training can increase the number of PAC patients who report receiving sufficient information to make an informed choice on contraception and who leave the hospital with a contraceptive method.	(continued) intervention sites received information on pregnancy prevention, compared to 33 percent in the control sites; and whereas 87.6–94.1 percent of women in intervention sites were offered a contraceptive method, only 69.1 percent were offered one at control sites (Billings et al., 2003a). See Appendix I, Billings et al., 2003a, for a description of the intervention.	III
In-service PAC training can increase the number of PAC patients who receive family planning counseling and leave the hospital with a contraceptive method. ☑ Strong evidence: Two studies.	A study conducted from 1995–1997 in three hospitals in Bolivia found that contraceptive counseling was almost nonexistent in two of the three hospitals before the study. Following provider training on PAC and contraceptive counseling, counseling increased sharply from 2.8 percent to 84.6 percent in one hospital; from 12.2 percent to 100 percent in another hospital; and from 3.6 percent to 97 percent in the third hospital. "All women who received counseling declared that counselors were very friendly, gave complete information about methods, and left the decision on method choice up to the woman. In addition, counselors also gave good and complete information on when and where to return for postabortion follow-up" (Díaz et al., 1999: 71). Contraceptive acceptance before training was between 10.3 percent and 14.3 percent. Following training, contraceptive acceptance increased to a range of between 63.8 percent and 87.6 percent (Díaz et al., 1999).	III





Summary of Evidence	Supporting Research	Gray Type
In-service PAC training can increase the number of PAC patients who receive family planning counseling and leave the hospital with a contraceptive method. ☑ Strong evidence: Two studies.	An intervention study in Senegal introducing integrated postabortion services found that the proportion of women reporting being counseled on family planning increased from 18 percent to 34 percent after training. Of those counseled, 56 percent left with a method before the intervention (10 percent of all patients), while 76 percent of women counseled (26 percent of all patients) left the hospital with a contraceptive method after the intervention. Providers interviewed reported counseling 31 percent of women on FP before the intervention, and 51 percent after, and said 18 percent of women before and 40 percent of women after the intervention left with a contraceptive method (Centre de Formation et de Recherche en Santé de la Reproduction and Clinique Gynécologique et Obstétricale CHU A. le Dantec, 1998). See Appendix I, Centre de Formation, 1998, for a description of the intervention. A 2001 operations research study to expand postpartum and postabortion family planning in five hospitals in Honduras found that training providers to offer family planning counseling and services to postabortion care patients prior to their discharge from the hospital led to dramatic increases in the proportion of patients receiving information and methods. At baseline, only 17 percent of postabortion patients were counseled and 13 percent of women being discharged with a method by the endline survey. Conversely, the percent of women being discharged with a method by the endline survey. Conversely, the percent of women being discharged with a method by the endline survey. Medina et al., 2003, for a description of the intervention	III

Summary of Evidence	Supporting Research	Gray Type
In-service clinical and counseling training can lead to increased use of MVA and increased numbers of PAC patients receiving family planning counseling and who leave the PAC facility with a contraceptive method. ✓ Strong evidence: One study.	A 1996–1998 intervention study in a referral hospital in Lima, Peru, tested a model where all PAC services were provided in an obstetrics and gynecology emergency room on an outpatient basis. At baseline, 38 percent of patients were told they could become pregnant again almost immediately, 18 percent received family planning counseling, and only 2 percent left with a method. In the immediate post-intervention period, the proportions of women receiving information about their return to fertility and family planning rose to 65 percent and 78 percent, with 59 percent leaving with a contraceptive. Three years later, 72 percent were informed of their return to fertility. There were also significant increases in women receiving a method, 48 percent of patients in 1997 and 18.8 percent of patients in 2000 were given a follow-up family planning appointment. MVA use also increased dramatically after the training, from 0 percent to 90 percent, and continued to increase over the subsequent years, even after external funding and technical assistance ended, to an average of 98 percent in 1999 and 2000 (Benson and Huapaya, 2002). See Appendix I, Benson and Huapaya, 2002, for a description of the intervention.	III





#### **IV.A. PROVIDER TRAINING FOR PAC**

Summary of Evidence	Supporting Research	Gray Type
Training of providers in postabortion family planning and fertility can increase promotion of condom use and promotion of more effective methods of contraception, in addition to correct counseling concerning a PAC patient's return to fertility. ✓ Strong evidence for action; needs more research: One study.	A 2000–2003 operations research study to increase postabortion family planning in Perm, Russia, found that training obstetrician/gynecologists, nurses, and midwives increased provider knowledge about postabortion family planning and fertility return. Prior to the intervention, only half of providers correctly responded that "fertility returns within two weeks" after an abortion, in contrast to 83.3 percent of providers after the intervention. The content of family planning counseling also changed: providers were more likely to mention condoms as an appropriate postabortion method after the intervention (40 percent, compared to 6.5 percent before the intervention) and less likely to recommend natural family planning (0 percent, compared to 32.3 percent before the intervention). This study used a quasi-experimental time series design to compare two interventions to institutionalize pre-discharge postabortion counseling and family planning services in five sites (two hospitals and three outpatient facilities). Model I consisted of training providers in family planning counseling and interpersonal communication skills and developing and supplying provider job aids and client education materials on postabortion family planning. Model II had the same intervention components, plus offered clients a free initial three- month supply of condoms, pills, DMPA, or IUD. The interventions were evaluated by comparing women assigned to each of the interventions to a "control" group of women attending the same facilities prior to the intervention. Researchers interviewed 1,516 women and observed 40 client- provider interactions prior to the clients being discharged. In addition, researchers interviewed 49 providers and conducted 1,079 13-month follow-up interviews with clients to assess contraceptive use and subsequent pregnancies. The study also included a cost assessment, comparing the average cost to clients for the abortion (including travel, the procedure, and any related complications) with the cost for a one-year supply o	Π
Summary of Evidence	Supporting Research	Gray Type
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<ul> <li>Training of providers can improve clients' knowledge of emergency treatment and follow up care.</li> <li>☑ Enough evidence for action: One study.</li> </ul>	Following an intervention that introduced an integrated PAC model in Senegal, a higher percentage of PAC patients reported being counseled on their treatment and follow-up care; 59 percent were given this important information after providers were trained, in contrast to 43 percent before the intervention. A higher percentage of patients reported receiving counseling specifically on possible future problems: 7 percent before the intervention versus 11 percent after (Centre de Formation et de Recherche en Santé de la Reproduction and Clinique Gynécologique et Obstétricale CHU A. le Dantec, 1998). See Appendix I, Centre de Formation, 1998, for a description of the intervention.	III
Training in MVA can result in the use of MVA as well as sharp curettage for PAC. ☑ Enough evidence for action: One study.	A pre/post intervention study conducted in 1994 in two Egyptian hospitals in Cairo and in Minia (a town in Upper Egypt) found that a six-day training on MVA and counseling led to use of MVA as well as sharp curettage for PAC. Prior to the training, only sharp curettage was used in 169 cases per month at the hospitals. After three months, only 16 patients received sharp curettage, with MVA being routinely used on an average of 154 cases per month. Training included demonstrations and supervised practice in surgical theaters and also covered contraceptive methods, family planning counseling training, and pain control. The study involved 552 structured observations of client-provider interactions; interviews with 154 physicians, 66 nurses, and 550 postabortion patients; and a review of medical records. A total of 83 physicians were interviewed pre-intervention and 71 post-intervention. The hospitals served as a clinical training site for medical students (Huntington et al., 1995).	III



Summary of Evidence	Supporting Research	Gray Type
<ul> <li>Training can increase the use of pain medication for PAC patients.</li> <li>✓ Enough evidence for action; needs more research: Two studies.</li> </ul>	A 2001–2003 operations research study in Senegal found that women received little or no pain medication during uterine evacuation. Reported pain was high, with 65 percent of women reporting strong pain and 15 percent reporting moderate pain during the procedure. These rates dropped after the intervention, when 74 percent of women were given a local anesthetic during treatment. (Virtually all women were prescribed pain medication, but medications were not always available or affordable). Forty percent of women post-intervention reported strong pain and 25 percent reported moderate pain during the procedure, with the remaining 35 percent reporting minimal or no pain (Dabash, 2003). See Appendix I, Dabash, 2003, for a description of the intervention.	III
	An evaluation conducted for a project in Kenya 19 weeks following training for private nurse midwives to provide PAC services found that 67 percent of private nurse midwives interviewed, "administered Buscopan either orally or by injection. For others, the intensity of the pain is minimized by Paracatemol injection. Diazepam is used to calm overanxious patients and Ergometrine is the preferred drug for controlling bleeding following MVA" (Yumkella and Githiori, 2000: 28). The training was conducted in 1999 with a series of six one-week workshops. A total of 57 nurse midwives were trained. These 57 nurse midwives represented 95 percent of the nurse midwives in three Kenyan provinces. Of the 57 trained providers, 32 were assessed during the evaluation (Yumkella and Githiori, 2000).	V

Summary of Evidence	Supporting Research	Gray Type
Training increases physician satisfaction with MVA. ☑ Strong evidence: Three studies.	A pre/post intervention study carried out in 1994 in two Egyptian hospitals in Cairo and in Minia (a town in Upper Egypt) found that a six-day training on MVA and counseling increased physician satisfaction with MVA. Following training, 71 percent reported that they were very satisfied with MVA and 43 percent reported that they considered MVA safer than sharp curettage. Thirty-nine percent of physicians reported that MVA was easier to use than sharp curettage (Huntington et al., 1995). See Appendix I, Huntington et al., 1995, for a description of the intervention.	III
	A 2001–2003 operations research study in Senegal that introduced a new model of PAC services in health centers and health posts including MVA found that providers expressed greater satisfaction with MVA than with digital curage, which had been the primary method of emergency treatment before the intervention. (Digital curage is a method where the forefingers are used to manually explore the uterus and evacuate identified contents, creating opportunities for infection particularly in the absence of systematic hand washing and use of gloves). All providers interviewed were either satisfied (65 percent) or very satisfied (35 percent) with MVA as a method of uterine evacuation. Reasons given by more than 50 percent of providers were that it causes fewer traumas than other methods; it allows for uterine exploration; it is easy to use; and it has a low associated morbidity. In contrast, 48 percent of providers said they were somewhat satisfied and 17 percent said they were not satisfied with digital curage, with more than half citing the risk of infection, hemorrhaging, and pain to the woman as shortcomings. However, almost half of providers saw the low cost of curage as an advantage in relation to MVA and other methods (Dabash, 2003). See Appendix I, Dabash, for a description of the intervention.	III





Summary of Evidence	Supporting Research	Gray Type
<ul> <li>Training increases physician satisfaction with MVA.</li> <li>☑ Strong evidence: Three studies.</li> </ul>	A 1999–2001 intervention study conducted in Bolivia's three largest maternity hospitals found that physicians who had been trained and used MVA were equally or more satisfied with the procedure compared to sharp curettage. Forty-eight physicians interviewed after the intervention said MVA was more (49 percent) or equally (36 percent) safe; more (26 percent) or equally (72 percent) effective; more (52 percent) or equally (40 percent) simple to use; and that the use of MVA decreased the risk of procedural complications (83 percent). Almost all physicians (94 percent) agreed that because women are conscious during MVA treatment, the procedure leads to greater interaction with the client than sharp curettage (Billings et al., 2003b). See Appendix I, Billings et al., 2003b, for a description of the intervention.	Π
Training providers can result in increased counseling of PAC patients regarding emergency treatment and follow-up home care. ☑ Strong evidence: Two studies.	A pre/post intervention study carried out 1994 in two Egyptian hospitals in Cairo and in Minia (a town in Upper Egypt) included a six-day training on MVA and counseling and resulted in increased counseling of PAC patients on treatment procedures and danger signs. Following provider training, the percent of patients who reported that treatment procedures were explained to them increased from 1 percent to 48 percent and the percent of patients who received instructions about what to do if they had a problem after discharge from the hospital increased from 1 percent to 49 percent. Following provider training, patient's knowledge of the warning sign of bleeding for more than two weeks postabortion increased from 17 percent to 20 percent, and an awareness of fever or shivers as a warning sign increased from 7 percent to 27 percent (Huntington et al., 1995). See Appendix I, Huntington et al., 1995, for a description of the intervention.	Π
	Following an intervention to introduce an integrated PAC model in Senegal, a higher percentage of PAC patients reported being counseled on their treatment and follow-up care; 59 percent were given this important information after providers were trained, in contrast to 43 percent before. Patients reported receiving counseling specifically on possible future problems at much lower rates; 7 percent before the intervention versus 11 percent after (Centre de Formation et de Recherche en Santé de la Reproduction and Clinique Gynécologique et Obstétricale CHU A. le Dantec, 1998). See Appendix I, Centre de Formation, 1998, for a description of the intervention.	III

Summary of Evidence	Supporting Research	Gray Type
Training providers can increase counseling of PAC patients concerning family planning options and the intention of PAC patients to use family planning.	A pre/post intervention study in two Egyptian hospitals in 1994 in Cairo and in Minia (a town in Upper Egypt) that included a six day training on MVA and counseling increased counseling of PAC patients concerning family planning options and the intention of PAC patients to use family planning. Following provider training, providers offering their PAC patients family planning increased from 10 percent to 50 percent. Following provider training, an increase of 30 percent occurred in PAC patients who reported intending to use a contraceptive method. Pre- and post- intervention levels were not listed in the study (Huntington et al., 1995). See Appendix I, Huntington et al., 1995, for a description of the intervention.	III
	A 2001–2003 operations research study in Senegal that included a contraceptive technology update and counseling workshop for providers as part of the intervention found that patients were almost twice as likely to have received family planning counseling after the intervention as before. At baseline, only 38 percent of patients interviewed at health centers received any family planning counseling before discharge, compared to 70 percent after. Twenty percent of patients left the health center with a method, and a substantial proportion (number not given) said they intended to practice family planning after discussing it with their partner (Dabash, 2003). <i>See Appendix I, Dabash, 2003, for a description of the intervention.</i>	III
<ul> <li>Training providers can change provider attitudes toward PAC patients.</li> <li>☑ Enough evidence for action; needs more research: One study.</li> </ul>	Following PAC training in Kenya for private nurse midwives conducted in 1999, one of the private nurse midwives noted: "PAC training changed my way of thinking. I used to judge these people (i.e., patients with incomplete abortion). But PAC training changed my way of thinking. I started giving the services to clients regardless of how they started an abortion" (Yumkella and Githiori, 2000: 32). An evaluation was conducted 19 weeks following training for private nurse midwives to provide PAC services (Yumkella and Githiori, 2000). See Appendix I, Yumkella and Githiori, 2000, for a description of the intervention.	IV





Summary of Evidence	Supporting Research	Gray Type
<ul> <li>Training providers to improve the quality of postabortion care can increase women's:</li> <li>(a) positive evaluations of quality of care;</li> <li>(b) acceptance of contraceptive methods; and</li> <li>(c) satisfaction with the methods.</li> <li>☑ Enough evidence for action: Two studies.</li> </ul>	A study of 339 postabortion patients in Oaxaca, Mexico, found that an intervention designed to improve postabortion quality of care through which health care workers working in the intervention hospital underwent a series of workshops that focused on a range of issues including technology, equipment usage, humane treatment, information exchange, pain management, and family planning counseling and services, led to women reporting a positive evaluation of quality of care and acceptance of a contraceptive method with which the woman felt satisfied. For medical procedures, some physicians were later chosen as master trainers and underwent further training. Following hospital protocol, no attempt was made to determine whether or not the patient's abortion was spontaneous or induced in nature. MVA was being used 0 percent of the time at baseline and increased to 78.1 percent at post-intervention. Use of sharp curettage decreased from 10.4 percent to 20.8 percent and a combination of sharp curettage and MVA decreased from 10.4 percent to 1.1 percent. Length of hospital stay was reduced by 36 percent. Respectful communication techniques also increased, for example, 74.4 percent of the patients knew who their attending physician was after the intervention compared to 17.4 percent at baseline. Following the intervention, 84.8 percent of the patients said that the physician used the patients' name, compared to 45.5 percent at baseline. Patient satisfaction with the information provided at a series of stages increased from 17.6 percent to 72.5 percent. Patients receiving contraceptive counseling increased from 42.4 percent to 85.5 percent, and use of any method increased from 29.5 percent. Pain management and privacy did not significantly improve. Many of the changes made were also supported by hospital-level policy changes. Guidelines were modified to stipulate use of MVA with a local anesthesia if a patient's uterus was determined to be smaller than 12 cm. For pain, analgesia was to be administered both before and after	III

Summary of Evidence	Supporting Research	Gray Type
<ul> <li>Training providers to improve the quality of postabortion care can increase women's:</li> <li>(a) positive evaluations of quality of care;</li> <li>(b) acceptance of contraceptive methods; and</li> <li>(c) satisfaction with the methods.</li> <li>☑ Enough evidence for action: Two studies.</li> </ul>	A 1999 study in Bolivia, using a pre- and post-intervention assessment, found that improving the quality of PAC services, specifically provider attitudes and counseling skills, increased acceptance of family planning methods. The study was "aimed at assessing the feasibility of carrying out a program to improve the quality of services for postabortion complications, including contraceptive counseling and services, and the impact on client satisfaction and contraceptive acceptance" (Díaz et al., 1999: 64). Physicians and counselors at the three hospitals attended a training course on the elements of PAC, counseling, and contraceptive technology. The training was intended to change their attitudes and reduce the incidence of repeat abortions through provision of family planning services. Before the intervention, doctors were expected to denounce women who presented with evidence of an induced abortion. At the beginning of the project, all three hospitals significantly improved their PAC facilities and equipment, as none had previously had a specific PAC program. In two of the three hospitals, contraceptive counseling was basically nonexistent prior to the intervention. Women who did not choose a contraceptive method were given an additional opportunity during a follow up visit after one month. Data collected from October 1995 to December 1997 in three maternity hospitals, all serving as referral centers in three different cities, showed a large increase among PAC patients accepting some method of contraception; from 14.3 percent to 63.8 percent in one hospital, from 10.3 percent to 87.7 percent in another hospital, and from 13.2 percent to 81.8 percent in the last hospital. Data were recorded in a logbook and clinical records. "Several women mentioned spontaneously that the quality of the counseling was perhaps the most important reason they had evaluated the attention they received as good" (Diaz et al., 1999: 68). This study concluded that it is possible, with modest inputs and an emphasis on training, to chang	IV





Summary of Evidence	Supporting Research	Gray Type
Involving private providers in providing PAC services can increase emergency treatment and family planning counseling and services in communities. ☑ Enough evidence for action: One study.	A 1998 study in Western Kenya, in the Nyanza and Rift Valley provinces, found that involving private providers in the provision of PAC services increased the use of family planning methods. The study was based on an intervention which involved 35 private physicians and was based on the premise that if private physicians were well trained and sensitized to the needs of women in their communities, they would agree to provide PAC and other reproductive health services, at a reduced cost. The intervention developed guidelines on facility standards; developed a five-day training curriculum which included practical and theoretical components of all aspects of reproductive health; identified referral mechanisms; and adopted protocols for family planning methods. The intention was to form a network of private physicians to provide comprehensive and affordable PAC and family planning services: "Involving private physicians was seen as a rapid and cost-effective way of expanding PAC services to the community" (Rogo et al., 1998: 79). During the first year after PAC services were introduced, a total of 675 women with incomplete abortion or menstrual irregularities had been treated, and over 800 new family planning patients had been recorded. Between 12.5 percent and 100 percent of clients at each facility left with a family planning method. The majority of the women had not previously been using a method. The private providers agreed to provide contraceptive methods for free (contraceptives are provided free of charge by the government), with only a minimal consultation charge for family planning clients. A sliding scale for charges was used to ensure that PAC services were accessible for all women. Physicians were provided with one set of MVA equipment (Rogo et al., 1998).	III

Summary of Evidence	Supporting Research	Gray Type
Training midwives to counsel PAC patients on family planning, STIs/HIV, and nutrition (in addition to midwives undertaking other aspects of PAC, including emergency treatment using MVA) can increase counseling on these topics. ☑ Strong evidence: One study.	A 1998–1999 pilot study in Uganda in 13 health facilities found that training midwives to counsel PAC patients on family planning, STI/HIV, and nutrition increases counseling on these topics. At the time of treatment 70 percent of women received a family planning method, 64 percent received STI/HIV counseling or services, and 33 percent received appropriate nutrition counseling. The evaluation revealed that integrated services were easier to establish at health centers, where midwives were responsible for all reproductive health services, including ordering of supplies, than at the hospital level. About one third (29.6 percent) of PAC patients at health centers left with a family planning method, whereas previous to this study no PAC services were provided at the health center level. In hospitals, it was found that prior to the intervention "there was no routine system of postabortion counseling and no efforts to break the cycle of unwanted pregnancy and unsafe abortion" (Kiggundu, 1998: 9). The study monitored 781 PAC patients during nine months of data collection. Three regional or referral hospitals, four district hospitals, and six health centers participated in the study. The pilot project involved training 10 physicians and 24 midwives separately in a series of three two-week workshops. The doctors and medical officers were trained as PAC trainers who in turn trained the midwives in PAC, integration with other reproductive health services, and record keeping during a series of three two-week workshops. A supervision visit was conducted within two weeks post-training to assist in the implementation of the new PAC services. Ongoing support and supervision was provided every three months. The program was evaluated six months after the last two-week training session and involved the inspection of logbooks and patient records, pre- and post-test skills assessment of the midwives, questionnaires administered to the midwives and their supervisions, interviews of PAC patients, monitoring reports, and direct obser	III





Summary of Evidence	Supporting Research	Gray Type
Training private nurse midwives can improve their knowledge scores concerning PAC. ☑ Enough evidence for action: One study.	A project to train private nurse midwives in Kenya in 1999 increased knowledge scores concerning PAC. These private nurse midwives did provide PAC services at baseline. The training was conducted in 1999 with a series of six one-week workshops. A total of 57 nurse midwives were trained. Of the 57 trained providers, 32 were assessed during the evaluation, conducted 19 weeks following training. All of the 32 trained midwives who were evaluated achieved scores of 70 percent or above concerning three critical PAC procedures (training included use of MVA, postabortion family planning counseling and services, pain control and management, infection prevention and control, timely and appropriate referral practices, STI/HIV prevention and management and record keeping and reporting), and successfully performed 10 MVA procedures on women presenting with abortion-related complications and a gestational age less than 12 weeks (Yumkella and Githiori, 2000).	IV

Summary of Evidence	Supporting Research	Gray Type
Distance education.	No PAC-related studies found.	



### IV.A.3. PEER SUPPORT

Summary of Evidence	Supporting Research	Gray Type
<ul> <li>Providing peer support may be a useful tool for supervision.</li> <li>☑ Needs more research: One study.</li> </ul>	From 1998-2000, 75 private nurse midwives were trained to provide PAC services in 44 facilities throughout Kenya. Almost half of the providers interviewed had contacted a contact for assistance. "More study is needed to document the long-term sustainability of this approach as a supplement or even partial replacement for more traditional forms of supervision" (Dohlie et al., 2003; xii).	IV

#### **IV.B. SYSTEMS ISSUES FOR DELIVERY OF PAC SERVICES**

#### IV.B.1. Infection prevention, standard precautions, and instrument processing

The absence of industry-wide standards for evaluation of MVA technology makes infection prevention and instrument processing difficult to assess (Girvin and Ruminjo, 2003). Some researchers suggest all MVA instruments should be rinsed with high-level disinfectant or sterilized water after being cleaned by chemical means and before reuse (Girvin and Ruminjo, 2003). The Ipas Easy Grip® Cannulae and Ipas MVA Plus® may prevent cannulae from clogging during MVA procedures, but more information is needed on these instruments and techniques.





# IV.B.I. INFECTION PREVENTION, STANDARD PRECAUTIONS, AND INSTRUMENT PROCESSING

Summary of Evidence	Supporting Research	Gray Type
<ul> <li>PAC training on infection prevention can increase infection prevention measures by physicians and staff.</li> <li>✓ Enough evidence for action: One study.</li> </ul>	A pre/post intervention study carried out in 1994 in two Egyptian hospitals in Cairo and in Minia (a town in Upper Egypt) found that a six-day training on MVA and counseling increased infection prevention measures taken by physicians and staff. Pre-intervention, only 60 percent of postabortion surgical procedures were observed to be performed with sterile gloves; in the post-intervention period, use of sterile gloves was universal. Prior to training, 74 percent of patients were treated with sterile dilators and 54 percent were treated with sterile curettes, specula, and sponge forceps; following training, sterile instruments were universally used. "The study project did not supply antiseptics or sterile gloves; therefore, these changes in clinical practice were made with existing resources" (Huntington et al., 1995: 355). Prior to training, over 30 percent of the providers did not wash their hands; following training, over 90 percent used a strong antiseptic to wash their hands (Huntington et al., 1995). See Appendix I, Huntington et al., 1995, for a description of the intervention.	III

#### **IV.B.2. COMMODITIES AND LOGISTICS**

Summary of Evidence	Supporting Research	Gray Type
Lack of basic supplies such as disinfectant solutions can lead to the overuse of antibiotics. ☑ Needs more research: One study.	A study in Egypt conducted from 1995 to 1996 found that a lack of basic supplies, such as disinfectant solutions, has led to overuse of antibiotics. The study found that only 10 percent of patients received no antibiotics prior to discharge (Huntington et al., 1998). See Appendix I, Huntington et al., 1998, for a description of the intervention.	III





#### IV.B.3. ASSESSMENT FOR RECOVERY, FOLLOW-UP, AND REFERRAL MECHANISMS

- No PAC-related studies were found on the topics of assessment for recovery, follow-up, or referral mechanisms.
- More information is needed on how to strengthen referral networks to improve access to care and to better define the role of health posts within the referral network (Dabash et al., 2003).

#### **IV.B.4. SUPERVISION**

As with other areas of reproductive health, supervision is a critical part of sustaining postabortion care interventions; however, supervision is not often conducted in a systematic manner, and there is little evidence on best practices for supervision in PAC. PAC programs often lack explicit norms and guidelines; supervisors lack adequate training, guidelines, and instruments; and supervision is generally conducted on a discretionary basis (Brambila, 2004). An operations research project conducted in Mexico, Bolivia, and Guatemala in 2002–2003 developed and tested a supervision instrument and guidelines to be used to provide constructive feedback to service providers and program managers. A technical committee composed of representatives of governmental and nongovernmental health services identified key supervision problems and reviewed supervision materials developed by Pathfinder, EngenderHealth, JHPIEGO, Ipas, Population Council, and WHO/RHR. They then developed an improved instrument that was tested over a four-month period in one hospital in each of the three countries. Hospitals were purposively chosen based on willingness of the administration to participate, as well as the existence of an established PAC program (at least three years, with an average of five or more patients per day) and "a reputation for providing reasonable quality of care" (Brambila, 2004: 6).

The evaluation concluded that the new instrument shared many of the same shortcomings with previous supervision tools. In particular, it was too long, parts were subjective or ambiguous, and it did not help the supervisor to focus on problem solving or priority setting for program improvement. Although no results are available, researchers believe the new instrument, being tested in Guatemala, "makes supervision more focused on substantive service problems, provides a framework to analyze problems one at a time, provides guidelines to discuss each problem with the relevant staff members, allows the supervisor to develop improvement plans that are proposed by workers who will implement them and, in general, makes supervision more focused on problem-solving than problem identification" (Brambila, 2004: 10). An English version of the revised instrument is included in the final report (Brambila, 2004).





### IV.B.5. NON-TRAINING SUPPORT THAT PROVIDERS NEED TO HELP DO THEIR JOBS

Summary of Evidence	Supporting Research	Gray Type
Non-training support that providers need to help do their jobs.	No PAC-related studies found.	

#### **IV.B.6. WHO CAN PROVIDE PAC SERVICES**

Summary of Evidence	Supporting Research	Gray Type
Allowing trained midwives to provide PAC (using MVA) will help increase access to PAC services at all levels of the health system. ☑ Strong evidence: Five studies	In 1996, Ghana's Ministry of Health instituted the "National Reproductive Health Service Policy and Standards" in which registered midwives at all levels of the health system were listed as appropriate providers of PAC services, including 1) emergency treatment for incomplete abortion with MVA; 2) postabortion family planning counseling and methods; and 3) information to link women to other reproductive health services. For a study conducted in Ghana from 1996 to 1998, IPAS trained registered midwives who then treated a total of 323 women for incomplete abortion with MVA. Prior to the intervention, all 323 women would have had no option but to travel to the district hospital for emergency care by a physician. Structured questionnaires were conducted with 59 women treated for incomplete abortion prior to discharge from the hospital, 78 women treated for incomplete abortion by midwives in health centers in maternity homes, eight physicians providing PAC in hospitals, 39 community leaders, and nine national level policymakers. The general consensus was that, in the words of one physician, "Some of the patients come from far away, so if the midwife in their community can provide PAC services, this saves lives, money and prevents complications" (Billings et al., 1999a: 147). One policymaker noted: "It is important that emergency treatment be given to those women at the source and at the spot where they live. Doctors are not available for people to get emergency treatment, whereas there are enough midwives who can assist if these patients are aware and can go to them for help" (Billings et al., 1999a: 148).	III
	In 1999, the Ministry of Health in Myanmar acknowledged the potential role of midwives in PAC. Prior to 1999, hospital doctors and nurses had responsibility for the clinical management of PAC patients, but PAC had not been integrated into the health services in rural health centers staffed by midwives. Midwives perform nearly 45 percent of deliveries and provide nearly two-thirds of ANC to pregnant women. In 1999, the Ministry of Health provided training for midwives. After training, midwives visited an estimated 80 percent of PAC patients after discharge. As one	III
	midwife put it: "After training, we feel confident about when to start birth spacing and telling patients when they can have sex again; before we did not discuss this" (Htay et al., 2003: 32). The study interviewed 22 hospital and clinic staff, 163 volunteer community health providers, and 170 PAC patients (Htay et al., 2003).	

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#### **IV.B.6. WHO CAN PROVIDE PAC SERVICES**

Summary of Evidence	Supporting Research	Gray Type
Allowing trained midwives to provide PAC (using MVA) will help increase access to PAC services at all levels of the health system. Strong evidence: Five studies.	A 1998–1999 pilot study in Uganda in 13 health facilities found that (based on site logbooks, patient records, monitoring reports, pre- and post-test skills knowledge and skills assessment, and patient interviews) training midwives to provide PAC services, including MVA, increased women's access to PAC at all health facility levels. Midwives treated 75 percent of the 437 PAC patients who received MVA with no procedure-related complications. The study monitored 781 PAC patients during the nine months of data collection (Kiggundu, 1999). See Appendix I, Kiggundu, 1999, for a description of the intervention.	III
	A project to train private nurse midwives in Kenya in 1999 increased access to PAC. Four hundred and thirty-six PAC patients were provided services during the 1999 assessment which otherwise may not have had access to services. The Kenyan Ministry of Health has now changed its policies to allow nurse midwives to provide PAC (Yumkella and Githiori, 2000).	III
	A study in Burkina Faso found that training midwives as well as physicians to use MVA for emergency treatment, along with ensuring the availability of equipment, led to near universal use of MVA and to service provision by lower level providers. Before the intervention, most patients (60 percent) were treated with sharp curettage by an obstetrics and gynecology specialist. In cases where a trained physician was not available, providers generally treated women with digital curage—the only method available to untrained or lower-level providers (digital curage is a method where the forefingers are used to manually explore the uterus and evacuate identified contents, creating opportunities for infection (particularly in the absence of systematic hand washing and use of gloves). As part of the intervention, physicians and midwives were trained in emergency uterine evacuation using MVA, and after the intervention 97 percent of patients were treated with MVA, usually by midwives. This eliminated the need to resort to digital curage in the absence of a specialist, and only 1 percent of patients continued to be treated with that method, in contrast to 40 percent before the intervention. The remaining 2 percent of post-intervention patients were treated with sharp curettage (Ministry of Health, Burkina Faso, 1998). See Appendix I, Ministry of Health, Burkina Faso, 1998, for a description of the intervention.	III

#### **IV.B.6. WHO CAN PROVIDE PAC SERVICES**

Summary of Evidence	Supporting Research	Gray Type
Use of dedicated FP nurse/ counselors as compared to FP referrals for contraceptives can increase immediate contraceptive acceptance for PAC patients.	A study conducted during 1999 of the introduction of MVA to treat incomplete abortion at a regional hospital in El Salvador found that immediate contraceptive acceptance was increased from 19 percent to 62 percent with the use of a dedicated family planning nurse/counselor as compared to the family planning referrals without counseling. Hospital cost, length of stay, complication rates, and family planning acceptance following PAC was compared in a prospective, randomized controlled study of 154 women assigned to either sharp curettage or MVA (Koontz et al., 2003).	III
Strong evidence: One study.	et al., 2005).	



#### **IV.B.7. MAINTAINING COMPETENCIES OF PAC PROVIDERS**

Summary of Evidence	Supporting Research	Gray Type
Maintaining competencies of PAC providers.	No PAC-related studies found.	

Women giving birth as well as PAC patients around the world in the poorest countries continue to lack access to safe emergency obstetric care (*Please see "What Works: A Policy and Program Guide to the Evidence on Family Planning, Safe Motherhood, and STI/HIV/AIDS Interventions; Module 1: Safe Motherhood Module" by Gay et al., 2003).* A study in three referral hospitals in Dakar, Senegal, found that 62 percent of patients went to at least two health facilities before being treated for incomplete abortion (Centre de Formation et de Recherché en Santé de la Reproduction and Clinique Gynecologique et Obstetricale CHU A. le Dantec, 1998). Access to PAC was hampered by cost and physical access. Another study of PAC patients in Senegal noted, "In abortion complication cases, health posts should stabilize and evacuate PAC clients to the nearest district-level center or regional hospital for care. In reality, many PAC clients do not have the means or access to health centers; thus, untrained health post staff, mostly traditional birth attendants, often found themselves providing emergency treatment services" (Dabash, 2003: 5).

National legislative and local hospital policy changes, including developing and disseminating protocols and service delivery guidelines for PAC, restructuring services, and policies to support the restructure of services are needed to institutionalize PAC in hospital settings or provide PAC as an outpatient procedure. Increasing the availability of emergency transport available for PAC in addition to emergency obstetric care (EmOC) can increase women's access to needed services. A study in Ethiopia of 120 health facilities found that only 13 percent of these health centers were able to respond with emergency transport to assist a woman needing PAC (Gebreselassie and Fetters, 2002). In fact, no efforts have been made to "define or measure unmet need for PAC," as well as no systematic inquiry analyzing the barriers inhibiting access to PAC services such as geographical, cultural, and social factors (Cobb et al., 2001: 30). Almost nothing is known about PAC programs that have been able to overcome some of these barriers (Cobb et al., 2001: 30). In addition, the illegality of abortion in many countries in the world, the stigma attached to abortion, and the penalties attached to both the women who seek abortions and the providers who try to help these women are further barriers to access, even though postabortion care is officially sanctioned.





Summary of Evidence	Supporting Research	Gray Type
Providing family planning counseling and services in the same place as emergency treatment can increase patients' knowledge and intent to use family planning. ✓ Strong evidence: One study.	A study in Burkina Faso found that providing family planning counseling and services in the same place as PAC emergency treatment increased patients' knowledge and intent to use family planning. Before the intervention, women treated for abortion complications were referred to an off-site family planning clinic for services. Only 30 percent of women received counseling about family planning, and although 64 percent said they intended to use contraception, only 57 percent received a method. As a result of the integrated family planning counseling and services introduced in the intervention, 94 percent of women reported being counseled on family planning. Eighty-two percent of women said they intended to practice family planning, and 83 percent left the hospital with a method (Ministry of Health, Burkina Faso, 1998). See Appendix I, Ministry of Health, Burkina Faso, 1998, for a description of the intervention.	III
Health policy changes, including developing and disseminating protocols and service delivery guidelines for PAC and reorganization of services, are needed to institutionalize PAC in hospital settings or provide PAC as an outpatient procedure.	A study of 339 postabortion patients in Oaxaca, Mexico, (year not specified) showed that revising hospital policies and protocols can improve PAC services. The study found that introducing MVA resulted in reducing the hospital stay from. 20.7 to 17.4 hours. Following hospital protocol, no attempt was made to determine whether or not the patient's abortion was spontaneous or induced in nature. Many of the changes made were also supported by hospital-level policy changes. Guidelines were modified to stipulate using MVA with local anesthesia if a patient's uterus was determined to be smaller than 12 cm. Finally all operating rooms became functional 24 hours a day to reduce waiting times (Langer et al., 2002; Langer et al., 1999; Brambila et al., 1999). See Appendix I, Langer et al., for a description of the intervention.	IV
☑ Strong evidence: Eleven studies.	A study conducted during 1999 of the introduction of MVA to treat incomplete abortion at a regional hospital in El Salvador found that compared to sharp curettage, use of MVA and associated changes in protocol led to a significant reduction of 28 percent in time spent by the PAC patient in the hospital (Koontz et al., 2003). See Appendix I, Koontz et al., 2003 for a description of the intervention.	IV

Summary of Evidence	Supporting Research	Gray Type
Health policy changes, including developing and disseminating protocols and service delivery guidelines for PAC and reorganization of services, are needed to institutionalize PAC in hospital settings or provide PAC as an outpatient procedure. ✓ Strong evidence: Eleven studies.	A 1999–2001 intervention study conducted in Bolivia's three largest maternity hospitals found that reorganizing PAC services can reduce length of hospital time for PAC patients. The study found that the average length of hospitalization for women treated with MVA was much lower than with sharp curettage. The intervention consisted of reorganization of services to ambulatory care, PAC training on information and counseling (health status, uterine evacuation procedure, postabortion contraception, and care after leaving the hospital), and appropriate technologies and technical performance, and refresher training and supportive supervision (Billings et al., 2003b). See Appendix I, Billings et al., 2003b, for a description of the intervention.	IV
	A pilot program to improve the provision of family planning to PAC patients to avoid repeat abortions in a single public maternity hospital in Turkey has been successfully expanded into 10 public facilities throughout Turkey and then into 12 private sector and two public sector hospitals. Early evidence that "women were relying on repeat abortion to control their fertility made it clear that the Turkish family planning program, despite its successes, was unable to meet the contraceptive needs of its clients" and, therefore, became the impetus for providing family planning to PAC patients (Senlet et al., 2001: 91). The Turkish Ministry of Health initiated a pilot postabortion family planning program from 1991–1993 to link these services in a selected facility where large numbers of abortions were provided. The Turkish Ministry of Health set up structural links between abortion and family planning services; overcame staff resistance to providing PAC family planning services by conducting both a study on the safety of IUD insertions following PAC (which showed no increased risk of infection or expulsion) and conducting a series of seminars to reeducate staff on contraceptive technology; and provided accurate information to PAC patients about family planning. For example, "when women first came to the clinic to verify their pregnancy and to request an abortion, they attended a group session in which each contraceptive method was explained in detail" (Senlet et al., 2001: 91). At their appointment for	III
	an abortion, women met with a (continued)	





Summary of Evidence	Supporting Research	Gray Type
Health policy changes, including developing and disseminating protocols and service delivery guidelines for PAC and reorganization of services, are needed to institutionalize PAC in hospital settings or provide PAC as an outpatient procedure. ☑ Strong evidence: Eleven studies.	(continued) family planning counselor for a private counseling session. Contraceptive method availability was improved. As a result of the pilot program, use of a modern contraceptive among abortion clients increased from 65 percent in 1991 to 97 percent in 1992. The pilot project resulted in more effective contraceptive use, which led to the "reduction of repeat abortions." From 1992–1998, the same strategy from the pilot project was expanded to 10 more large public hospitals. These interventions then served as prototypes in the curriculum of Turkey's MCH program, "Postabortion Family Planning," which included modules from EngenderHealth. A questionnaire sent in 1999 to these 10 sites found postabortion family planning acceptance rates of over 90 percent. "Perhaps this initiative's most striking aspect is its ongoing self-sustainability. External assistance to all imitative hospitals ended several years before 1998 and in most cases involved technical assistance for a few months only" (Senlet et al., 2001: 92). In 1998 in the 14 additional hospitals, only 37 percent of PAC patients accepted a method of family planning; by 2001, this was increased to 72 percent. Abortion has been legal in Turkey since 1983 (Senlet et al., 2001).	III
	A study from 1977–1978 in Senegal that trained providers to use MVA to treat patients for abortion complications found that costs for treatment with MVA were lower than for sharp curettage, although still very expensive for women. Prior to the intervention, PAC services cost an average of 35,800 CFA (US\$70) in three hospitals. After the intervention approximately half of patients were treated with MVA, and services cost an average of 26,700 CFA (US\$50). However, the post-intervention cost for patients treated with MVA only was 23,800 (US\$46) CFA, as opposed to 33,400 CFA (US\$64) for those treated with sharp curettage, due to other improvements in service efficiency. An important element in the cost difference is the level of service provider treating the patient; the switch to MVA allowed midwives to begin to provide the majority of emergency services to PAC patients (Centre de Formation et de Recherche en Santé de la Reproduction and Clinique Gynécologique et Obstétricale CHU A. le Dantec, 1998). See Appendix I, Centre de Formation et de Recherche, 1998, Senegal, for a description of the intervention.	III

Summary of Evidence	Supporting Research	Gray Type
Health policy changes, ncluding developing and lisseminating protocols and ervice delivery guidelines for PAC and reorganization of services, are needed to institutionalize PAC in hospital ettings or provide PAC as an outpatient procedure.	A 1996–98 intervention study in a referral hospital in Lima, Peru, tested a model where all PAC services were provided in an obstetrics and gynecology emergency room on an outpatient basis. Doctors were trained in MVA and improved clinical practices, counseling on medical care and family planning, and provision of contraceptive methods. The original study utilized a pre-post intervention design with no control group. Since the conclusion of this study, the hospital received no outside technical or financial assistance for postabortion care, and all PAC services remained under the full responsibility of the Department of Obstetrics-Gynecology and its emergency room services, and the hospital itself. A follow-up assessment was conducted in 2000–2002 to assess whether the PAC intervention was sustainable without outside assistance, and researchers used the same outcome measures that had been used to evaluate the intervention in the first study. Use of MVA for uterine evacuation increased from 0 percent to 90 percent after the intervention in 1997 and continued to increase even after external funding and technical assistance ended—to an average of 98 percent in 1999 and 2000 (Benson and Huapaya, 2002). See Appendix I, Benson and Huapaya, 2002, for a description of the intervention.	III
	A 1994–1995 PAC operations research study in Egypt found substandard quality care provided to PAC patients and the feasibility of rapidly improving outcomes related both to providers, such as technical knowledge and counseling skills, and outcomes related to patients, such as the return to fertility and the need for contraception. Between 1996 and 1997, services were expanded from the two sites of the pilot study into 10 district, general university, and teaching hospitals. Based on studies in these 10 hospitals, the Ministry of Health and Population's essential obstetric care protocols are based on the results of PAC research and specify MVA as the procedure of choice in treatment of incomplete abortion at less than 20 weeks gestation, the use of pain medication, and the importance of counseling (Huntington and Nawar, 2003).	V





Summary of Evidence	Supporting Research	Gray Type
Health policy changes, including developing and disseminating protocols and service delivery guidelines for PAC and reorganization of services, are needed to institutionalize PAC in hospital settings or provide PAC as an outpatient procedure. ☑ Strong evidence: Eleven studies.	A 1999–2001 intervention study conducted in Bolivia's three largest maternity hospitals found that the average length of hospitalization for women treated with MVA was much lower than with <u>sharp curettage</u> . Pre-intervention women treated with <u>sharp curettage</u> were hospitalized for an average of 34 hours in La Paz, 34.3 hours in Santa Cruz, and 38.6 hours in Sucre. Post-intervention, the average length of stay was 10.7 hours with MVA and 49.1 hours with <u>sharp curettage</u> in La Paz; 4.4 hours for MVA and 26.2 hours for <u>sharp curettage</u> in Santa Cruz; and 19.9 hours for MVA and 45.9 hours for <u>sharp curettage</u> in Sucre. Most of the difference came from the shorter recovery time required for MVA with local anesthesia compared to <u>sharp curettage</u> with general anesthesia. However, treatment time was marginally shorter with MVA, and pre-procedure waiting time for women treated with MVA dropped by about 2 hours in all three hospitals, to 1.7–3.5 hours post-intervention, while it remained constant or increased for women treated with <u>sharp curettage</u> who waited between 3.4 (Santa Cruz) and 22.4 hours (Sucre). The intervention consisted of re-organization of services to ambulatory care; PAC training on information and counseling (health status, uterine evacuation procedure, postabortion contraception, and care after leaving the hospital), and appropriate technologies and technical performance; and refresher training and supportive supervision. Data were collected through 935 client exit interviews, 269 three-month follow-up interviews with clients, 439 client observations, review of 768 clinical records, 47 provider interviews, 204 provider questionnaires, 138 male partner interviews, and 424 client flow observations to assess costs (Billings et al., 2003b).	Π
	A 1991 rapid assessment in Kenya and Mexico found that MVA used fewer resources and required less hospital time than sharp curettage. The study identified and analyzed the differences in the costs of MVA and sharp curettage used in the treatment of incomplete first-trimester abortions. Data were collected between January and June 1991 in four hospitals in Kenya and five hospitals in Mexico using direct observation to document actual time and resources from the beginning to the end of patients' hospital stays. All women included in the study had incomplete abortion with a uterine size related to less than 13 (continued)	III

Summary of Evidence	Supporting Research	Gray Type
Health policy changes, including developing and disseminating protocols and service delivery guidelines for PAC and reorganization of services, are needed to institutionalize PAC in hospital settings or provide PAC as an outpatient procedure.	(continued) weeks gestation. The protocol required that MVA not be performed for pregnancies of more than 12 weeks. The study design planned for at least 15 women from each hospital to be observed, but because of small caseloads this was not possible in all of the hospitals. Cost components studied were staff, drugs, and hospitalization. Cost at the four Kenyan hospitals ranged from \$2.94 to \$5.24 for MVA (a 23 percent difference) and \$3.99 to \$15.25 for sharp curettage (a 66 percent difference). In the Mexican hospital that performed both MVA and sharp curettage, the average cost for an MVA client was \$65.73—17 percent less than the hospital with the lowest cost for sharp curettage (\$79.23) and 72 percent less than the hospital with the lighest cost for sharp curettage (\$235.90). Hospital costs accounted for the largest proportion of total cost, yet even when hospitalization costs were excluded, the cost of MVA was less than the cost for sharp curettage. Personnel costs were the second greatest contributor to average cost (Johnson et al., 1993).	Ш
studies.	A study in Oaxaca, Mexico, (year not specified) found that use of MVA decreased the average cost by almost 32 percent. Using sharp curettage as the procedure of choice cost \$264.47 per patient as compared to \$180.22 using MVA. These costs include the intervention costs (e.g., project costs), supplies (e.g., syringes), training time, supervision, and monitoring. "The results of this study show that the improved service-delivery model achieved significant cost savings and simultaneously improved quality of care for patients undergoing postabortion treatment" (Brambila et al., 1999: 121). In terms of the procedure used for uterine evacuation, MVA was being used 0 percent of the time at baseline and increased to 78.1 percent at post-intervention. Sharp curettage at baseline was the most utilized technique at 89.6 percent and decreased to 20.8 percent; and a combination of Sharp curettage and MVA was 10.4 percent at baseline and decreased to 1.1 percent. Length of hospital stay was reduced by 36 percent. In terms of which procedure to use, guidelines were modified to stipulate the standard protocol of MVA usage with a local anesthesia if a patient's uterus was determined to be smaller than 12 cm. Finally, all operating rooms became functional 24 hours a day to reduce waiting times (Langer et al., 2002; Langer et al., 1999). See Appendix I, Langer et al., for a description of the intervention.	III





Summary of Evidence	Supporting Research	Gray Type
Health policy changes, including developing and disseminating protocols and service delivery guidelines for PAC and reorganization of services, are needed to institutionalize PAC in hospital settings or provide PAC as an outpatient procedure.	A study conducted during 1999 of the introduction of MVA to treat incomplete abortion at a regional hospital in El Salvador found that compared to sharp curettage, use of MVA and associated changes in protocol led to a significant cost savings of 13 percent (Koontz et al., 2003). See Appendix I, Koontz et al., for a description of the intervention. (Koontz et al., 2003).	III
☑ Strong evidence: Eleven studies.		

Summary of Evidence	Supporting Research	Gray Type
Increasing linkages and referrals between clinic-based health practitioners and community-based providers may increase more timely access to PAC.	Postabortion care in Egypt was successfully expanded from district hospitals to other district hospitals, three rural hospitals, and five primary care units to provide care to 495 PAC patients who otherwise may not have received PAC care. Twenty-eight physicians and 30 nurses were trained in MVA. PAC patients attending rural health units were diagnosed, stabilized by first aid measures, and referred to a district hospital (Megied and Hassan, 2003).	IV
☑ Enough evidence for action: Two studies.	A qualitative study in Kenya using 74 in-depth interviews with female adolescents, women having abortions, providers, and leaders, in addition to 32 focus group discussions with married men and women, adolescent males and females, community health workers, CSWs, teachers, elderly men and women, and single men and women found that community-based providers believe that increasing linkages and referrals between clinic-based health practitioners and community-based providers may increase more timely access to PAC (Rogo et al., 1999).	IV
Providing contraceptive technology updates and counseling workshops for providers at the primary level can increase postabortion family planning counseling and method provision prior to discharge.	A 2001–2003 pre/post intervention operations research study to improve access to PAC in rural regions in Senegal that included a contraceptive technology update and counseling workshop for providers as part of the intervention found that patients at primary care facilities were almost twice as likely to have received family planning counseling after the intervention as before. At baseline, only 38 percent of patients interviewed at health centers received any family planning counseling before discharge, compared to 70 percent after the intervention. Twenty percent of patients left the health center with a method, and a substantial proportion (number not given) said they intended to practice family planning after discussing it with their partner. Although this is a much lower proportion than have left with a family planning method in similar studies in urban hospitals in other countries, it is not much lower than the 26 percent found in a 1998 OR study in three referral hospitals in Dakar (CEFOREP, 1998). It is also worth noting that 72 percent of women said their pregnancy had been wanted, suggesting that a large number of them had experienced a miscarriage and might desire a subsequent pregnancy soon afterward (Dabash,	III
	2003). See Appendix I, Dabash, 2003, for a description of the intervention.	

12

What Works: Postabortion Care



Summary of Evidence	Supporting Research	Gray Type
Increased distance to health facility is associated with decreased access to emergency obstetric care, increased hemorrhaging and length of hospital stay, and increased maternal and neonatal mortality rates. ☑ Enough evidence for action: Two studies.	A study conducted in 1994 in Egypt reporting results from a descriptive study of women who presented at public sector hospitals found that 56 percent of women reported having traveled more than five kilometers to the hospital where they received medical treatment for incomplete abortion. Patients with severe hemorrhaging were approximately 1.3 times more likely to have traveled more than five kilometers compared to patients who were admitted with mild to moderate hemorrhage. Patients with extreme blood loss upon admission had a significantly longer hospital stay of 16.6 hours as compared to patients with mild to moderate hemorrhaging with a hospital stay of 14.7 hours. A total of 568 hospitals were included in the sample frame, including 95 percent of government hospitals and approximately 60 percent of all hospital beds. Of those, approximately 15 percent of hospitals were randomly selected (for a total of 86 hospitals). (Huntington et al., 1998).	III
	A 1999–2000 index designed to measure the effort levels of national programs in 49 countries to reduce maternal and neonatal mortality (MNPI) found that the sharpest distinctions in maternal mortality rates between high- (MMR 750+), medium- (MMR 250-749), and low- (MMR < 250) countries were observed in areas characterized by large gaps between rural and urban access to emergency obstetric services and treatment. Emergency treatment included care for postpartum hemorrhage, obstructed labor, and abortion complications. On a scale from 0 to 100, countries with low MMRs scored an average of 30 points higher than did countries with high MMRs, largely as a result of the latter having less access to safe abortion and emergency treatment for complications. District hospitals rated better at service delivery than did health centers and neonates typically received better care than did women presenting for antenatal care or delivery (Ross et al., 2001).	III

#### IV.D. ENSURING QUALITY CARE, INCLUDING USE OF ON-SITE QUALITY IMPROVEMENT TECHNIQUES

Summary of Evidence	Supporting Research	Gray Type
Improving the quality of care of PAC, whether MVA or sharp curettage is used, reduces the average length of stay in hospital facilities. ☑ Strong evidence: One study. Introducing MVA can lead to decreased hospital stays among PAC patients.	A study in 1997–1998 in six hospitals of the Mexican Institute of Social Security (IMSS) found that by improving the quality of care for PAC clients, regardless of whether MVA or <u>sharp</u> <u>curettage</u> was used, the average hospital stay was reduced from between 12 to 30 hours to eight hours following the intervention. The study authors attribute improvements in quality of care to provider training concerning providing empathy and support for the woman and identification of her emotional state and specific needs, such as information about possible post-procedure complications and follow-up and care at home, counseling to identify women's reproductive health intentions, information about return to fertility, contraceptive methods provided according to the needs and desires of the woman, as well as use of MVA. The study included 803 women treated for abortion complications (Billings et al., 2003a). See Appendix I, Billings et al., 2003a, for a description of the intervention.	III
	A 2001–2003 operations research study in Senegal found that introducing MVA in health centers and health posts led to a reduction of mean hospital stay from 1.3 days (31 hours) to 0.4 days (10 hours). Before the intervention, digital curage was the primary method used for uterine evacuation, either with general anesthesia or often no pain medication, and 77 percent of women remained at the health facility overnight. After the intervention, 57 percent of women were treated with MVA, and only 40 percent of women remained overnight. Among patients treated with digital curage, 50 percent were kept overnight, while only 36 percent of MVA patients were. Despite overall shorter hospital stays, patients often had a longer pre-treatment wait for MVA than for curage: 14 of the 51 women interviewed at the end of the study waited more than two hours for treatment after being admitted, and almost all of these women were treated with MVA. However, the delay does not necessarily indicate lower quality treatment; the main reasons for the delay were that a trained provider and medication were not always immediately available, while digital curage was sometimes performed by untrained providers and without adequate pain medication or infection	Ш
	prevention (Dabash, 2003). See Appendix I, Dabash, 2003, for a description of the intervention.	



### IV.D. ENSURING QUALITY CARE, INCLUDING USE OF ON-SITE QUALITY IM-PROVEMENT TECHNIQUES

Summary of Evidence	Supporting Research	Gray Type
Summary of Evidence         Providing counseling on post procedure complications, follow-up care at home, return to fertility, contra-ceptive methods, and providing empathy and support improves the quality of care of PAC.         ☑ Strong evidence: One study.	Supporting Research A study in 1997–1998 in six hospitals of the Mexican Institute of Social Security (IMSS) found that by improving the quality of care for PAC clients, regardless of whether MVA or <u>sharp curettage</u> was used, women reported that they received important information on their postabortion care. The intervention consisted of provider training to provide empathy and support for the woman and identification of her emotional state and specific needs, information about possible post procedure complications, follow-up and care at home, counseling to identify women's reproductive health intentions, information about return to fertility, and contraceptive methods provided according to the needs and desires of the woman, as well as use of MVA. Eighty-seven percent of the 279 women who received <u>sharp curettage</u> and 83.7 percent of the 251 women who received MVA at the intervention sites reported that they received information on the finding of specific problems by their physician prior to uterine evacuation, compared to 58.7 percent of the 282 women at the control sites. Between 2.2 percent to 9.6 percent of women who received PAC at control sites reported that they received information on various different signs of post-uterine complications, such as general health problems, intense pain, bleeding for more than two weeks, fever, chills, and foul-smelling vaginal discharge—compared to between 22.8 percent and 41.3 percent of women who received PAC from institutions at intervention sites. While 26 percent of women who received PAC at control sites received information on where to seek help in case of complications, 32 percent of those receiving MVA PAC in institutions and 42 percent of those receiving <u>sharp curettage</u> PAC at intervention sites received such information. While only	Gray Type III
	10.8 percent of women who received PAC at control sites received information on when they could resume sexual relations, 39.9 percent of those receiving <u>sharp curettage</u> and 20.7 percent of those receiving MVA in institutions at intervention sites received such information. Among women who felt that their concerns had been identified, 96 percent of those treated for PAC where providers were trained in PAC perceived the hospital staff helped them to address their concerns, as compared with 80 percent of women treated for PAC in hospitals where providers did not receive PAC training (Billings et al., 2003a). See Billings et al., 2003a, for a description of the intervention.	

### IV.D. ENSURING QUALITY CARE, INCLUDING USE OF ON-SITE QUALITY IM-PROVEMENT TECHNIQUES

Summary of Evidence	Supporting Research	Gray Type
Provider attitudes and behavior toward PAC patients can lead to a delay in seeking care. ☑ Enough evidence for action; more research needed: One study.	A study in Zimbabwe using theater to generate discussions on abortion and PAC attracted 2,500 people to the performances. Post-performance discussions with 200 people and key informant interviews with 61 informants found that "nurses' attitudes and behavior toward postabortion care clients have an impact on client decisions to seek care. In particular, community members are concerned about gossip, harsh treatment, and unfriendliness to youth. On the other hand, nurses are often frustrated by the client's failure to explain her reason for her condition and her delay in seeking treatment until complications are severe" (Settergren et al., 1999: x). "Fear of being reported to the police was the most commonly cited reason for not seeking prompt medical attention for abortion complications" (Settergren et al., 1999: 18).	V





#### IV.E. PAC FOR WOMEN IN COUNTRIES WHERE ABORTION IS LEGAL AND AVAILABLE

Abortion is legal and available in some countries such as Russia and most countries in the former Soviet Union and India. Studies have shown that even in settings where abortion is legal, women still experience complications of incomplete abortion that require medical care. Furthermore, postabortion counseling offers an opportunity to provide family planning information and services to prevent subsequent abortions.

Summary of Evidence	Supporting Research	Gray Type
PAC services are needed even where abortion is legal. ☑ Strong evidence: Two studies and one literature review.	According to unpublished Ministry of Health data from Russia, in 2001, abortions accounted for 27.7 percent of all maternal deaths in Russia, in contrast to an estimated 13 percent worldwide. Abortion is legal and available in Russia. A 2000–2003 operations research study to increase postabortion family planning in Perm, Russia, found that 17.2 percent of women having a legal, facility-based abortion experienced some type of complication, for which 46.2 percent (7.2 percent of all women) were hospitalized. Ten percent of the total sample reported incurring some cost associated with a complication (Savelieva et al., 2003). See Appendix I, Savelieva et al., 2003, for a description of the intervention.	Π
	A review of the available literature on adolescent sexual behavior in India found that "while abortion has been legal in India since 1972, limited availability and poor quality have kept safe abortion beyond the reach of most poor women" (UNICEF, 1991 cited in Jejeebhoy, 1996: 17). "Only about 538,000 of the estimated 6.7 million pregnancy terminations occurring annually are performed by registered providers in licensed facilities" (Ministry of Health and Family Welfare, Government of India, 1999 cited in Johnston et al., 2003: 182). A 1999 community assessment in four villages in rural Uttar Pradesh using non-random qualitative data collection techniques found that postabortion care services are needed even where abortion is legal. During the year in which the study took place (April 1999 - March 2000), between 8 percent and 10 percent of patients admitted to Kasganj Christian Hospital (5-8 patients per month) were admitted with abortion complications. Data collection revealed that "while there are clear linkages between induced abortions conducted by untrained providers and the severity of complications, postabortion complications were also experienced by some women who went to referral-level providers" (Johnston et al., 2001: 25). In (continued)	III
# IV.E. PAC FOR WOMEN IN COUNTRIES WHERE ABORTION IS LEGAL AND AVAILABLE

Summary of Evidence	Supporting Research	Gray Type
<ul> <li>PAC services are needed even where abortion is legal.</li> <li>☑ Strong evidence: Two studies and one literature review.</li> </ul>	(continued) Uttar Pradesh approximately 25 percent of Primary Health Centers and 59 percent of Community Health Centers provide abortion services. The assessment was facilitated by research teams at Kasganj Christian Hospital and Kamala Nehru Memorial Hospital from August through November 1999 and included 54 key informants, 18 community mapping sessions, 24 focus group discussions, and 38 provider interviews (Johnston et al, 2001). Untrained providers do not provide contraceptive method choices following abortion nor do they counsel patients for how long they should observe sexual abstinence. "An illiterate mother of four girls and two boys said that she underwent an abortion because she and her husband could not afford to have more children. To avoid future pregnancies, she and her husband practice sexual abstinence, the only contraceptive method of which she is aware" (Johnston et al., 2003: 185). Untrained providers (such as dais) also were unprepared to help women address abusive situations when women sought abortions resulting from a pregnancy due to rape (Johnston et al., 2003).	III
	Despite the liberalization of the abortion law in Ghana, "many abortions continue to be induced illegally under unhygienic conditions by operators who are either untrained or inadequately trained to do them" (Lassey, 1995: 775). "In a study of 212 patients admitted for PAC, 58 percent of the abortions were performed outside legally designated health institutions "(Lassey, 1995: 776).	III







## IV.F. INTEGRATION OF PAC WITH EMERGENCY OBSTETRIC CARE SERVICES AT ALL LEVELS OF THE HEALTH SYSTEM AND IN SERVICE DELIVERY

Summary of Evidence	Supporting Research	Gray Type
Integration of PAC with emergency obstetric care services at all levels of the health system and in service delivery.	No PAC-specific studies found.	

Most PAC interventions have been small in scale, raising the question of the feasibility of scaling up and sustaining interventions that are no longer part of research projects. However, because PAC, through policy changes and reorganization of service, reduces time and costs for health facilities and improves client health outcomes, it is potentially easier to introduce and sustain than other reproductive health interventions that may not have such clear cut cost-benefit advantages. An assessment of PAC operations research studies in Burkina Faso and Senegal noted that on conclusion of the formal research projects, the study sites tended to make or maintain the changes necessary to continue the new PAC model independently. As one maternity chief said, "I saw that this system was much more effective and cost-effective. It is my job to make the maternity unit run better, so I reorganized the services. If I waited for someone from the Ministry to tell me to change, I could be waiting forever" (Marin et al., 2003: 8).

Prior to the OR studies, neither country had any explicit service protocols or policy regarding services for women presenting with complications from an incomplete abortion. One of the key outcomes from these studies was that the ministries in both countries took ownership of the model and incorporated PAC into their larger safe motherhood strategy. The Burkinabé Ministry of Health collaborated with CRESAR to develop national norms and standards regarding PAC, and the Senegalese Ministry has developed national service delivery protocols, assisted by CEFOREP and JHPIEGO. Both countries now include PAC supplies and commodities in their annual budgets and are seeking a sustainable source for MVA equipment, most of which has been donated until now (Marin et al., 2003).



Summary of Evidence	Supporting Research	Gray Type
Research on PAC can be used for policymakers to support expanding PAC programs and nation-wide PAC protocols.         ☑ Needs more research: One study and one literature review.	A 1994–1995 operations research study in Egypt on PAC revealed substandard quality of care provided to PAC patients and the feasibility of rapidly improving outcomes related both to providers, such as technical knowledge and counseling skills, and outcomes related to patients, such as the return to fertility and the need for contraception. Small-scale expansion of services from the two sites of the pilot study into 10 district, general university and teaching hospitals was achieved from 1996–1997. Studies in these 10 hospitals increased evidence for the need to expand PAC programs. Based on the studies in these 10 hospitals, the Ministry of Health and Population's essential obstetric care protocols are based on the results of PAC research and specify MVA as the procedure of choice in treatment of incomplete abortion at less than 20 weeks gestation; the use of pain medication; and the importance of counseling (Huntington and Nawar, 2003).	V
<ul> <li>Integrating family planning counseling and services into safe motherhood programs will assist in achieving sustainability of PAC.</li> <li>☑ Needs more research: One study and one literature review.</li> </ul>	In Egypt, PAC passed to the safe motherhood program. However, safe motherhood programs need additional expertise in family planning to meet the needs of PAC patients. "PACwill be realized only as holistic programming is achieved for women's reproductive health services" (Huntington and Nawar, 2003: 124).	V

Summary of Evidence	Supporting Research	Gray Type
PAC programs can be scaled up. ☑ Strong evidence: Three studies	From 1994–1997, a total of 1,325 health care professionals working in 23 percent of the Mexican Institute of Social Security (IMSS) hospitals nationwide were trained in the use of MVA and other aspects of postabortion care (Fuentes Velasquez et al., 2001 cited in Billings et al., 2003). Throughout Mexico, approximately 120,000 women received abortion-related care every year in public sector facilities (INEGI, 2001 cited in Billings et al., 2003), of which in 1997 slightly more than 56,000 of these women were treated at IMSS facilities (IMSS, 1997 cited in Billings et al., 2003).	III
	A pilot program to improve the provision of family planning to PAC patients to avoid repeat abortions in a single public maternity hospital in Turkey has been successfully expanded into 10 public facilities throughout Turkey and then into 12 private sector and two public sector hospitals (Senlet et al., 2001).	III
	A 2001–2003 operations research study in Senegal found that midwives as well as physicians at district health centers can be trained to provide MVA and other PAC services in rural areas, referring complicated cases to district hospitals. Previous OR studies in Senegal have successfully introduced MVA as part of a comprehensive PAC program in three tertiary-level hospitals in Dakar (CEFOREP, 1998). This OR study continued the progression in primary care facilities, demonstrating that even in settings with the most limited resources and trained personnel, providers can use MVA to safely treat women arriving with incomplete abortions (Dabash, 2003). See Appendix I, Dabash, 2003, Senegal for a description of the intervention.	III





Summary of Evidence	Supporting Research	Gray Type
PAC services including MVA can be sustained without outside assistance.	A 1996–98 intervention study in a referral hospital in Lima, Peru, tested a model where all PAC services were provided in an obstetrics and gynecology emergency room on an outpatient basis. Doctors were trained in MVA and improved clinical practices, counseling on medical care and family planning, and provision of contraceptive methods. The original study utilized a pre/post intervention design with no control group. Since the conclusion of this study, the hospital received no outside technical or financial assistance for postabortion care, and all PAC services remained under the full responsibility of the Department of Obstetrics-Gynecology and its emergency room services, and the hospital itself. A follow-up assessment was conducted in 2000–2002 to assess whether the PAC intervention was sustainable without outside assistance, and researchers used the same outcome measures that had been used to evaluate the intervention in the first study. Use of MVA for uterine evacuation increased from 0 percent to 90 percent after the intervention 1997 and continued to increase even after external funding and technical assistance ended—to an average of 98 percent in 1999 and 2000 (Benson and Huapaya, 2002). See Appendix I, Benson and Huapaya, 2002, for a description of the intervention.	III

# IV.H. NON-TRAINING CONTRIBUTIONS TO ESTABLISHING AND SUPPORTING PAC

Policies and clinical protocols are needed to reorganize services to implement PAC models and improve the provision of emergency treatment of abortion complications, procedures for maintaining the confidentiality of abortion patients, assurance that the cost of treatment services is affordable for women seeking PAC, provision of information to the general public about where PAC is available, and education about the importance of seeking care promptly. Providers need information on the provisions of existing abortion laws, and public education is needed about which services are available within the provision of existing laws. Policymakers need to become aware of the impact of unsafe abortion and to recognize the benefits of timely PAC (Kinoti et al., 1995 and Benson et al., 1996). These recommendations made in 1995 were based on a review commissioned by the Conference of Health Ministers for East, Central, and Southern Africa (held in 1993) of 99 published and 146 studies in the grey literature.





# SUMMARY LIST OF EVIDENCE



# I. EMERGENCY TREATMENT

#### Strong Evidence

MVA, VA and Sharp Curettage: Effectiveness and safety of MVA and sharp curettage

- MVA is as effective as sharp curettage for treatment of first trimester incomplete abortion (pg 30)
- Women undergoing MVA and VA procedures had significantly decreased bleeding seven days post evacuation than women undergoing sharp curettage (pg. 31)
- MVA has low complication rates (pg. 32)
- The use of systemic analgesia with sharp curettage for incomplete abortions with dilated cervix up to 14 weeks is safe, effective, has a smaller chance of requiring a blood transfusion, and does not require the use of the operating theater (pg. 33)
- The use of general anesthesia with suction curettage is associated with increased risks of blood loss, cervical injury, uterine perforation, and subsequent abdominal hemorrhage (pg. 33)
- Using MVA for PAC instead of sharp curettage can reduce the length of hospital stays (pg. 34)

#### Cost comparisons of MVA and sharp curettage

• Using MVA for PAC instead of sharp curettage along with associated changes in protocols and an improved service delivery model can significantly reduce costs of care in most cases. (pg. 49)

#### Misoprostol for PAC: Effectiveness and Safety

- Use of misoprostol to evacuate the uterus after early pregnancy failure can completely evacuate the uterus reducing the need for surgical evacuation (pg. 39)
- Medical management of early pregnancy failure using misoprostol is more effective than expectant management in reducing the need for surgical evacuation (pg. 50)
- Misoprostol given either orally or vaginally for treatment of early pregnancy failure can completely evacuate the uterus 50 to 96 percent of the time reducing the need for surgical intervention (pg. 52)
- Misoprostol can be administered orally, sublingually, or vaginally with good results. Optimal dose/route combinations have not been firmly established. (pg. 56)
- Side effects of misoprostol include chills, fever, nausea, vomiting, diarrhea and headache, but are generally mild and self-limiting (pg. 58)
- Women experiencing first trimester pregnancy failure treated with misoprostol experience slightly more blood loss compared to women treated with surgical evacuation, but the difference is not clinically significant (pg. 59)

#### Pain Management: Effectiveness and safety

- Women require pain management for emergency treatment with sharp curettage and VA (pg. 64)
- Use of paracervical block using 1% lidocaine showed marked reduction in pain for patients undergoing MVA treatment (pg. 65)

• There is no significant difference in severity of pain for MVA PAC patients receiving paracervical block with 1% lidocaine compared to those receiving no anesthesia. Neither the paracervical block technique nor psychological support alone is sufficient in pain management for PAC patients undergoing MVA (pg. 66)

#### Enough Evidence for Action-Needs More Research

#### Privacy and confidentiality in history and physical assessment

• Women want privacy and confidentiality during the taking of their history and physical assessment (pg. 27)

#### **Needs More Research**

#### MVA, VA and Sharp Curettage: Cost comparisons of pain management techniques

- Switching to MVA from sharp curettage can cause an initial increase in cost due to improved quality of care resulting in increased cost for supplies and medications (pg. 45)
- MVA can be performed safely in a primary care setting with a referral system available for those requiring higher level care (pg. 45)

#### Footpump Suction Vacuum Aspiration: Effectiveness and safety

• MVA and foot pump suction evacuation (FSE) are equally effective for uterine evacuation following first or second trimester incomplete abortion (pg. 46)

#### Misoprostol for PAC: Effectiveness and safety

• Use of misoprostol to evacuate the uterus after early pregnancy failure can increase patient satisfaction (pg. 58)

#### Misoprostol for PAC: Cost Comparisons

• Use of misoprostol for treatment of uncomplicated early pregnancy failure is less costly than either expectant management or surgical intervention (pg. 60)

#### Use of prophylactic antibiotics for incomplete abortion

• There is not enough evidence to determine whether women presenting with incomplete abortion should be routinely provided prophylactic antibiotics. (pg. 62)

#### Pain Management: Effectiveness and safety

- Use of systemic analgesia and patient controlled sedation can effectively manage pain for MVA procedures for women with incomplete spontaneous abortions (pg. 67)
- Women who experience spontaneous abortions without surgery report the need for analgesia (pg. 67)



## II. FP COUNSELING AND SERVICE DELIVERY; STI EVALUATION AND TREATMENT; AND HIV COUNSELING AND/OR REFERRAL FOR TESTING

#### Strong Evidence

#### Post Emergency Treatment Counseling

- Offering family planning counseling and methods at the same location where the woman receives emergency treatment can increase the proportion of women leaving with a contraceptive method (pg. 73)
- Counseling patients in family planning methods will increase family planning uptake (pg. 75)
- Women who experience either induced or spontaneous abortion and desire another pregnancy should wait at least six month before becoming pregnant again to reduce the incidence of maternal anemia, premature rupture of membranes, low birth weight and preterm delivery in the next pregnancy (pg. 76)
- Postabortion family planning counseling and services reduces repeat abortions (pg. 77)
- PAC delivery models that provide on-site FP counseling and contraceptives can result in a) women using highly effective contraceptives, b) fewer unplanned pregnancies, and c) reduced repeat abortions one year later (pg. 78)
- Providing family planning counseling can increase the proportion of women agreeing to use a contraceptive method before leaving the health facility that provided PAC (pg. 79)
- Improving counseling and clinical skills can increase the proportion of women being discharged with a contraceptive method and an expanded method mix (pg. 79)
- IUD use postabortion does not increase the incidence or severity of early complications (pg. 81)
- Use of IUDs in the immediate postabortion period is safe (pg. 81)
- Women who choose to use IUDs or Norplant after abortion, find both contraceptive methods safe and highly effective (pg. 82)
- Use of IUDs after spontaneous and induced abortions is both safe and highly effective (pg. 83)
- The availability of free contraceptive commodities may increase the likelihood patients will report that they intend to use a contraceptive and will be discharged with a method (pg. 84)
- Providing on-site counseling and access to free contraceptives following emergency treatment can result in a) increased use of highly effective contraceptives, b) decreased unplanned pregnancies, and c) reduced repeat abortion (pg. 86)

#### Male involvement with counseling and family planning service delivery

- Hospital policies that ban men from obstetrical and gynecology wards make it difficult for male involvement and discourage male participation (pg. 87)
- After receiving the patient's expressed and informed consent, counseling husbands of PAC patients separately on follow-up care, return to fertility, and family planning can increase family planning usage and physical, material, and emotional support for PAC patients during recovery. (pg. 88)

- Many male partners want more information about their partners' conditions during PAC and more information on family planning (pg. 87)
- Many women want their husbands present for counseling associated with PAC (pg. 90)
- Many women want their partners to be informed about their conditions, treatment they are receiving, follow-up care, and family planning methods they intend to use (pg. 91)
- Bacterial vaginosis significantly increases the risk of spontaneous abortion nearly 10-fold (pg. 94)

#### HIV Counseling and Testing

• Women who are HIV positive are at an increased risk for spontaneous abortion (pg. 96)

#### Other counseling concerns related to postabortion care: Psychological sequelae

- Women may report suffering negative psychological effects after a spontaneous abortion (pg. 102)
- Some women presenting for PAC may have been compelled to have abortions and may experience guilt and/or immediate or long-term regret (pg. 104)
- Nineteen to 27 percent of women who have induced abortions may report anxiety and depression ranging in duration from one month to two years after the event (pg. 104)
- Between 27 and 39 percent of women seeking abortion have been victims of abuse sometime during their lifetime (pg. 109)
- Physical violence is associated with an increased risk of spontaneous abortion (pg. 112)

#### Enough Evidence for Action-Needs More Research

#### Male involvement with counseling and family planning service delivery

- Men need counseling on when sexual relations can resume following PAC (pg. 91)
- Male partners desire to understand more about emergency treatment; care of the woman after the procedure; causes for women's health problems; and contraceptive methods (pg. 92)
- Adolescent PAC patients may have substantially older male partners (pg. 93)

#### HIV Counseling and Testing

- Women accessing PAC services often do not receive STI and HIV prevention and care information or services due to lack of training by physicians and midwives in dual protection (pg. 95)
- Information is lacking on the needs of HIV positive women in relation to unplanned pregnancy (pg. 98)

#### **Needs More Research**

#### Post Emergency Treatment Counseling

• Information and counseling on PAC treatment costs; follow-up home care; and affect on future pregnancies influences a woman's satisfaction with PAC (pg. 72)



#### Male involvement with counseling and family planning service delivery

• Women experiencing two or more spontaneous abortions have a high prevalence of toxoplasmosis gondii compared to women without this same history. The extent to which toxoplasmosis causes habitual abortions remains controversial (pg. 94)

#### HIV Counseling and Testing

• Asymptomatic HIV positive adolescents on antiretroviral therapy are at no greater risk for spontaneous abortion, IUFD, IUGR or fetal, infant, or maternal death (pg. 97)



## III. COMMUNITY EMPOWERMENT THROUGH COMMUNITY AWARENESS AND MOBILIZATION

#### Strong Evidence

Reducing the incidence of spontaneous abortions can reduce the need for PAC

- There is a strong association between malaria in pregnancy and an increased risk of spontaneous abortion (pg. 129)
- Exposure to environmental contamination including pesticides and fungicides can increase the incidence of spontaneous abortion (pg. 129)

#### Enough Evidence for Action—Needs More Research

#### Health promotion for PAC

- Volunteer health promoters can provide family planning counseling and distribute contraceptive methods, thus, increasing contraceptive acceptance (pg. 121)
- Pre-intervention PAC research shows that involvement of community members can raise awareness of PAC services; identify barriers at the community level (i.e., quality and quantity of services and lack of emergency transport); and strengthen referral systems by incorporating families and community-based providers (pg. 122)
- Health action-education campaigns using community health workers can identify pregnant women, provide them with information on danger signs of pregnancy and contraception, and can help increase the numbers of women who seek skilled attendance (pg. 124)
- Multiple community-based educational strategies, including women's groups and radio messages can effectively increase knowledge of danger signs in pregnancy (pg. 125)
- Community education and mobilization efforts can increase blood banking and decrease primary postpartum hemorrhage fatality rates (pg. 127)

#### **Needs More Research**

Health promotion for PAC

- Community education efforts can increase the awareness of PAC services and enhance the quality of and access to PAC programs (pg. 120)
- Community-based health worker education can enhance access to PAC programs (pg. 120)
- PAC services are needed even in contexts where abortion is legal (pg. 122)
- Community participation and support for community emergency transport systems leads to better care for pregnant women and sustained links between the communities and health facilities (pg. 123)
- Community-based programs can increase participation by women in community decisionmaking more generally (pg. 126)
- Community-based women's savings and credit groups can provide a forum for women to discuss sensitive topics, and community education efforts can increase use of services (pg. 127)



• Community education efforts can help reshape social norms surrounding PAC and knowledge of consequences of unsafe abortion including reliance on traditional healers for PAC services and acceptance of adolescents' use of contraceptives (pg. 128)

Reducing the incidence of spontaneous abortions can reduce the need for PAC

- Smoking and exposure to smoke during pregnancy may increase the risk of spontaneous abortion (pg. 130)
- High levels of caffeine consumption during pregnancy can increase the risk of spontaneous abortion (pg. 132)



## IV. POLICY, PROGRAM, AND SYSTEMS ISSUES RELATED TO DELIVERY OF POSTABORTION CARE SERVICES

#### Strong Evidence

#### Provider Training for PAC: In-service Training

- In-service PAC training can increase the number of PAC patients who report that they received important information on their care regardless of whether sharp curettage or MVA was used (pg. 138)
- In-service PAC training can increase the number of PAC patients who report that they received important information on their care (pg. 139)
- In-service PAC training can increase the number of PAC patients who report receiving sufficient information to make an informed choice on contraception and who leave the hospital with a contraceptive method (pg. 140)
- In-service PAC training can increase the number of PAC patients who receive family planning counseling and leave the hospital with a contraceptive method (pg. 141)
- In-service clinical and counseling training can lead to increased use of MVA and increased numbers of PAC patients who receive family planning counseling and who leave the PAC facility with a contraceptive method (pg. 143)
- Training increases physician satisfaction with MVA (pg. 147)
- Training providers can result in increased counseling of PAC patients regarding emergency treatment and follow-up home care (pg. 148)
- Training providers can increase counseling of PAC patients concerning family planning options and the intention of PAC patients to use family planning (pg. 149)
- Training midwives to counsel PAC patients on family planning, STIs/HIV and nutrition (in addition to midwives undertaking other aspects of PAC, including emergency treatment using MVA) can increase counseling on these topics (pg. 153)

#### Systems Issues for Delivery of PAC Services: Who Can Provide PAC Services

- Allowing trained midwives to provide PAC (using MVA) will help increase access to PAC services (pg. 163)
- Use of dedicated FP nurse/counselors as compared to FP referrals for contraceptives can increase immediate contraceptive acceptance for PAC patients (pg. 165)

#### Increasing Access to Care, Including Types of Facilities that Provide PAC

- Providing family planning counseling and services in the same place as emergency treatment can increase patients' knowledge and intent to use family planning (pg. 168)
- Health policy changes, including developing and disseminating protocols and service delivery guidelines for PAC and reorganization of services, are needed to institutionalize PAC in hospital settings or provide PAC as an outpatient procedure (pg. 168)
- Providing contraceptive technology updates and counseling workshops for providers at the primary level can increase postabortion family planning counseling and method provision prior to discharge (pg. 175)



#### Ensuring Quality of Care Including On-Site Quality Improvement Techniques

- Improving the quality of care of PAC, whether MVA or sharp curettage is used, reduces the average length of stay in hospital facilities (pg. 177)
- Providing counseling on post procedure complications; follow-up care at home, return to fertility, and contraceptive methods; and providing empathy and support improves the quality of care of PAC (pg. 178)

#### PAC for Women in Countries Where Abortion is Legal and Available

• PAC services are needed even where abortion is legal (pg. 180)

#### Scaling up and Sustainability

• PAC programs can be scaled up (pg. 185)

#### **Enough Evidence for Action**

#### Provider Training for PAC: Pre-service Training

• Providing pre-service training to physicians can result in increased use of MVA over sharp curettage (pg. 137)

#### Provider Training for PAC: In-service Training

- Training of providers can improve clients' knowledge of emergency treatment and follow up care (pg. 145)
- Training in MVA can result in the use of MVA as well as sharp curettage (pg. 145)
- Training providers to improve the quality of postabortion care can increase women's positive evaluations of quality of care, acceptance of contraceptive methods, and satisfaction with the methods (pg. 150)
- Involving private providers in providing PAC services can increase emergency treatment and family planning counseling and services in communities (pg. 152)
- Training private nurse midwives can improve their knowledge scores concerning PAC (pg. 154)

# Systems Issues for Delivery of PAC Services: Infection prevention, standard precautions, and instrument processing

• PAC training on infection prevention can increase infection prevention measures by physicians and staff (pg. 158)

#### Increasing Access to Care, Including Types of Facilities that Provide PAC

- Increasing linkages and referrals between clinic-based health practitioners and communitybased providers may increase more timely access to PAC (pg. 175)
- Increased distances to health facilities is associated with decreased access to emergency obstetric care; increased hemorrhaging and length of hospital stay; and increased maternal and neonatal mortality rates (pg. 176)

#### Enough Evidence for Action-Needs More Research

#### Provider Training for PAC: In-service Training

- Training of providers in postabortion family planning and fertility can increase promotion of condom use and promotion of more effective methods of contraception, in addition to correct counseling concerning a PAC patient's return to fertility (pg. 144)
- Training can increase the use of pain medication for PAC patients (pg. 146)
- Training providers can change provider attitudes toward PAC patients (pg. 149)

#### Ensuring Quality of Care Including Use of On-Site Quality Improvement Techniques

• Provider attitudes and behavior toward PAC patients can lead to delay in seeking care (pg. 179)

#### **Needs More Research**

#### Provider Training for PAC: Peer Support

• Providing peer support may be a useful tool for supervision (pg. 156)

#### Scaling up and Sustainability

- Research on PAC can be used for policymakers to support expanding PAC programs and nationwide PAC protocols (pg. 184)
- Integrating family planning counseling and services into safe motherhood programs will assist in achieving sustainability of PAC (pg. 184)

#### Systems Issues for Delivery of PAC Services: Commodities and Logistics

• Lack of basic supplies such as disinfectant solutions can lead to the overuse of antibiotics (pg. 159)



# **APPENDICES**

What Works: Postabortion Care



### APPENDIX I: DESCRIPTION OF INTERVENTIONS FOR STUDIES REPEATED IN THE PAC MODULE

#### Ahluwalia et al., 2003, Tanzania.

The Community-Based Reproductive Health Project (CBRHP), a joint effort of CARE and the Tanzanian Ministry of Health, included a Community Capacity Building and Empowerment initiative designed to address high maternal mortality and morbidity in the Mwanza region of northwestern Tanzania. The project used qualitative data from group interviews and program data from CBRHP to assess progress in the development and use of community-level transport systems and village health worker support. Fifty-two villages received at least one mobilization visit by master trainers or CARE field staff, subsequent follow-up visits to assess their progress on the development of emergency transportation plans, use of participatory problem solving methods, and supportive supervision of VHWs. The project defines five tenets of community ownership of health issues and participation in decision-making: 1) level of participation by women, 2) level of participation by the broader community, 3) method of decision-making, 4) documentation and availability of decisions and action plans for review, and 5) level of community involvement by community members in CBRHP activities.

#### Benson and Huapaya, 2002a, Peru.

A 1996–1998 intervention study in a referral hospital in Lima, Peru, tested a model where all PAC services were provided in an obstetrics and gynecology emergency room on an outpatient basis. Doctors were trained in MVA and improved clinical practices, counseling on medical care and family planning, and provision of contraceptive methods. Pre-intervention patients spent the majority of their time in the obstetric and gynecology ward, following the sharp curettage procedure. Post-intervention recovery times were reduced, but increased somewhat three years later, in part due to an occasional practice of hospitalizing patients until their fees are paid. The original study utilized a pre-post intervention design with no control group. A follow-up assessment of the same outcomes was conducted in 2000-2002 to assess the sustainability of the intervention without outside assistance. Costs to the hospital were estimated using a time-motion study and data on salaries, costs of supplies and equipment, and other resources from a concurrent World Bank health sector reform project. Costs to patients were calculated based on patient receipts for hospital fees, medications, and other expenses. Data collection included review of the surgical logbook for 455 patients, clinical histories and exit interviews of 323 patients, a time-motion study of 52 patients from arrival at the emergency room until departure, 17 random inventories of supplies and equipment, and 13 in-depth interviews with providers and policymakers.

#### Billings et al., 2003a, Mexico.

A study in 1997–1998 in six hospitals of the Mexican Institute of Social Security (IMSS) provided training for providers to provide empathy and support for the woman and identification of her emotional state and specific needs, information about possible post-procedure complications and follow-up care at home, counseling to identify women's reproductive health intentions,



information about return to fertility, and contraceptive methods provided according to the needs and desires of the woman. The study interviewed 803 women treated for abortion complications. The study employed a quasi-experimental post-test only design, measuring outcomes separately for those institutions where PAC training had occurred from those institutions where staff had never participated in such training. No attempt was made in the study to distinguish explicitly between women who presented with spontaneous or induced abortions. Social workers asked women closed-ended questions at the time of their discharge

#### Billings et al., 2003b, Bolivia.

A 1999–2001 intervention study conducted in Bolivia's three largest maternity hospitals compared use of MVA to use of sharp curettage. The pre-post intervention study was conducted in maternity hospitals in La Paz, Santa Cruz, and Sucre. Due to differences in infrastructure, size, and staff and population characteristics, comparisons were made between pre- and post-intervention results within but not between hospitals. The intervention consisted of reorganization of services to ambulatory care; PAC training on information and counseling (health status, uterine evacuation procedure, postabortion contraception, and care after leaving the hospital) and appropriate technologies and technical performance; and refresher training and supportive supervision. Data were collected through 935 client exit interviews, 269 threemonth follow-up interviews with clients, 439 client observations, review of 768 clinical records, 47 provider interviews, 204 provider questionnaires, 138 male partner interviews, and 424 client flow observations to assess costs.

# Centre de Formation et de Recherche en Santé de la Reproduction and Clinique Gynécologique et Obstétricale CHU A. le Dantec, 1998, Senegal.

An intervention in Senegal from 1997–1998 trained providers to use MVA to treat patients for abortion complications. Physicians, nurses, and midwives at three teaching hospitals in Dakar received training in clinical management of abortion complications including MVA and infection prevention, family planning, and counseling. To measure the impact of the intervention, researchers in this pre-post intervention study interviewed 320 patients and 204 providers before the intervention and 543 patients and 175 providers after the intervention. A time-motion study was conducted to assess costs for 35 patients.

#### Dabash, 2003, Senegal.

This 2001–2003 pre-post intervention operations research study in Senegal introduced an integrated three-element PAC model in 18 primary care sites in two predominantly rural regions in Senegal to test the feasibility of making services more immediately accessible to women in rural areas and to assist with the development of national standards of care for PAC services. The intervention provided health personnel with 1) training to improve clinical competence, counseling, infection prevention, contraceptive knowledge, and general care, 2) development of management information systems and technical assistance, materials, and support to aid in overcoming challenges, and 3) ongoing monitoring and supervision. Before the intervention, most patients were treated with digital curage, often by untrained providers and without the



recommended general anesthesia. Digital curage is a method where the forefingers are used to manually explore the uterus and evacuate identified contents, creating opportunities for infection particularly in the absence of systematic hand washing and use of gloves. The intervention was evaluated through 103 client interviews, 180 provider interviews, service statistics collected during 14 months before and 14 months after the intervention, and facility observations and supervisory visits throughout the project period.

#### Huntington et al., 1995, Egypt.

This was a pre/post intervention study carried out in 1994 in two Egyptian hospitals in Cairo and in Minia on PAC, including use of MVA and provision of family planning. Training included demonstrations and supervised practice in surgical theaters, as well as contraceptive methods, family planning counseling training, and pain control. The study involved 552 structured observations of client-provider interactions; interviews with 154 physicians, 66 nurses, and 550 postabortion patients; and a review of medical records. A total of 83 physicians were interviewed during the pre-intervention period and 71 during the post-intervention period. The hospitals served as a clinical training site for medical students.

#### Huntington et al., 1998, Egypt.

This 1995–1996 study in Egypt assessed PAC services. A total of 568 hospitals were included in the sample frame, including 95 percent of government hospitals and approximately 60 percent of all hospital beds. Of these, approximately 15 percent of hospitals were randomly selected (for a total of 86 hospitals). A medical record abstract was developed to collect information on postabortion patient characteristics, medical findings upon admission, surgical procedures, other treatments during hospitalization, and family planning history.

#### Johnson et al., 1993, Kenya and Mexico.

A 1991 rapid assessment in Kenya and Mexico compared MVA to sharp curettage. Data were collected between January and June 1991 in four hospitals in Kenya and five hospitals in Mexico using direct observation to document actual time and resources from the beginning to the end of patients' hospital stays. All women included in the study had incomplete abortions with a uterine size reflecting less than 13 weeks gestation. The study design planned for at least 15 women from each hospital to be observed, but because of small caseloads this was not possible in all of the hospitals. Cost components studied were staff, drugs, and hospitalization.

#### Johnson et al., 2002, Zimbabwe.

A longitudinal study, carried out between 1996 and 1998, compared results from the two largest public hospitals in Zimbabwe where the intervention site provided on-site counseling and access to free contraceptives. Only women who stated a desire to postpone their next pregnancy for at least two years from the time of receiving postabortion care and who kept at least one follow-up appointment were included in the study. Following their treatment for incomplete abortion, 271 women at the intervention site were provided free, on-site family planning services prior to discharge. These services included information and counseling about short and long-term fertility control and the option to receive condoms, oral contraceptives, or



the injectable Depo-Provera prior to leaving the hospital. Clients who desired implants, IUDs, female sterilization, or other methods were given referral appointments. At the control site, the usual discharge procedures were followed with no special attention paid to the 258 women's postabortion contraceptive needs, although contraceptives were available for a nominal fee in the nearby maternity ward, a family planning clinic adjacent to the maternity ward, and other municipal clinics. Women at both sites were followed for one year, with study participants asked to return for follow-up interviews every three months. At follow-up, women at the control site were provided with information about where they could obtain contraceptives, but only if they asked. Women in the intervention site were provided with free contraceptive refills or different contraceptives if they were not satisfied with their original choice. Approximately one-fifth of women in the intervention site received home visits when they did not present for follow up visits. Women were tested for pregnancy and positive tests were given a second test to reconfirm the results.

#### Kiggundu, 1999, Uganda.

A 1998–1999 pilot study in three regional/referral hospitals, four district hospitals, and six health centers in Uganda trained midwives to provide PAC services. The study monitored 781 PAC patients during the nine months of data collection. This included 161 (21 percent) cases managed at the health center level, where no PAC services existed prior to the training of midwives. The pilot project involved training 10 physicians and 24 midwives separately in a series of three two-week workshops. A supervision visit was conducted within two weeks post-training to assist in the implementation of the new PAC services. Ongoing support and supervision was provided every three months. At the hospital level, even with the presence of doctors trained in MVA, midwives performed a significant proportion of MVA procedures. The sites reported that services were available on a 24-hour basis at health centers; since the midwives frequently live close to the facility and because they are known within the community, people are comfortable coming to their homes during the night. The program was evaluated six months after the last two-week training session and involved the inspection of logbooks and patient records, pre- and post-test skills assessment of the midwives, questionnaires administered to the midwives and their supervisors, interviews of PAC patients, monitoring reports, and direct observations. Prior to the study, doctors were managing all abortion patients in the hospitals and all health centers were transferring postabortion clients. A PAC curriculum and midwives handbook was developed as part of the intervention.

#### Koontz et al., 2003, El Salvador.

In a study conducted in 1999 in El Salvador, hospital cost, length of stay, complication rates, and family planning acceptance following PAC were compared in a prospective, randomized controlled study of 154 women assigned to either sharp curettage or MVA. Costs were calculated to include overhead costs associated with staying in the emergency room, the surgical obstetrics unit, and the gynecology ward; the costs of time of personnel involved with patient care; costs of medication during the hospital stay; costs of standard supplies and disinfection; cost of equipment; and costs of services such as labs, meals, ultrasound, etc.



#### Langer et al., 2002; Langer et al., 1999; Brambila et al., 1999, Mexico.

In a study of 339 postabortion patients in Oaxaca, Mexico, (year not specified) that compared MVA to sharp curettage, no attempt was made to determine whether or not the patient's abortion was spontaneous or induced in nature. At baseline, MVA was being used 0 percent of the time and increased to 78.1 percent at post-intervention. sharp curettage at baseline was the most utilized technique at 89.6 percent and decreased to 20.8 percent and a combination of sharp curettage and MVA was 10.4 percent at baseline and decreased to 1.1 percent. Guidelines were modified to stipulate using MVA with local anesthesia if a patient's uterus was determined to be smaller than 12 cm. Finally, all operating rooms became functional 24 hours a day to reduce waiting times.

#### Magak and Mukenge, 2004, Kenya.

The Community-based Abortion Care (COBAC) Phase II was launched in the Suba District in Western Kenya in 2001. Phase II, being implemented over a four-year period, follows formative research that identified community attitudes toward unintended pregnancy and unsafe abortion in the area (Mukenge, 2002). COBAC, a coalition of the Kisumu Medical and Educational Trust, the Centre for the Study of Adolescence, and the Pacific Institute for Women's Health, conducted a series of community education and mobilization efforts in the Suba District. Workshops trained 32 students as peer educators to sensitize other youth on the dangers of unsafe abortion. The feature film "The Great Betrayal," a drama revolving around a 16-year old girl who finds herself pregnant and alone, filmed and produced in Western Kenya, was screened in secondary schools and communities. The film promotes dialogue on the prevention of unwanted pregnancy and unsafe abortion. Over 6,000 adolescents, teachers, local leaders, ministry officials, and parents had viewed the film by the midterm evaluation. Women's and youth associations have been trained to conduct PAC and abortion prevention education at religious functions, chiefs' meetings, and other social gatherings. The evaluation also included surveys of 97 clients, 94 community members, six trained clinical providers, and 20 focus groups of community health workers, youth, community-based organizations, and providers.

#### Mahomed et al., 1994, Zimbabwe.

In a prospective longitudinal study from 1990–1991 conducted in Harare, Zimbabwe, 834 women were treated with MVA and 589 women were treated with sharp curettage for treatment of incomplete abortion. Only women with fewer than 12 weeks of gestation, determined by bimanual pelvic examination of uterine size, were included. At time of discharge, patients were scheduled for a two-week follow-up appointment and examined for post-procedural complications. Home visits were made for those who did not return for follow-up appointments. Physicians received a five-day training course in MVA, including use of analgesics for pain relief. Over a three-month period, data were collected on 1,000 consecutive patients treated for PAC with sharp curettage; one year after the initiation of the study, the same data were collected on 834 PAC patients treated with MVA, of which 589 were included in the analysis, as they had under 12 weeks gestation. Results were based on assessments made at the two-week follow-up.



#### Medina et al., 2001, Honduras.

This 2001 operations research study was conducted to expand postpartum and postabortion family planning in five hospitals in Honduras. This study was a follow-on to a 1996–1999 quasiexperimental, pre/post intervention operations research study in Hospital Escuela, the largest hospital in Honduras, which tested an intervention to improve postpartum and postabortion ("post-obstetric event") family planning counseling and provision of methods, and intent to use among women (Medina et al., 1998). The 2001 operations research study was conducted in five additional hospitals to help the MOH expand the Hospital Escuela model between 1999 and 2001. A repeated measures pre/post intervention study design with no comparison group was used to evaluate the impact of training 164 providers (including physicians, nurses, nurse auxiliaries, social workers, and educators) in counseling, communication, FP methods, and informed choice, and 65 nurses and physicians in providing medical methods (e.g., IUD insertion, mini laparotomy). Medical equipment and educational materials were provided to the five hospitals and referring health centers, and each hospital held quarterly meetings to discuss the most recent data collected through service statistics, patient surveys, and supervision visits. Of the 1,774 women surveyed, 154 had received postabortion care. They received the same FP services from the same providers as the postpartum women, except that they had a more immediate need for contraception to prevent a subsequent pregnancy and were able to use hormonal methods, as they were not breastfeeding. Study sites were chosen purposively; among the seven hospitals with the highest regional maternal mortality nationally, the five hospitals with the most favorable conditions for such an intervention were chosen, and on average, admissions for abortion complications were about 10 percent of deliveries. Sampling consisted of interviewing all women in a two-week period for each of six quarterly surveys.

#### Ministry of Health, Burkina Faso, 1998, Burkina Faso.

A study conducted from 1997–1998 in Burkina Faso compared MVA to sharp curettage. As part of this pre/post intervention study, researchers trained staff at two large hospitals in Ouagadougou and Bobo-Dioulasso to provide postabortion care and reorganized services to make them available at one location. Training for physicians, nurses, and midwives covered manual vacuum aspiration (MVA), family planning methods, infection prevention, and communication with patients. Staff also participated in the development of policies and standards for PAC services. To measure changes in knowledge and behavior, researchers interviewed 330 patients with abortion complications and 78 providers before the intervention, and 456 patients and 41 providers after the intervention, as well as collected information on hospital costs.

#### Savelieva et al., 2003, Russia.

This was a 2000–2003 operations research study to increase postabortion family planning in Perm, Russia. This study used a quasi-experimental time series design to compare two interventions to institutionalize pre-discharge postabortion counseling and family planning services in five sites (two hospitals and three outpatient facilities). Model I consisted of training providers in family planning counseling and interpersonal communication skills and developing and supplying provider job aids and client education materials on postabortion family planning. Model II had the same intervention components, plus offered clients a free initial three-month



supply of condoms, pills, DMPA, or IUDs. The interventions were evaluated by comparing women assigned to each of the interventions to a "control" group of women attending the same facilities prior to the intervention. Researchers interviewed 1,516 women and observed 40 client-provider interactions prior to the clients being discharged. In addition, they interviewed 49 providers and conducted 1,079 13-month follow-up interviews with clients to assess contraceptive use and subsequent pregnancies. The study also included a cost assessment, comparing the average cost to clients for the abortion (including travel, the procedure, and any related complications) with the cost for a one-year supply of contraceptives.

#### Solo et al., 1999a; Solo et al., 1998, Kenya.

A study in Kenya compared three different models of PAC care: 1) contraceptive options were provided on the gynecological ward by the same staff that provided PAC care; 2) contraceptive options were provided on the gynecological ward by family planning counselors; and 3) contraceptive options were provided off-site at a family planning clinic by family planning counselors. The intervention consisted of training PAC staff in MVA and postabortion family planning, provision of equipment and supplies, and reorganization of services. Four hundred and eighty-one women were interviewed prior to the intervention and 319 women were interviewed post-intervention.

#### Yumkella and Githiori, 2000, Kenya.

An evaluation was conducted 19 weeks following training for private nurse midwives to provide PAC services in Kenya. The training was conducted in 1999 with a series of six one-week workshops. A total of 57 nurse midwives were trained. These 57 nurse midwives represented 95 percent of the nurse midwives in three Kenyan provinces. Thirty-two of the 57 trained providers were assessed during the evaluation. The training was preceded by a 1998 needs assessment, with data collected from 151 nurse midwives in 49 facilities throughout Kenya.



# GLOSSARY OF TERMS AND DEFINITIONS

What Works: Postabortion Care



# **GLOSSARY OF TERMS AND DEFINITIONS**

Anembryonic Pregnancy: see Blighted Ovum (Boyd, 1989).

**Client–Provider Interaction** is the verbal and nonverbal communication that occurs between healthcare program staff and individuals seeking information or services (Ringheim, 2002). Essential elements of good client–provider interaction are respectful treatment (including respect for a client's right to confidentiality and privacy), respect for a woman's right to make decisions about her body, voluntary and informed choice, and incorporation of a gender perspective (Murphy and Steele, 2000).

**Complete Miscarriage** is expulsion of all products of conception (Thorstensen, 2000). It is characterized by resolution of symptoms and the total expulsion of products of conception (Coppola et al., 2003).

**Cotinine** is "a chemical that is made by the body from nicotine . . . and (can thus be) used to measure how much tobacco smoke has entered the body" (Foundation for Blood Research, 2004: 1).

**Digital Curage** is a method whereby the forefingers are used manually to explore the uterus and evacuate identified contents. It is a risky method that introduces great risk of infection (Dabash, 2003: 7).

**Eclampsia** is a disease occurring during the latter half of pregnancy or early postpartum and is characterized by an acute elevation of blood pressure, high amounts of protein in the urine, swelling and convulsions or coma.

**Emergency Obstetric Care (EmOC):** EmOC includes parenteral (administered by IV) antibiotics; parenteral oxytocic drugs; parenteral sedatives for eclampsia; manual removal of placenta; manual removal of retained products plus surgery (including cesarean section); anesthesia; and blood transfusion (Maine et al., 1997).

**Essential Obstetric Care (EOC):** EOC facilities administer parenteral antibiotics, parenteral oxytocic drugs, parenteral anticonvulsants for pre-eclampsia and eclampsia, and performs manual removal of the placenta, removal of retained products (e.g., manual vacuum aspiration), and assisted vaginal delivery (Maine et al., 1997).

Expectant Management, or watchful waiting, of PAC means wait, monitor, and watch.

Incomplete Abortion is defined as some products of conception are retained within the uterus (Krause et al., 1999).



**Incomplete Miscarriage** refers to incomplete expulsion of products of conception (Thorstensen, 2000). It is diagnosed when only part of the products of conception have passed through the cervical os (Coppola et al., 2003).

**Medical management of PAC** refers to the use of medication such as misoprostol and/or mifepristone to complete an incomplete abortion or miscarriage.

**Midwife** refers to the definition for "Skilled Attendant"; see Appendix 2 for a list of the minimum skills necessary for a skilled attendant at birth.

**Miscarriage** is defined in this module as involuntary loss of pregnancy before viability (Thorstensen, 2000).

**Missed Abortion traditionally** refers to pregnancy in which nonviable products of conception were retained for a period of weeks without expulsion. Others use this term to indicate diagnosis of a nonviable pregnancy in the absence of vaginal bleeding, regardless of the estimated time of retention of products of conception (Krause et al., 1999).

**Missed Miscarriage** refers to when the pregnancy stopped growing some weeks ago, but there was no bleeding at this time. This type of miscarriage usually causes a slight, dark-brown blood loss and the sudden end of normal pregnancy symptoms. It is sometimes called a blighted ovum.

Oxytocin is a drug that induces uterine contraction.

**Paracervical Block** is a technique used to achieve regional anesthesia from the injection of a local anesthetic on each side of the cervix during labor or childbirth.

Postpartum Hemorrhage (PPH): "PPH is any blood loss that causes a physiological change (e.g., low blood pressure) that threatens the women's life. This definition...reflects the fact that anemic women in developing countries are more susceptible to blood loss after giving birth" (McCormick et al., 2002).

**Pre-eclampsia** is a medical condition occurring in the latter half of pregnancy characterized by an acute elevation of blood pressure, high amounts of protein in the urine, swelling, but without the convulsions or coma seen in eclampsia.

**Products of Conceptus/Conception** refers to the contents of a pregnant uterus, including the pregnancy-induced enhanced endometrium, the embryonic or gestational sac, and embryo.

**Prophylactic** is any drug or device that prevents or helps to prevent the development of disease.

Sepsis is a toxic, febrile state resulting from infection.



**Septic Abortion** is said to occur when infection complicates the miscarriage (Krause et al., 1999).

Spontaneous Abortion (see miscarriage).

**Threatened Miscarriage** is (1) vaginal bleeding in the first 22 weeks of pregnancy with a closed cervix (Thorstensen, 2000), (2) any painless vaginal bleeding occurring prior to 4 weeks of pregnancy, regardless of fetal status (Krause et al., 1999), or (3) the diagnosis for the pregnant patient of less than 20 weeks' gestation who presents with vaginal bleeding and no cervical dilation or effacement. These patients may present with spotting to severe vaginal bleeding of several hours to days in duration (Coppola et al., 2003).

Uterotonic is an agent that overcomes relaxation of the muscular wall of the uterus.


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