CONTENTS

Tables v
Figures vi
Preface to the Second Edition vii
Acknowledgements ix
Acronyms and Abbreviations x

Chapter 1
Introduction 1
Background of Post Abortion Care in Zimbabwe 1
Rationale for Comprehensive Abortion Care Guidelines 2
The Law on Therapeutic Abortion in Zimbabwe 3
Current Post Abortion Care in Zimbabwe 3

Chapter 2
Comprehensive Abortion Care 5
Elements of Post Abortion Care 5
Adolescents: Concept of emancipated minors 8

Chapter 3
Diagnosis and management of abortion 10
Definition of Abortion 10
Clinical types of abortion 10
Treatment of incomplete abortion and miscarriage 14
Clinical history and examination 14
Medication Abortion 24

Chapter 4
Uterine Evacuation using MVA 32
Pre-operative Assessment 32
Rationale for use of MVA 34
Equipment and supplies needed for MVA 43

Chapter 5
Procedures in Manual Vacuum Aspiration 45
Preparing MVA instruments 45
Management of Therapeutic Abortion in second Trimester 53
Performing Sharp Curettage (Dilation and Curettage) 54
Post Evacuation Care 57
PREFACE TO THE SECOND EDITION
offer Comprehensive Abortion Family Planning and Counseling Services and referral to other reproductive health services.

It is noteworthy that only those medical personnel that have received training in comprehensive abortion care in a program approved by the Ministry of Health and Child Care are authorised to provide any part of comprehensive abortion care services in Zimbabwe.

Signature

Brigadier General Dr G. Gwinji
Secretary for Health and Child Care, 2014

ACKNOWLEDGEMENTS

Abortion accounts for 13% of maternal mortality. It is our hope that this work will contribute towards reducing maternal morbidity and mortality to attain the MDG-5 target. This edition was made possible by the collaborative links between the Ministry of Health and Child Care, senior members of the Divisions of Obstetrics and Gynaecology at Harare Central Hospital, Mpilo Hospital, Parirenyatwa Group of Hospitals and United Bulawayo Hospital, members of the Zimbabwe Society of Obstetricians and Gynaecologists and the department of Obstetrics & Gynaecology at the University of Zimbabwe.

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ACRONyms AND ABBREVIATIONS
Chapter 1

INTRODUCTION

Background of Post Abortion Care in Zimbabwe

Maternal morbidity and mortality related to complications of unsafe abortion have been identified as major public health problems. In 2008, the World Health Organization estimated that globally, 21.6 million unsafe abortions occurred causing the deaths of 47,000 women, despite rising contraceptive acceptance and prevalence rates.

Post abortion family planning was identified as a global reproductive health concern at an international conference on Safe Motherhood in Bellagio, Italy in February 1993. It was stated that "a range of contraceptive methods, accurate information and sensitive counseling and referral for ongoing care should be made available to all women who have undergone abortion." The technical working group agreed that the providers of post abortion care and family planning services must bridge the gap in services as an ethical responsibility.

In Africa, unsafe abortions are 700 times more likely to lead to death than unsafe abortions in developed countries. The World Health Organisation noted in the WHO's Global Strategy on Reproductive Health, adopted by the World Health Assembly in May 2004 that "As a preventable cause of maternal mortality and morbidity, unsafe abortion must be dealt with as part of the MDG on improving maternal health and other international development goals and targets." The Government of Zimbabwe is responding to this call, as well as to the Programme of Action of the International Conference on Population and Development (ICPD), which urges countries and organizations "to deal with the health impact of unsafe abortion as a major public health concern."

Abortion is ranked ninth out of Zimbabwe's top ten diseases/conditions. The Ministry of Health and Child Care (MOHCC) estimates that there are 60,000-80,000 unsafe abortions annually and maternal morbidity and mortality related to complications of unsafe abortion have been identified as major public health problems. In 1987, 18 percent of maternal deaths at Harare Hospital resulted from abortion complications. In 1992, 7906 women were treated for abortion complications at the four major public hospitals in Zimbabwe and 33 deaths were attributed to abortion complications.

The Government of Zimbabwe consented to the principles and resolutions contained in the Programme of Action adopted at the International Conference on Population and Development (Cairo, 1994). At this Conference, governments were urged to strengthen their commitments to women's health to deal with the impact of unsafe abortion as a major health concern and to reduce the recourse to abortion through expanded and improved family planning services. Amongst the objectives was provision of high quality treatment of complications of abortion and Post Abortion Family Planning (PAFP) counseling and services, thereby avoiding unwanted pregnancies and reducing preventable deaths caused by unsafe abortion.

Rationale for Comprehensive Abortion Care Guidelines

A community-based study in Zimbabwe showed that abortion complications ranked as a major cause of maternal deaths in both rural (15%) and urban (23%) settings.

Since then, efforts to address the issue of high maternal morbidity and mortality attributed to complications of abortion have been ongoing. These efforts include:

- An intervention study linking post abortion care to contraception from 1995 to 1996. This study found that women who received PAFP services reported greater use of modern contraception. There was a reported reduction in unplanned pregnancies, repeated abortions and contraceptive failures over the 12 month follow-up period compared to women who did not receive PAFP services.
- An Expanded Hospital Based Post Abortion Family Planning project to implement post abortion family planning services at selected central, provincial and district hospitals, 1997 to 1999.
- A recommendation by the National Reproductive Health Steering Committee that Manual Vacuum Aspiration be introduced to all institutions that manage abortion in Zimbabwe.
- Recommendations by the Zimbabwe National Conference on Linking PAC with PAFP in the management of abortion complications (1999) which included:
  a) Development of a national policy and guidelines for reproductive health services
  b) Development of new IEC materials on PAFP and PAC.

This publication aims to standardise CAC services in Zimbabwe.
The Law on Therapeutic Abortion in Zimbabwe

The Termination of Pregnancy Act (No. 29 of 1977) permits the legal termination of pregnancy if continuation of the pregnancy constitutes:

1. Serious threat to the life of the woman.
2. Risk of permanent impairment to her physical health.
3. Risk of grave physical/mental defects leading to severe handicap in the child, e.g., congenital malformation, physical, biochemical, immunological and anatomical defects. Examples include Rubella and severe fetal malformations.
4. Abortion is also permitted for pregnancies resulting from unlawful intercourse, i.e., rape, incest or intercourse with a mentally handicapped woman.

A magistrate must certify that the conception resulted from unlawful intercourse. For the medical indicators for legal abortion, two physicians must certify to the superintendent of a designated hospital that one of the above conditions exist.

In Zimbabwe, termination of pregnancy may be permitted for HIV-positive women if they choose to do so.

Current Post Abortion Care in Zimbabwe

Prior to 2002, the Health System in Zimbabwe offered comprehensive emergency treatment of incomplete abortion only from secondary level of the healthcare delivery system i.e. District, Provincial and Central referral hospitals. In the majority of these institutions uterine evacuation is performed under general anaesthesia or sedation and requires hospital admission for an average of two days. Apart from a few referral hospitals, there were no specific post abortion family planning counseling and supply services.

In general, linkages between post abortion emergency services and other reproductive health services such as STI or cervical cancer screening services were non-existent. Poor transportation services in rural Zimbabwe meant that the centralised Reproductive Health services are out of reach for most rural women.

Following the introduction of the National PAC Program (now the CAC program), there has been an increase in the availability of emergency abortion care services throughout the health system. This is a result of standardised training of medical personnel; doctors and nurses at all levels of the healthcare system which is evident in a documented improvement in the quality and range of care at every level. Treatment services are decentralized and offered at most district hospitals.
Chapter 2

COMPREHENSIVE ABORTION CARE

Comprehensive abortion care is the care given to a woman experiencing spontaneous, self-induced or medical termination of pregnancy, with the aim of minimizing or preventing the undesirable outcomes of abortion. An ideal comprehensive abortion care program should:

- Provide safe, high-quality services, including abortion, post abortion care and family planning;
- Decentralize services so they are closer to women;
- Be affordable and acceptable to women;
- Understand each woman's particular social circumstances and individual needs and tailor her care accordingly;
- Address the needs of young women;
- Reduce the number of unintended pregnancies and abortions;
- Identify and serve women with other sexual or reproductive health needs;
- Be affordable and sustainable to health systems

Comprehensive post abortion care services should include both medical and preventative health care that allow women to exercise their sexual, and reproductive health rights while maintaining their physical and mental health needs as well as taking into account each woman's personal circumstances and ability to access services.

Elements of Comprehensive Abortion Care

Post abortion care is an integral part of Comprehensive abortion Care and has five elements namely:-

2. Contraceptive services, family planning and other reproductive health services to prevent unwanted pregnancy and abortions.
3. Counseling before and after treatment to identify and respond to women's emotional and physical health needs.
4. Links between post abortion emergency services and other reproductive health services, preferably on site or through referrals other accessible facilities.
5. Community mobilization and participation to prevent unwanted pregnancies and unsafe abortions, to mobilize resources to ensure timely care for abortion complications and to make sure that services meet community expectation and needs.

In the management of abortion, it is of paramount importance to uphold privacy and the patients' individual confidentiality to ensure their confidence in the health care worker.

1. Emergency treatment of incomplete abortion and life-threatening complications

General Procedures for emergency treatment of post abortion complications are:

- An initial assessment to confirm the diagnosis of abortion complications
- Medical evaluation (brief history, physical and pelvic examination)
- Stabilization of emergency conditions and treatment of any complications.
- Explanation to the woman regarding her medical condition and treatment plan.
- Uterine evacuation to remove retained products of conception

2. Post Abortion Family Planning counseling and services

A woman's fertility returns almost immediately after an incomplete abortion which may be as early as 11 days, if the pregnancy was less than 12 weeks. Therefore, she must consider, whether she wants to become pregnant again soon. In the case of spontaneous abortion, however, it may not be the best time for her to make decisions that are permanent or long term. Counseling must be geared to the client's emotional and physical state. Full and informed choice is critical in the selection of any method and especially on provider dependent methods (IUDs, injectables, implants and voluntary sterilization.)

Nearly all contraceptive methods may be used and can be started immediately unless there are major post abortion complications. Natural family planning is not recommended, however, until a regular menstrual pattern returns.

Because ovulation returns rapidly following an abortion, post abortion family planning needs to be initiated immediately. The key elements of PAFP are:
helps service providers to understand the context in which women and their families live.

uncovers community attitude and perceptions regarding abortion and high-quality healthcare services.

determines the extent of community awareness regarding unplanned pregnancy, unsafe abortion, contraception and available health services.

shapes sensitization and health-education messages regarding unplanned pregnancy, unsafe abortion, the need for safe abortion services and how to identify abortion related complications.

identifies existing barriers to abortion services and follow-up.

builds trust between providers and community members.

helps health care providers understand opposition and constraints faced when offering abortion services in the community.

helps identify opportunities to abortion and ways to reduce it.

helps identify allies who can help promote access to reproductive health services.

aids proactively identifying problems and developing solutions.

identifies reason behind unwanted pregnancy and ways to decrease it.

strengthens early identification of abortion complications.

gets communities working together to change policies to protect women's sexual and reproductive health and rights.

Adolescents: Concept of emancipated minors

- Under Zimbabwean Law, a minor, defined as any woman under the age of 16, who is pregnant, is deemed to be an 'emancipated minor' who can give consent for procedures associated with pregnancy and its complications, such as Caesarean Section or procedures for treating incomplete abortion. This means that parental consent may not always be required.

- If however, a parent or guardian is involved in the health care of the minor, the health worker has an obligation to ask the minor whether consent should be sought from the adult present or parent.

- In the absence of the minor's biological parents, any responsible adult who is acting as a guardian can sign the consent on behalf of the minor. In the absence of any guardian or parent, or if the patient is too ill to give consent or unconscious, the consultant in charge of her medical care or the most senior medical practitioner available in the institution, can sign consent for any surgical procedure on behalf of the minor.
### Table 1. Post abortion Services Appropriate for Each Level of Health Care

<table>
<thead>
<tr>
<th>Provision of Post Abortion Care by Level of Health Care Facility and Staff</th>
<th>Provision of Post Abortion Care by Level of Health Care Facility and Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community</td>
<td>Community outreach worker; basic health care training; Traditional birth attendants; Traditional healers; VHW, VHW, CHPs</td>
</tr>
<tr>
<td>Primary Health Centre</td>
<td>Health workers; Nurses; Trained midwives; General practitioners</td>
</tr>
<tr>
<td>Secondary Level</td>
<td>No site; Trained midwives; General Practitioners; Clinical Officers; Obstetrician Specialist</td>
</tr>
<tr>
<td>District Hospital</td>
<td>Above activities plus; Emergency obstetric care available through referral system; Treatment of most post abortion complications; Local and general anaesthesia; Diagnosed and referred for severe complications (implantation, sepsis); Laparoscopy and hysterectomy (including for ectopic pregnancy); Abortion on request and indications; All above activities plus voluntary sterilizations and follow-up</td>
</tr>
<tr>
<td>Provincial Hospital</td>
<td>Above activities plus; Obstetric and general surgery are conducted for all acceptable indications; Treatment of severe complications (excluding abortion, severe sepsis, normal delivery); Treatment or non-hospitalizing disorders</td>
</tr>
<tr>
<td>Referral level General, Provincial &amp; Central Hospital</td>
<td>Above activities plus; Obstetric and general surgery are conducted for all acceptable indications; Treatment of severe complications (excluding abortion, severe sepsis, normal delivery); Treatment or non-hospitalizing disorders</td>
</tr>
</tbody>
</table>


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### Chapter 3

**DIAGNOSIS AND MANAGEMENT OF ABORTION**

#### Definition of Abortion

Spontaneous or induced termination of pregnancy before 22 weeks of gestation or delivery of foetus less than 500 grams foetal weight. Pregnancies after this period are called preterm deliveries.

#### Clinical types of abortion

**Unsafe abortion**

Procedure for terminating an unintended pregnancy carried out either by persons lacking the necessary skills or in an environment that does not conform to minimal medical standards, or both (WHO definition).

**Spontaneous Abortion**

Also referred to as miscarriage; abortion in which termination of pregnancy is not provoked.

#### Threatened abortion

Bleeding and/or cramping during pregnancy without dilatation of the cervix. Threatened abortion may progress to loss of the pregnancy. Threatened abortion usually refers to vaginal bleeding during the first 22 weeks of pregnancy (WHO 2008). Bleeding may be scanty, with or without lower backache and cramp-like pains. The pain may resemble that experienced during a menstrual period. The cervix remains closed and the uterus is soft with no tenderness when palpated. The size of the uterus corresponds to the dates of gestational age. The symptoms may continue over a period of time.

- Generally, no medical treatment is necessary.
- The patient is advised to avoid activities requiring effort as well as sexual intercourse. It is not necessary that she stays in bed.
- If bleeding resumes, re-examine her for further assessment.
- If bleeding continues, assess fetal viability (pregnancy test/ultrasound scan) or search for an ectopic pregnancy (ultrasound...
Inevitable abortion

Bleeding and/or cramping in pregnancy as in threatened abortion, with the addition of cervical dilatation. It is also described as complete or incomplete abortion. Once cervical dilatation has occurred, abortion is inevitable. It is also described as complete or incomplete abortion.

Inevitable abortion presents with vaginal bleeding that may be heavy, with clots or the gestational sac containing the embryo or fetus. The membranes can rupture at this time, and amniotic fluid will be observed. The cervix dilates, and tissue or clots may be seen in the vagina or protruding through the cervical opening. Blood loss may be excessive. The pain during miscarriage may be as intense as during labor. The mother may present in a state of shock that is out of proportion to the revealed blood loss. This is caused by products of conception becoming trapped in the cervix and will resolve with their removal. Therefore, it will result in an incomplete or complete abortion.

- **If pregnancy is ≤ 16 weeks**, plan to evacuate the contents of the uterus. If an immediate evacuation of the uterine cavity cannot be made:
  
  Give ergometrine 0.2 mg i.m. (repeated after 15 minutes if necessary) OR misoprostol 400 µg sublingual or 600 µg oral (repeated once after four hours if necessary). Take necessary measures to evacuate the uterus as soon as possible.

- **If pregnancy is > 16 weeks**, wait for spontaneous expulsion of the products of conception and, if necessary, evacuate the intruterine products of conception;

  If necessary, infuse a drip of dilute 20 units of oxytocin in 500 ml of intravenous solution (serum physiologic or Ringer lactate) perfuse at a rate of 40 drops per minute to facilitate the expulsion of the products of conception.

Incomplete abortion and miscarriage

Bleeding and/or cramping with cervical dilatation and expulsion of part, but not all of the pregnancy tissue (retained Products of Conception (POC)). Incomplete abortion may result in complications such as sepsis.

Treatment of incomplete abortion and miscarriage is one of the core elements of PAC. It occurs when there are retained products of conception after induced abortion (whether by unsafe or safe methods) or after spontaneous abortion, also known as miscarriage. If not addressed promptly, an incomplete abortion may result in excessive bleeding and/or infection and lead to more serious, life-threatening problems.

Typical presenting signs of incomplete abortion are:

- vaginal bleeding
- dilated cervix
- uterus smaller than indicated by date of last menstrual period

Complete abortion

Complete expulsion of all products of conception from the uterus. Complete abortion occurs when the conceptus, placenta and membranes are expelled completely from the uterus. The pain stops and signs of pregnancy regress. The uterus is firmly contracted on palpation. Broadly speaking, it is not necessary to evacuate the uterine cavity. Make the woman feel at ease about that topic. No further medical intervention is required, although support through the aftermath of pregnancy loss should be available. Conduct counseling and ensure the provision of family planning and other reproductive health services.
Missed abortion

A pregnancy with delayed or no expulsion of the products of conception. With missed abortion, the uterus does not increase in size and may decrease in size because of absorption. Retention of this tissue may cause problems with blood clotting.

Induced abortion

Termination of pregnancy caused by deliberate interference including those performed in accordance with legal sanctions and those performed outside the law.

Therapeutic abortion

Therapeutic abortion refers to medically indicated abortion for women whose life or health is threatened by continuation of the pregnancy or when the health of the foetus is threatened by congenital or genetic factors.

Septic abortion

Septic abortion is defined as an abortion having infectious complications. The abortion is associated with infection and may result in septicemia and septic shock if not properly managed. If pathogens appear in the lower genital tract as a result of a spontaneous abortion or an abortion performed in unsafe conditions and then spread throughout the body, the infection can turn into sepsis. The risk of sepsis is greater if the products of conception are retained in uterus and are slowly evacuated. Sepsis is a common complication of instrumental abortion practiced in unsafe conditions.

In cases of suspected abortion in unsafe conditions, look for signs of infection or traumatic vaginal, uterine or intestinal lesions and thoroughly irrigate the vagina to remove all herbal preparations, local medications or caustic substances that may be present.

Medication abortion

The use of safe and effective drug-based methods that can terminate an unwanted pregnancy or pregnancy termination with abortion, inducing medication in lieu of primary surgical intervention.

A successful medical abortion is defined as complete termination of pregnancy without the need for an aspiration or surgical procedure.

A medical abortion is defined as a failure, if an aspiration or surgical procedure is performed. Failure may be the result of continuing pregnancy, incomplete abortion, heavy bleeding, provider judgment, or the request of the woman.

Treatment of Incomplete Abortion and Miscarriage:

The basic protocol begins with a clinical examination, followed by a clinical assessment, diagnosis and treatment.

Clinical History and Examination

A. Obtain history

1. Current medicines used
2. Any known allergies
3. Acute or chronic illnesses or conditions (including malaria, HIV/AIDS, other sexually transmitted infections (STIs))
4. Brief obstetric and contraceptive history (including gravidity, parity, outcomes of previous pregnancies, history of previous miscarriages, etc.)
5. History of domestic violence
6. History of amenorrhea
7. History of current pregnancy
   - Last menstrual period (LMP)
   - Pregnancy symptoms
   - When bleeding began, bleeding patterns and amount of bleeding
   - Pelvic pain/cramping
     - Is pain/cramping intermittent (like contractions) or constant?
     - Severity of pain/cramping on a scale of 1 to 10 (10= worst pain ever felt)

Note: Ultrasound may be useful if available, but it is not necessary for the diagnosis of incomplete abortion or confirmation of the treatment. Complete evacuation can be confirmed with clinical history and pelvic examination.
B. Ancillary testing (if indicated and available)

1. Hemoglobin or hematocrit
2. Ultrasound is not routinely needed to diagnose incomplete abortion
3. If pregnancy test is available, it can be used to confirm the diagnosis. However, pregnancy testing is not routinely needed to provide treatment.
4. Blood typing and Rh immunoglobulin can be determined, if available.

C. Perform physical exam

1. Vital signs: blood pressure, temperature, pulse, and respiratory rate
2. General appearance: pallor, level of energy and alertness, ambulatory, no indication of acute distress
3. Speculum exam:
   a) Cervical opening open or closed
   b) POC protruding from cervix
   c) Discharge from cervical opening
   d) Color and amount of blood in vaginal vault
4. Pelvic exam:
   a) Uterine size, tenderness
   b) Cervical motion tenderness
   c) Adnexal mass suggestive of ectopic pregnancy

For the assessment of uterine size the uterus may be smaller than the indicated gestational age by date of last menstrual period, and a bimanual examination should not go above the symphysis pubis (when less than 13 weeks).

If it is an emergency the provider should carry out a emergency assessment and care.

Emergency Assessment and Care

A. Rapid initial assessment for shock if woman appears to be frankly hemorrhagic, losing consciousness, near collapse, septic, etc.
1. Check vital signs (blood pressure, pulse, temperature, respiratory rate)
2. Signs of shock:
   a) Fast, weak pulse (rate > 110 beats per minute)
   b) Low blood pressure (diastolic < 60)

c) Pallor (generally very pale, pallor of palms or around the mouth)
d) Sweatiness
e) Rapid breathing (respiration > 30 per minute)
f) Anxiety, confusion or unconsciousness
g) Frank, profuse hemorrhage

H. If the woman is in shock or clinically unstable:

1. If woman is conscious or family member is present, confirm if woman:
   a) Is on current medications
   b) Has any serious health conditions
   c) Has known allergies
2. Proceed immediately to stabilize the woman:
   a) i.v. fluid volume replacement with large-bore i.v. catheter
   b) Oxygen by mask if available
   c) If sepsis is suspected, blood and cervical cultures if possible
   d) Broad-spectrum i.v. antibiotics if indicated
   e) Uterine evacuation as soon as possible, if indicated
   f) Determine underlying etiology of shock and treat accordingly, e.g. intra-abdominal injury or ruptured ectopic pregnancy.

C. Transfer to a reference hospital

1. If woman requires transfer to a facility that can provide higher-acuity care, she may need stabilization and volume replacement with i.v. fluids before/during transport.
2. Complete the register and the referral form. Notify referral facility that woman is being transported and give report on her diagnosis and condition.
3. Arrange for the management of other reproductive health problems and conditions according to the local protocols.

Assessment and Diagnosis

A. Assess whether woman is in stable condition (See section on Emergency Assessment and Care, and refer patient accordingly for emergency cases)
B. At the hospital/tertiary level, rule out other possible diagnoses (e.g. abnormal pregnancy, ruptured ectopic pregnancy, molar pregnancy, post-coital bleeding, physiological bleeding due to placenta development,
C. Confirm the diagnosis of incomplete abortion based on signs and symptoms.

**Treatment**

The methods which are used for the treatment of incomplete abortion are in Table 2 below.

### Table 2: Methods for the treatment of incomplete abortion

<table>
<thead>
<tr>
<th>Medical Methods</th>
<th>Surgical Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Misoprostol</td>
<td>Vacuum aspiration (MVA or EVA)</td>
</tr>
<tr>
<td>Ergometrine</td>
<td>Dilatation &amp; Evacuation</td>
</tr>
<tr>
<td>Oxytocin</td>
<td>Dilatation &amp; Curettage</td>
</tr>
</tbody>
</table>

The World Health Organization recommends both vacuum aspiration and misoprostol as first lines of treatment for incomplete abortion. Misoprostol is included in the WHO Essential Drugs List, as well as Priorities List for Mothers and Children for the treatment of incomplete abortion and miscarriage (WHO 2009, WHO 2012). Even though D&C can be used when it is the only treatment option available, the WHO recommends VA as the preferred surgical method (WHO 2012b), and recommends replacing D&C with VA, where available.

"If the uterine size at the time of the treatment is equivalent to a pregnancy of gestational age 13 weeks or less, either vacuum aspiration or treatment with misoprostol is recommended for women with incomplete abortion. The recommended regimen of misoprostol is a single dose given either sublingually 400 μg or orally 600 μg" (WHO 2012b)

**Note:** Routine antibiotic coverage is not necessary for the treatment of incomplete abortion, unless the provider determines that the woman requires antibiotic coverage based on history or clinical examination. If the patient has severe signs of infection, she should be treated at the hospital.

### Table 3: Criteria for the selection of the method for treatment of incomplete abortion and miscarriage

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Misoprostol</th>
<th>MVA/EVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incomplicated case of incomplete abortion,</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>uterine size ≤ 13 weeks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incomplicated case of incomplete abortion,</td>
<td>Can be used, if surgical methods are not available</td>
<td>YES</td>
</tr>
<tr>
<td>uterine size &gt; 13 weeks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman admitting with:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hemorrhage, incontinence, shock</td>
<td>VA or other surgical methods should be the first choice</td>
<td>YES</td>
</tr>
<tr>
<td>Septicaemia or active pelvic inflammatory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Known allergy to misoprostol or other</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>prostaglandin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confirmed or suspected ectopic pregnancy</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>Woman who are breast feeding</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>IUD in place</td>
<td>Remove before giving misoprostol</td>
<td>Remove before the procedure</td>
</tr>
<tr>
<td>Hemorrhagic disorder or current anti-</td>
<td>If misoprostol is used, monitor closely</td>
<td>VA is preferred</td>
</tr>
<tr>
<td>coagulant therapy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe anemia</td>
<td>Monitor closely</td>
<td>YES</td>
</tr>
<tr>
<td>HIV positive status</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

**Uterine Evacuation with misoprostol and Other Medical Methods**

Misoprostol is one of the two WHO recommended treatment methods for incomplete abortion. It has been shown to be as effective as manual vacuum aspiration in treating incomplete abortion (where most of the studies compared misoprostol with MVA for uterine size up to 12 weeks and the WHO approved its use for this indication up to uterine size of 13 weeks gestation (WHO 2012a).

Misoprostol is a prostaglandin E1 analogue, first marketed as Cytotec®, that was initially developed for the prevention and treatment of peptic ulcer. Prostaglandins are a group of chemicals made by nearly all of the body's cell membranes. Different prostaglandins have different effects on the body; they can help treat inflammation and pain, raise or lower blood pressure, affect the immune system and stimulate uterine contractions and labor. The registered use of
misoprostol is for prevention of gastric and duodenal ulcers resulting from chronic administration of non-steroid anti-inflammatory drugs (NSAIDS). It also induces uterine contractions and is often used, off-label, for pregnancy termination. Studies have evaluated the use of misoprostol alone for termination of pregnancy in gestations of any age, and also for completion of missed and incomplete abortion and have demonstrated proven efficacy.

MISOPROSTOL

Misoprostol has uterotonic effects, and it causes the cervix to soften and the uterus to contract. It has several uses in obstetrics and gynecology, which include treatment of incomplete abortion and miscarriage; treatment of missed abortion; intrauterine fetal death; labor induction; prevention and treatment of postpartum hemorrhage; cervical priming; and pregnancy termination. WHO recommends the use of misoprostol in combination with mifepristone but misoprostol alone can also be used where mifepristone is not available. In Zimbabwe, misoprostol may be used for the treatment of abortion without combination with other medications and the dose for the treatment of incomplete abortion is 400 µg sublingual or 600 µg oral.

MEDICAL TREATMENT OF INCOMPLETE ABORTION

Regimens and Efficacy of Misoprostol Treatment for Incomplete Abortion

The World Health Organization approved misoprostol as one of the recommended methods (along with VA) for the treatment of incomplete abortion, with the regimen of 400 µg sublingual or 600 µg oral, single dose. Table 5 summarizes the studies which compared misoprostol for the treatment of incomplete abortion with MVA. All of these studies demonstrated that medical treatment using misoprostol and MVA treatments have equal efficacy for uterine size up to 12 weeks. In the more recent WHO guidelines, misoprostol is recommended to be used up to 13 weeks uterine size for the treatment of incomplete abortion (WHO 2012a). Based on evidence, misoprostol can be used as a first line of treatment for incomplete abortion for women who are eligible.

MISOPROSTOL ENDORSEMENTS

Misoprostol is included in the WHO Model List of Essential Medicines for incomplete abortion, as well as in Life Saving and Priority Medicines for Mothers and Children (WHO 2011b, WHO 2012b). It is also recommended for use in post-abortion care by the International Federation of Gynecology and Obstetrics (FIGO), the American College of Obstetricians and Gynecologists (ACOG), the Latin American Federation of Obstetrics and Gynaecology (FLASOG), the International Confederation of Midwives (ICM), Zimbabwe Society of Obstetricians and Gynaecologists (ZSOG) and other international organizations and associations.

Treatment of incomplete abortion based on uterine size

A. Pregnancy with a uterine size of ≤13 weeks of gestation

Misoprostol is the recommended medical treatment for incomplete abortion and miscarriage by the WHO (up to uterine size equivalent to 13 weeks of gestation).

It is necessary to explain each option to the patient and let her choose. The patient will choose the solution that suits her.

Medical Treatment: One may give 600 µg of misoprostol orally and request the patient to come back for follow-up in 1-2 weeks. Products of conception will usually be expelled after one week, thus follow-up before day 7 is not recommended for women in stable condition to allow time for the completion of the procedure and to avoid over-treatment. It is necessary to inform the patient of the possible side effects of misoprostol: chills, fever, vomiting and diarrhea. These are usually temporary. Women should also be informed of the warning signs and seek immediate help. The warning signs are heavy bleeding, fever that lasts more than 24 hours, severe pain, and feeling very sick. If the woman experiences any of these warning signs, she can return to the health facility at any time for any reason. After one week, all products of conception have not been completely expelled, a second dose of misoprostol can be administered or manual vacuum aspiration can be used, if available.
Surgical treatment: Perform the intrauterine aspiration (with MVA or EVA) using a vacuum syringe to aspirate the uterine contents. It is done on an outpatient basis with local anesthesia or other pain management as required.

Vacuum aspiration is the recommended technique of surgical uterine evacuation by the WHO (up to uterine size equivalent to 12-14 weeks of gestation) and should be preferred over dilatation and sharp curettage wherever available.

B. Pregnancies with a uterine size of 14-16 weeks of gestation

- Misoprostol 400 µg orally (repeated once after four hours if necessary); OR
- Ergometrine 0.2 mg IM (repeated after 15 minutes if necessary); OR
- Vacuum aspiration

C. Pregnancies with a uterine size of >16 weeks of gestation

The technique of evacuation depends on the quantity of remaining products and advanced age or not of pregnancy (abortion in the 2nd trimester). There are several treatment options:

- Infuse oxytocin 40 units in 1 L i.v. fluids (normal saline or Ringer's lactate) at 40 drops per minute until expulsion of products of conception occurs;
- If necessary, give misoprostol 200 µg vaginally every four hours until expulsion, but do not administer more than 800 µg;
- D&E to evacuate any remaining products of conception from the uterus.

Note: When other methods are not available, misoprostol alone can also be used to evacuate the uterus for treatment of incomplete abortion and miscarriage for pregnancies >16 weeks.

For all methods, it is necessary to provide family planning counseling and services prior to discharge from the facility and to follow-up the patient after treatment.

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**Table 4. Current recommended Regimens for misoprostol ONLY in Obstetrics & Gynaecology**

<table>
<thead>
<tr>
<th>WEEKS</th>
<th>DOSE OF MISOPROSTOL</th>
<th>ROUTE</th>
<th>TIMING</th>
<th>EFFICACY</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;12</td>
<td>600 µg (three 200 µg tablets)</td>
<td>Oral</td>
<td>Single dose - repeat 5 hourly if necessary</td>
<td>90%</td>
</tr>
<tr>
<td>OR</td>
<td>600 µg (two 200 µg tablets)</td>
<td>Sublingual</td>
<td>Single dose</td>
<td>85-95%</td>
</tr>
<tr>
<td>Missed abortion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post 1st trimester</td>
<td>800 µg (four 200 µg tablets)</td>
<td>Vaginal</td>
<td>Every 3 hours up to a maximum of 2 doses</td>
<td>92% (77% after first dose)</td>
</tr>
<tr>
<td>OR</td>
<td>600 µg (three 200 µg tablets)</td>
<td>Sublingual</td>
<td>Every 3 hours up to a maximum of 2 doses</td>
<td>93%</td>
</tr>
</tbody>
</table>

Intrauterine fetal death

- 1-17 weeks | 600 µg (one 200 µg tablet) | Vaginal | Every 6 hours maximum 4 doses | maximum 3 doses |
- 18-26 weeks | 100 µg | Vaginal | Every 6 hours maximum 4 doses | maximum 4 doses |
- 26 weeks | 25 µg | Vaginal | Every 6 hours | |
- OR | 25 µg | Oral | Every 2 hours | |

Therapeutic abortion

- 1-12 weeks | 800 µg (four 200 µg tablets) | Vaginal | Every 3 hours, maximum 3 doses | |
| OR | 800 µg (four 200 µg tablets) | Sublingual | Every 3 hours, maximum 3 doses | |
- 13-24 weeks | 400 µg (two 200 µg tablets) | Vaginal | Every 3 hours, maximum 5 doses | |
| OR | 400 µg (two 200 µg tablets) | Sublingual | Every 3 hours, maximum 5 doses | |

Highest success rates are achieved with extended follow-up (7 to 14 days) to allow completion of expulsion. Surgical intervention is not recommended prior to 7 days after treatment unless medically necessary. There is also evidence that a repeat dose may increase efficacy. Misoprostol also works well when placed between the cheek and gum (buccally) or under the tongue (sublingually).
Table 5: Studies comparing medical treatment of incomplete abortion using misoprostol with treatment using MVA

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>n</th>
<th>Treatment</th>
<th>Time to miscarriage</th>
<th>Success rates for misoprostol and MVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>Tylor et al.</td>
<td>220</td>
<td>600 µg oral misoprostol; MVA</td>
<td>Days 7 -14</td>
<td>98.1%; 99.1%</td>
</tr>
<tr>
<td>2012</td>
<td>Debelsi et al.</td>
<td>197</td>
<td>400 µg sublingual; MVA</td>
<td>Day 7</td>
<td>96.7%; 99.7%</td>
</tr>
<tr>
<td>2013</td>
<td>Diop A. et al.</td>
<td>150</td>
<td>600 µg oral misoprostol; 400 mg sublingual misoprostol</td>
<td>Days 7 -14</td>
<td>94.5%; 99.5%</td>
</tr>
<tr>
<td>2015</td>
<td>Elgine C. et al.</td>
<td>123</td>
<td>600 µg oral misoprostol; MVA</td>
<td>Days 7 -14</td>
<td>91.5%; 100%</td>
</tr>
<tr>
<td>2017</td>
<td>Don B. et al.</td>
<td>279</td>
<td>600 µg oral misoprostol; MVA</td>
<td>Days 7 -14</td>
<td>94.5%; 99.1%</td>
</tr>
<tr>
<td>2017</td>
<td>Steinhocke R, et al.</td>
<td>130</td>
<td>600 µg oral misoprostol; MVA</td>
<td>Days 7 -14</td>
<td>99%; 100%</td>
</tr>
<tr>
<td>2002</td>
<td>Fitzer MYF, et al.</td>
<td>150</td>
<td>100 µg oral single or double dose</td>
<td>Day 7</td>
<td>55.3%; 91.0%</td>
</tr>
<tr>
<td>2005</td>
<td>Weeks A. et al.</td>
<td>160</td>
<td>600 µg oral misoprostol; MVA</td>
<td>Days 7 - 14</td>
<td>96.5%; 91.5%</td>
</tr>
</tbody>
</table>

Data from the various studies in Table 5 that compared medical treatment of incomplete abortion using misoprostol with treatment using MVA conclude that the different success rates are not statistically significant. As seen above, in treating incomplete abortion, misoprostol by the sublingual and oral routes have the quickest onset of action and have been widely studied. It has also been demonstrated that misoprostol 400µg sublingually and misoprostol 600µg orally have similar safety and efficacy profiles when used with uterine size less than or equal to 12 weeks LMP (last menstrual period) (Diop et al, 2009, Gynaecology Health Projects 2009, Tang et al. 2007).

Misoprostol for the Treatment of Missed Abortion and Anembryonic Gestation

Although the guidelines focus on the treatment of incomplete abortion, misoprostol, as noted, can also be used for the treatment of missed abortion and anembryonic gestation. Missed abortion is characterized by the arrest of embryonic or fetal development; anembryonic pregnancy (formerly called blighted ovum) when a gestational sac develops but there is no embryo within it. Embryonic demarcation occurs when an embryo has no cardiac activity. Both conditions are diagnosed by ultrasound.

The dosage for missed abortion and anembryonic gestation is misoprostol 800µg vaginally or misoprostol 600µg sublingually every three hours for a maximum of two doses. Misoprostol treatment efficacy may be lower for these indications than it is for incomplete abortion.

Medication abortion

Background

Medication abortion provides women with another option for termination of pregnancy when indicated, and should be offered in addition to surgical abortion methods when possible. Many women appear to prefer medical abortion over surgical methods and when given the option, often choose the medical method. Women who choose the medication abortion method do so because to them it offers greater privacy and autonomy, is less invasive, and seems more natural than surgical termination.

Indications and Usage up to 9 weeks gestation

The use of misoprostol for pregnancy termination for gestational ages up to 9 weeks LMP has a success rate of 85-90%. The efficacy of the regimen, course of treatment and complication rates vary, based on gestational age. It is very important to accurately assess the gestational age for use of this method (for example by last normal period). Current recommendations caution use for abortions beyond 9 weeks. As the gestational age increases, the uterus becomes more sensitive to misoprostol, and while the dose needed to effect expulsion decreases, increases in the time required to expel the pregnancy and increases in estimated blood loss have been noted.

Each woman should be screened to assess her eligibility for medical abortion and whether the method is appropriate for the woman. A standard screening for medical abortion should include the following areas: Medical, historical characteristics and preferences, social circumstances: family/partner support, job and household responsibilities, access to adequate back-up facilities, ability to return to clinic for a follow-up visit, where needed.

WHO recommended doses for therapeutic abortion using either misoprostol only or a combination of mifepristone and misoprostol are as follows:
Misoprostol only

Up to 12 weeks gestation (84 days): 800 µg vaginal or sublingual every 3 hours (max dose 2000 µg)

Over 12 weeks gestation (84 days): 400 µg vaginal or sublingual, every 3 hours (max dose 2000 µg)

Misoprostol and mifepristone combination

≤ 6 weeks gestation (63 days): 200 mg oral mifepristone followed 24 hours later by 800 µg vaginal, sublingual or buccal misoprostol

>6 weeks to ≤12 weeks gestation (63 to 84 days)
• 200 mg oral mifepristone followed 36 hours later by 800 µg vaginal misoprostol. Subsequent misoprostol doses should be 400 µg, administered either vaginally or sublingually, every 3 hours up to 5 doses

>12 weeks to ≤24 weeks (84 days to 154 days)
• 200 mg oral mifepristone followed 36 hours later by repeated doses of misoprostol. The initial dose of misoprostol may be either 800 µg vaginally or 400 µg orally. Subsequent misoprostol doses should be 400 µg, administered either vaginally or sublingually, every 3 hours up to 5 doses.

Contraindications

• History of allergy to prostaglandins, including misoprostol
• Undiagnosed adrenal mass
• IUD in place (remove before beginning misoprostol regimen)
• Confirmed or suspected ectopic pregnancy
• Signs of pelvic infection or sepsis
• Symptoms of shock or hemodynamic instability.

Risks

Uterine rupture
Misoprostol may increase the risk of uterine rupture, especially in second trimester pregnancies and in women with a scarred uterus. The risk of uterine rupture with early medical abortion is unknown, and has not occurred in hundreds of thousands of recorded uses of misoprostol (alone or in combination regimens) for early first trimester abortion.

Teratogenicity
Although some studies conclude that there is no clear evidence of teratogenicity, doctors and women need to be aware that failure of medical termination after exposure to misoprostol may lead to an abnormal fetus. If a pregnancy is ongoing after exposure to misoprostol, surgical termination is recommended.

Precautions

Severe anaemia: Women using medical abortion experience more prolonged bleeding that women having a surgical abortion. However, the total amount of blood loss and decrease in haemoglobin levels is modest for both methods. Anaemia itself is not a contraindication for the medical abortion, but all women with severe anaemia should initiate treatment for such anaemia when diagnosed.

Return for follow-up visits: Medical abortion may require one or more follow-up visits to confirm that the abortion is complete according to current practices. Women who wish to have a medical abortion must be willing and able to return to the clinic for these visits.

Access to emergency back-up care: Severe complications (blood transfusion or emergency treatment) following medical abortion are rare. If they occur, though they are very serious and women undergoing medication abortion should have adequate access to emergency back-up facilities during the abortion process.

Effect and Side Effects

Most of the side effects associated with medical abortion are expected. The most common effects are pain (associated with uterine cramping), vaginal bleeding, vomiting and rigour.

Women should be counselled about possible side effects and their treatment. They can be given either pain medication tablets or a prescription for pain medication before leaving the clinic.
Table 6. Expected effects and side effects of medication abortion

**Expected Effects**

- **Pain and discomfort:** Initially severe, may persist for several hours. Pain may be relieved with medication.
- **Vomiting:** Common, usually within 1 to 2 hours. Medication may help.
- **Heavy bleeding:** Expected within 3 to 7 days after medication.
- **Functioning of uterus:** Varies, some women may have normal menstrual cycles.

**Side Effects**

- **Pain and discomfort:** May persist for several days. Medication may help.
- **Nausea and vomiting:** Common, usually within 1 to 2 hours. Medication may help.
- **Heavy bleeding:** Expected within 3 to 7 days after medication. Medication may help.
- **Functioning of uterus:** Varies, some women may have normal menstrual cycles.

**Criteria for determining completion:**

- **Physical exam:** Women’s report of symptoms of abortion with physical examination demonstrating return of uterus to pre-pregnant size.
- **Serum hCG testing:** A decline in serum human chorionic gonadotropin (hCG) levels can indicate that the pregnancy has ended. To document a change in hCG, a comparison of sequential serum samples is necessary.
- **Ultrasound scan of the pelvis:** should only be required if clinical examination cannot rule out incomplete abortion and should rarely be required.

**Medication abortion counseling**

Counseling is crucial to the success of the medication abortion procedure.

- **Describe the medication abortion procedure.**
- **Inform consent:** In accordance with local regulations and practices, women are required to sign a consent form. Informed consent should indicate a full explanation of the process, and a statement indicating that risks, benefits, complications and potential side effects have been fully explained. It should also document that the woman has had the opportunity to ask questions and received satisfactory answers and that the woman has received detailed information about the procedures for emergency care.
- **Success rate:** Explain that between 2-8% of women will require a surgical intervention. Additionally with failure of the medication, the woman should be prepared to undergo a surgical abortion for completion of the procedure.
- **Side effects:** Discuss expected amount of pain, bleeding and other side effects that are commonly experienced during the process.
- **Potential complications:** Give a detailed description of possible complications with explanation of their management. Written information on discharge and/or a telephone number to use if questions or concerns arise may be given if feasible in the local context.
- **Follow-up care:** The patient should return to the clinic to confirm that her abortion is complete rather than relying on self-report.
Contraception after medication abortion

Contraceptive counseling should be routine and include a reminder to the woman that fertility returns quickly following early first trimester abortion.

All CAC patients should be counseled on contraceptive methods and ideally provided a method of their choice before they leave the health facility, as fertility may return as early as within 10 days of treatment. Contraceptive services should be provided at the same site with treatment services to increase uptake.

i. Hormonal contraception (e.g., oral contraceptive pills, implants and injectables) can be given at the clinic on the day misoprostol is given or MVA or other medical/surgical procedure is completed. They can be started on the same day of treatment, even if infection is present, while at the same time, treating for infection.

ii. When misoprostol is used for the treatment of incomplete abortion, an intrauterine device (IUD) can be inserted when successful treatment is confirmed at the follow-up visit. When VA is used for uterine evacuation, an IUD can be inserted on the same day immediately after the procedure. In case of confirmed infection, or if the provider suspects an infection, insertion of the device can be delayed until the follow-up visit to make sure that all traces of infection have disappeared.

iii. Condoms can be given the day treatment is provided with any methods.

iv. Emergency contraceptive pills may be given in advance as a back-up method.

v. Female or male sterilization can be provided at a follow-up visit.

Provision of family planning services at the same time and location where a woman receives postabortion care services leads to higher contraceptive acceptance than when women are referred for contraceptive services and supplies.

Follow-up

1. Schedule a follow-up visit one to two weeks following treatment.
   Note: Women who are referred from health centers can go to the same health center for the follow-up visit.

2. History suggestive of successful treatment:
   a. Women who are treated with misoprostol may experience bleeding ranging from lighter than a menstrual period to much heavier than a menstrual period after taking the tablets, usually with passage of clots or tissue.
   b. Women who are treated with vacuum aspiration may have slight bleeding or spotting for the next 1-2 weeks after the procedure which gradually subsides.

3. Pregnancy symptoms have lessened or disappeared; she no longer feels pregnant.

4. Physical exam suggestive of successful treatment:
   a. Minimal or absent bleeding
   b. Normal uterine size (small, firm)
   c. Non tender uterus and adnexae and no cervical motion tenderness
   d. Closed cervical opening

5. If findings show that abortion may still be incomplete and the woman is clinically stable, she may be offered:
   a. At the health center level
      Women should be offered VA for the completion of treatment. If VA is not available at the health center, or if she requests a repeat dose of misoprostol, she should be referred to a hospital with VA capacity.
   b. At the hospital level
      A repeat dose of misoprostol (600 µg oral, single dose) OR VA or another surgical evacuation method

* In addition, oxytocin or dilatation and evacuation can be used for larger uterine 4/12. Refer to incomplete abortion and miscarriage treatment guidelines for details.
It is necessary to explain each option to the patient and let her choose.

At both health center and hospital levels, after the second treatment, it is advisable that the woman be evaluated again in 1-2 weeks to be sure the abortion is complete.

All women should be given contraceptive counseling and advice at the follow-up visit as well. She should be asked about her current contraceptive method and given any additional information on the use of the method. Those women who are not currently on a method should be offered an effective method before they leave the clinic.

Chapter 4

UTERINE EVACUATION USING MVA

1. Pre-operative Assessment

A thorough assessment of abortion patients is mandatory for accurate diagnosis and detection of life threatening complications such as shock, severe bleeding, intra-abdominal injury and sepsis. If any of these are present, measures must be taken to stabilize the patient before evacuating the uterus.

The assessment consists of taking a good history, performing a thorough physical examination, establishing necessity for resuscitation and conducting appropriate laboratory tests.

History

The healthcare worker should get information on:
Presenting problem/complaint
Duration of amenorrhea - last menstrual period
Amount and duration of bleeding
Presence of lower abdominal pain - severity and duration
History of contraception
Previous abortion
Drug allergies

Physical Examination

This includes:
General examination - general state of health, pallor
Assessing vital signs - temperature, pulse, respiration, blood pressure
Abdominal examination - height of fundus, consistency, tenderness, bowel sounds
Bimanual palpation - note the amount of blood
- remove any products of conception visible from the cervix as this reduces the amount of bleeding
- note any foul smelling discharge/produces of conception
- note if the cervix is open or closed
- note any cervical excitation, tenderness
4. Pain Control

The purpose of pain management is to ensure that the patient experiences minimum anxiety and discomfort. The clinician should provide one or a combination of pain control measures below, unless the patient declines.

- **Anxiolytics:**
  - Diazepam: PO, 10mg 1 hour before procedure
  - Midazolam: i.m., 5mg i.v., 1-2 mg
  - Lorazepam: PO, 1-2 mg i.v., 2mg over 1 minute i.m., 0.05 mg/kg

- **Analgesia and narcotics:**
  - Pethidine: i.m., 50-125 mg, i.v. 25-50 mg
  - Paracetamol with codeine: PO, 1-2 tablets
  - Fentanyl: iv, 50-100 μg
  - Ibuprofen: PO, 400-800 mg
  - Paracetamol: PO, 500-1000 mg

- **Local anaesthesia:**
  - lignocaine: 15-20 ml of a 0.5-1% solution

- **Paracervical block:**
  - Lignocaine: 15-20 ml of a 0.5-1% solution

6. Evacuation of the uterus

The MVA is the surgical method of choice for evacuation of a uterus of less than 12-14 weeks in size. D & C is not recommended as first choice because of the risk of uterine perforation and infection, but can be used if no other method is available.

Vacuum aspiration uses suction to remove uterine tissue through a cannula with minimal scraping of the uterine walls. Vacuum aspiration, which has been used for more than two decades in industrialised countries, may be performed using suction provided by an electric or foot pump or a specially designed manual vacuum aspiration (MVA) syringe.

**RATIONALE FOR THE USE OF MVA**

The use of manual vacuum aspiration (MVA) makes it possible for uncomplicated incomplete abortions to be treated at primary health care provided adequately trained health personnel are available.
Dilatation and curettage (D & C), the traditional method of removing tissue from the uterus, is accomplished by scraping the uterine walls with a metal sharp curette. This is invasive and may result in uterine perforation.

Uterine evacuation can be achieved either with suction or with D&C but suction has been found to be the safer method. The waiting time before uterine evacuation, recovery time after the procedure and the overall delays in treatment of incomplete abortion are reduced by using MVA.

As illustrated in Table 7, MVA has lower complication rates than other methods of uterine evacuation.

MVA does not require general anaesthesia but is performed using local anaesthesia and sedation.

MVA does not require operating theatre facilities and can be performed in suitably equipped family planning clinics and primary health care clinics. The simplicity of the procedure allows it to be performed by a trained, non-physician health worker. This increases the potential for earlier access to services, and also reduces the need for referral to higher levels within the health care system.

MVA can be done safely on a uterus of 13/40 size or less without the requirement of a theatre. Theatre facilities may be needed for uteri of size 14 weeks and above.

### Table 7. Results of Four Studies Evaluating MVA

<table>
<thead>
<tr>
<th>Author Date</th>
<th>Number of cases</th>
<th>Gestational age (estimated weeks, LMP)</th>
<th>MVA aspiration time (approximate minutes)</th>
<th>Effectiveness of MVA</th>
<th>Complication rates for MVA %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kieszek et al, 1983 Egypt</td>
<td>108</td>
<td>15</td>
<td>6</td>
<td>&gt;90</td>
<td>9</td>
</tr>
<tr>
<td>Kiesewetter and Sato, 1990 Egypt</td>
<td>500</td>
<td>12</td>
<td>90A</td>
<td>&lt;90</td>
<td>1.7</td>
</tr>
<tr>
<td>Mohdall et al, 1992 Zambia</td>
<td>854</td>
<td>12</td>
<td>3</td>
<td>&gt;90</td>
<td>0.3</td>
</tr>
<tr>
<td>Vercelli and Curtin, 1992 Zambia</td>
<td>179</td>
<td>18</td>
<td>3</td>
<td>&gt;90</td>
<td>4.3</td>
</tr>
</tbody>
</table>

### Advantages of MVA

Using MVA as the method of uterine evacuation to treat incomplete abortion is preferred because:

- the risk of complications is reduced,
- access to service is increased,
- the cost of post abortion services is reduced, and
- the resources used are reduced.

In addition use of MVA offers the potential for earlier access to care, because management is easier and serious complications are less likely to occur.

### Precautions prior to performing MVA

In the course of initial assessment, conditions may be discovered that indicate the need to initiate uterine cavity. In particular special precautions are needed when:

- Uterine size determined by pelvic examination differs greatly from that determined by LMP (size greater than dates), or
- Uterine size beyond the first trimester

These may be indications for performing evacuations in theatre under general anaesthesia.

Complications e.g. shock, intra-abdominal injury, sepsis, moderate to severe vaginal bleeding must be attended to immediately. The patients must be stabilized before proceeding to the evacuation of the uterus.

It is essential to have the instruments and supplies required for MVA readily available.

### MVA instrument kits.

The Ipsas MVA Plus™ Aspirator and Ipsa Easy Grip® Cannulae

### MVA instruments

Manual vacuum aspiration, or MVA, is a safe and effective technique for uterine evacuation whose low cost, simplicity and portability make it especially
valuable reproductive-health technology. More than 25 years of clinical research in over 100 countries has shown vacuum aspiration for uterine evacuation to be safer than, and as effective as, sharp curettage, also known as dilation and curettage, or D&C. Further, MVA offered in outpatient settings has been shown to reduce the cost and length of stay related to the procedure, when compared to sharp curettage performed in an operating theatre. MVA is also an excellent alternative to electric suction, producing an equivalent vacuum (Greenslade et al., 1993; Baird & Flynn, 2001)

While an overview of Ipas MVA Plus™ Aspirator and Ipas EasyGrip® cannulae is given here, Ipas MVA instruments such as the Ipas Double-Valve aspirator or the Ipas Single-Valve aspirator may be used, equally well.

**Figure i. Components of the MVA PlusTM aspirator**

![Diagram of MVA PlusTM aspirator](image)

The Ipas MVA Plus™ aspirator provides a vacuum of between 24-26 inches, or 609.6-660.4 millimetres, of mercury. It is composed of the following parts:

- a valve with a pair of buttons that control the vacuum, cap and a removable liner
- a plunger with a plunger handle and O-ring

- a 60cc cylinder for holding evacuated uterine contents, with a retaining clip for the collar stop
- a collar stop

Ipas EasyGrip® cannulae are available in sizes 4, 5, 6, 7, 8, 9, 10 and 12mm.

- the smaller cannulae (4mm-8mm) have two opposing apertures.
- the larger cannulae (9, 10 and 12mm)

**Figure ii. EasyGrip® cannulae**

![Diagram of EasyGrip® cannulae](image)

Dots imprinted on each cannula indicate the location of the main aperture; the first dot is 6cm from the cannula tip and dots thereafter are spaced at 1cm intervals.

Cannulae are semi-rigid and have permanently attached colour-coded bases; separate adapters are not necessary. Wings on the bases aid in connection to and disconnection from the aspirator.
Assembly and charging of the Ipas MVA Plus™ aspirator

In preparation for use, the Ipas MVA Plus™ aspirator must first be charged with vacuum, as follows.

1. **Open the valve and put the liner in place** by aligning the internal ridges. Then close the valve and snap the cap into place.

   Figure iii. Opening the valve and aligning the ridges

2. **Check the O-ring**. Ensure that the O-ring is in the groove at the tip of the plunger. Lubricate it with a single drop of lubricant such as silicone glycerol or liquid detergent. Never use petroleum-based products such as petroleum jelly on the O-ring as they can deteriorate the rubber. Take care not to over-lubricate the O-ring.

   Figure iv. Closing the valve

3. **Assemble the aspirator** by pushing the cylinder into the valve, making sure that the buttons are not engaged while doing so. Insert the plunger all the way into the cylinder. Make sure that the buttons, the wide side of the cylinder base and the plunger handle are in alignment. Then affix the collar stop by it under the retaining clip and pushing its tabs into the holes at the base of the cylinder.
4 Create the vacuum. First push the buttons down and forward until you feel them snap into place. Then charge the aspirator by pulling back on the plunger until its arms snap outward and catch on the sides of the cylinder base. With the plunger arms in this position, the plunger will not move forward and vacuum is maintained. Incorrect positioning of the arms could allow them to slip back into the cylinder, possibly injecting the contents of the aspirator into the uterus. Never grasp the aspirator by the plunger arms.

Figure vii. Creating the vacuum

5 Check the aspirator for vacuum retention before use. Allow establishing the vacuum, leave the aspirator for several minutes, and release the buttons. You should hear a rush of air into the aspirator, indicating that there is a vacuum. If you do not hear a rush of air, displace the collar stop, withdraw the plunger and check that the O-ring is properly placed, lubricated, and free of damage and foreign bodies. Also check that the cylinder is firmly placed in the valve. Then reinsert the plunger, reposition the collar at the top and reset the aspirator. If vacuum is still not retained, the aspirator cannot be used. Discard it and use another aspirator.

Reuse of Ipas MVA Instruments

The Ipas MVA™ Plus aspirator can be reused multiple times. After each use, it must be disassembled and cleaned. Because it does not come into contact with the patient, cleaning is sufficient for the Ipas MVA Plus aspirator. It can be sterilised or high-level disinfected (HLD) if desired.

Ipas EasyGrip® cannulae are sterilised after packaging and remain sterile for up to three years provided the package is kept dry and intact. In the United States and a number of other countries, they are labelled for single-use and should be discarded after use. Where regulations allow, these cannulae are reusable after undergoing sterilisation or HLD. For step-by-step instrument usage information (see Chapter 5)
Replacement of Ipas MVA instruments

The Ipas MVA Plus™ aspirator should be discarded and replaced for any of the following reasons:

- The cylinder is brittle or mineral deposits inhibit plunger movement
- The valve parts are cracked, bent or broken
- The buttons are broken
- The plunger arms do not lock
- The aspirator no longer holds a vacuum

Ipas EasyGrip® cannulae should be discarded and replaced for any of the following reasons:

- The cannula has become brittle
- The cannula is cracked, twisted or bent, particularly at the aperture
- Cleaning the cannula does not completely remove tissue

Table 8. Range of cannulae size relative to uterine size

<table>
<thead>
<tr>
<th>Uterine size in weeks LMP</th>
<th>Suggested cannula sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-9 weeks LMP</td>
<td>6-10mm</td>
</tr>
<tr>
<td>7-9 weeks LMP</td>
<td>5-10mm</td>
</tr>
<tr>
<td>9-12 weeks LMP</td>
<td>8-12mm</td>
</tr>
</tbody>
</table>

EQUIPMENT AND SUPPLIES NEEDED FOR MVA

Bivalve speculum, medium or large
Uterine tenaculum or vectorium forceps
Sponge or ring forceps (2)
10-12ml syringe and 22 gauge needle (for paracervical block)
MVA instruments which maybe include vacuum single or double valve syringes or MVA Plus™ aspirator flexible cannulae of different sizes, adaptors for double valve syringes and silicone for lubricating MVA syringe O-ring.

Clinical source (to see cervix and inspect tissue)
Gloves/ gauze
Antiseptic solution (preferably an idophor or any locally available skin antiseptic)
Sterile, high level disinfected surgical glove or new examination gloves
Sample magnifying glass (x4-6 power) (optional)
Clear container or basin, for tissue inspection
Tissue, for tissue inspection

Items that should be on hand, but are not required for all MVA procedures, include:

Local anaesthetic, i.e., 1% lidocaine without epinephrine
Staple curettes, small, medium and large
Laceration, mechanical dilators, Pratt or Hegar (metal) or Demniston (plastic)
The treatment room should have the following furniture and equipment in working order:

Examination table with stirrups
Suction light
Mat or stool for clinician (optional)
Plastic buckets for decontamination solution, (0.5% chlorine, e.g. JIK, Javel)
Puncture proof container for disposal of needles
Leak proof for disposal of infectious waste

For high level disinfection or sterilization of instruments, these items should be on hand:

High level disinfection solution e.g. 0.5% Chlorine
Sterilisation solution e.g. Cidex
Heat source if HLD by boiling is to be used
Clean water for washing instruments or for HLD
Small scrub brushes
Sterile water to rinse sterile instruments
Utility gloves
Chapter 5

PROCEDURES IN MANUAL VACUUM ASPIRATION

Preparing MVA instruments

Have the instruments, needles, syringes and supplies required for MVA readily available and prepared.
Check that the MVA syringe holds a vacuum
Ensure that emergency backup is available
Charge the MVA syringe by:
Locking the valve in a closed position, and pulling back on the plunger until the arms of the plunger lock in place with scissors.

Figure ix – preparing the syringe (creating a vacuum)

(Winkled et al. 1995)

The following 23 steps outline the proper procedure for evacuating the uterus using MVA

Step 1
Patient empties her bladder and her perineal area is washed with betadine or soap and water. Shaving the patient’s pubic hair is not necessary and may increase the risk of local infection (cellulitis). If pubic hair is long and interferes with instruments, trim it.

Step 2
Put patient in the lithotomy position, clean and drape the vulva.

Step 3
Confirm size and position of uterus by doing a bimanual pelvic examination.

Step 4
Prepare the syringe and select cannula to be used.

Step 5
Gently insert the bivalve speculum and check the cervix for tears and protruding POCs. Remove any protruding POCs by sponge or ovum forceps. Thoroughly apply antiseptic solution 3 times to cervix in a circular motion starting at the os and extending outward, and vaginal walls using a sponge forceps and gauze or cotton.

Step 6
If necessary, remove the speculum and insert the index finger into the vagina to remove any remaining POCs. Re-insert the speculum.

Step 7
If needed, administer a paracervical block to cervix at 3, 5, 7 and 9 o'clock (see Figure x ) grasp the lip of cervix with ring forceps.
Figure xii – Measuring the uterine depth with the cannula

Step 8

Apply gentle traction to the cervix to align the endometrial cavity with the endocervical canal. This will facilitate insertion of the cannula.

While holding the cervix steady and gently applying traction, insert the cannula through the cervix into the uterine cavity just past the internal os. The internal os resistance is overcome.

Figure xiii – Inserting the Cannula

Figure xiv – Attaching the Syringe

Step 10

Attaching the pre-charged syringe to the cannula by holding the (or tenaculum) and the end of the cannula in one hand, the syringe on the other.

Step 9

Holding the cannula between thumb and index finger, gently progress into the uterine cavity until the cannula touches the fundus. Note the uterine depth. The dots nearest the tip of the cannula are the 1cm and 2cm intervals. After measuring the uterine size, withdraw the cannula slightly but not out of the uterine cavity.
At this point it is critical to ensure that the cannula does not move forward into the uterus as you attach the syringe. Doing so may perforate the uterus.

**Step 11**

Release the pinch valve on the syringe to transfer the vacuum through the cannula to the uterine cavity. Bloody tissue and bubbles should begin to flow through the cannula into the syringe.

**Figure xiv – releasing the pinch valve through the cannula into the syringe.**

Source: IPAS, 1993

**Step 12**

Evacuate any remaining products of conception by gently rotating the syringe and then moving the cannula gently and slowly back and forth within the uterine cavity.

**Figure xv – Evacuating Uterine contents**

Source: IPAS, 1993

It is important not to withdraw the opening of the cannula beyond the cervical os, as this will cause the vacuum to be lost. If this happens or if the syringe is full, you should detach the syringe from the cannula, empty the syringe, and then recreate the vacuum by re-attaching the syringe to the cannula. Never grasp the syringe by the plunger arms while the vacuum is established and the cannula is in the uterus; doing so may cause them to unlock, accidentally allowing the plunger to slip back into the syringe and push the material back into the uterus.

If no products are moving through the cannula into the syringe, the tip of the cannula may be blocked. Close the valve, remove the cannula from the uterine cavity, and check the tip for blockage. Continue the procedure.
Figure xvi – Detaching the syringe

Source: IPAS, 1993

Step 13
Check for signs of completion.

The MVA procedure is complete when:
- red or pink foam and no more tissue is seen in the cannula,
- gritty sensation is felt as the cannula passes over the surface of the evacuated uterus,
- the uterus contracts and the cervix grips the cannula, making its movement into and out of the uterus difficult.

Step 14
Withdraw the syringe and cannula. Detach the syringe and then place the cannula in the decontamination solution. With the syringe valve open, empty the contents of the MVA syringe into the strainer by pushing on the plunger.

Step 15
Remove the tenaculum and speculum and put them into a decontamination solution.

Step 16
Check for undue vaginal bleeding from the os. Repeat bimanual pelvic examination.

Step 17
Inspect the tissues obtained and send for histology if appropriate. The volume of products should fit the size of uterus. The following rule of thumb may be used:

Volume of products (ml) = (size of uterus in weeks/2) x 10

Figure xvii – Inspecting Tissue

Source: IPAS, 1993
Step 18
Decontaminate all the instruments by placing them in 0.5% chlorine solution for 10 minutes.

Step 19
Place contaminated disposable objects (cotton, gauze, etc.) in a properly marked plastic bag for disposal.

Step 20
Immerse both gloved hands in decontamination solution, then remove the gloves and discard them.

Step 21
Apply a vulvovaginal pad or cotton wool to the patient.

Step 22
Wash hands thoroughly in water and soap.

Step 23
Dry hands with a clean towel or cloth.

MANAGEMENT OF THERAPEUTIC ABORTION IN SECOND TRIMESTER

For treatment of middle to late second trimester incomplete abortion, intravenous oxytocin, sharp curettage (D&C) or dilatation and evacuation (D&E) by vacuum aspiration of the uterine cavity are the available methods. In the second trimester, the risks are higher for increased blood loss or uterine perforation resulting from treatment. Therefore treatment of incomplete abortion in the middle to late second trimester must be done by an experienced clinician. In addition, i.v. fluids, special equipment and the facilities to perform abdominal surgery must be available to manage possible complications. Dilatation and evacuation, when combined with the use of a sponge or ring forceps for manual removal of retained POC, is the preferred method when a specially trained physician is available.

Intravenous oxytocin is the most commonly available medication which causes contraction of the uterus (uterotonic agent). Intravenous oxytocin, 20 units in 500ml Ringers Lactate (or equivalent solution) over 4 hours can sometimes be used to safely complete expulsion of retained POC for completeness. If there is infection or if the incomplete abortion has been in process for several days (as is usually the case in most settings), the placenta may not be easily expelled with oxytocic medications alone, therefore dilatation and curettage is the preferred method.

PERFORMING SHARP CURETTAGE (DILATATION & CURETTAGE)

The following 16 steps outline the procedure for evacuating the uterus using dilatation and sharp curettage.

Step 1
Patient empties her bladder before the procedure.

Step 2
Confirm size and position of the uterus by bimanual pelvic examination.

Step 3
Check to ensure that you have all the necessary equipment and instruments needed to perform a sharp curettage, including different sizes of curettes, speculum, tenaculum/ring forceps and syringe for administering required medications.

Step 4
Depending on the patient's need, administer pain control. Give her a general anaesthetic, sedation with or without general analgesia, or local anaesthesia (paracervical block).

Step 5
Place patient in lithotomy position.

Step 6
Introduce a vaginal speculum. Check for genital tears and POCs. If present remove POCs by using sponge forceps. Thoroughly apply antiseptic solution three times to the cervix and vaginal walls using a sponge forceps with gauze or cotton.

Step 7
Identify the anterior lip of the cervix and take hold of it with the tenaculum, ring, or toiseullum forceps. If paracervical block is to be used, inject the cervix at 3, 5, 7,
Step 8
Carefully insert the uterine sound to assess the length and direction of the uterus. Keep in mind that when sepsis is present the funus may be soft and easily perforated. The length and direction of the uterus will help you judge which size curette to use. Further dilation of the cervix is rarely necessary in incomplete abortion. If it is necessary, progressively dilate the cervix with dilators.

Step 9
Gently curette each wall and angle of the uterus. A gritty sensation indicates that the procedure is complete. All products obtained should be sent for histopathological examination, if required for diagnosis.

Step 10
Check for completeness of the procedure by making sure no more POCs are obtained on curetting.

Step 11
Check for undue vaginal bleeding.

Step 12
Assess uterine contraction by bimanual examination.

Step 13
Remove the instruments used – the speculum, the tenaculum and curette - and put them into decontamination solution. Place contaminated disposable objects (cotton, gauze, etc.) in a properly marked plastic bag for disposal.

Step 14
Apply a vulva pad or cotton wool. Dip the fingers of both gloved hands into decontaminated solution, remove gloves and discard.

Step 15
Wash hands with water and soap.
POST EVACUATION CARE

As part of post-evacuation care, the provider should:

- Monitor the patient’s recovery, recording all vital signs, i.e. temperature, pulse rate and volume, blood pressure, and respiration. This should be done before she leaves the treatment table and over a period of one to two hours later, until she is fully awake and conscious.

- Allow the patient to rest comfortably in a room where her recovery can be monitored and documented.

- Continue treatment which may have been started earlier, e.g. i.v. fluids, antibiotics, oxytocics, etc.

- Check for severe vaginal bleeding.

- Check level of consciousness, especially for those patients given sedatives, analgesics and/or anaesthetics.

- Check degree of pallor and whether pallor is worsening.

- Check for persistent or worsening abdominal pains.

This period also allows for post-abortion family planning counseling and service provision. After the patient has recovered, provided she shows no signs of complications, the provider can send her home with appropriate instructions. The patient should come back after 2 weeks for review.

Signs of normal recovery are:

- Some uterine cramping over the next few days which may be eased by mild analgesics.

- Some spotting or bleeding which should not exceed a normal menstrual period. A normal menstrual period which should occur within 4 to 8 weeks.

In addition, the patient should be given instructions for taking medicines and know that she should not have sexual intercourse or put anything into the vagina (no douching, no tampons) until after the bleeding stops (5 to 7 days)

Her fertility can return in less than 2 weeks after the procedure, so she should have contraceptive counseling and begin using a method immediately if another pregnancy is not wanted.

She should also know what to do for emergency care if complications occur. The warning signs and symptoms requiring immediate emergency attention include:

- Prolonged cramping (more than a few days)
- Prolonged bleeding (more than 2 weeks)
- Bleeding more than normal menstrual bleeding
- Severe or increased pain
- Fever, chills or malaise
- Fainting (syncope)

Finally, the patient should obtain answers to questions she may have, including where to go for other reproductive health services. The date for her follow-up visit should be set at 6 weeks post evacuation.
Chapter 6

MANAGEMENT OF COMPLICATIONS AND PROBLEMS ARISING DURING MVA

1. Technical problems

In most MVA procedures, the syringe vacuum remains constant until the syringe is approximately 90% full. However, a decrease in vacuum may occur before the procedure is complete, if the cannula is blocked or withdrawn prematurely.

Syringe full

If the syringe is full, close the pinch valve of the syringe.

Disconnect the syringe from the cannula in place inside the uterus. (Do not push the plunger when disconnecting the syringe)

Empty the syringe into a container for inspection by opening the pinch valve and pushing the plunger into the barrel. (be careful not to splash the contents of the syringe on hand during the aspirations and switch syringes if one becomes full.)

Re-establish a vacuum in the syringe and cannula, reconnect it to the cannula and resume the aspirations and switch syringes if one becomes full.

Cannula withdrawn prematurely

If the opening of the cannula is pulled into the vaginal canal with the valve still open, the vacuum will be lost. To correct this:

Remove the syringe and cannula, taking care not to contaminate the cannula through contact with the vaginal walls or other non-sterile surfaces.

Re-connect the syringe, release the valve and continue aspiration.

Close the pinch valve of the syringe.

Detach the syringe from the cannula, empty the syringe, then re-establish the vacuum in the syringe (see above, Syringe Full)

Re-insert the cannula if it has not been contaminated. (If contamination has occurred, insert another sterile or high-level disinfected cannula.

Cannula clogged

If no tissue or bubbles are flowing into the syringe, the cannula may be clogged:

Close the pinch valve of the syringe.

Remove the syringe and cannula, taking care not to contaminate the cannula through contact with vaginal walls or other non-sterile surfaces.

Remove the material from the opening in the cannula using a sterile or high level disinfected forceps or sponge, without contaminating the cannula. If contamination occurs, use another sterile or high disinfected cannula.

Re-insert the cannula, attach a prepared syringe and release the pinch valve.

Note: Never try to unplug the cannula by pushing the plunger back into the barrel with the cannula tip still in the uterus.

Syringe does not hold vacuum

If the syringe does not seem to hold a vacuum, try lubricating the plunger and barrel with a drop of silicone. If this does not work, replace the O-ring. If the syringe still does not hold a vacuum, discard it and use another syringe.

2. Procedural problems

Procedural problems occurring during a MVA procedure are infrequent. Most are not serious, are related to the inexperience of the provider and are easily corrected.

Less than expected tissue

The most common procedural problem is obtaining less than expected tissue. Tissue that is inadequate in quantity or contains no definite POC may indicate:

- All POC passed before the MVA
- The vaginal bleeding was not due to pregnancy or
- A possible ectopic pregnancy
Incomplete Evacuation

Using a cannula that is too small or stopping the procedure too soon can result in retained tissue, subsequent hemorrhage, infection and continued pain and cramping. Careful observation for the signs of completion and tissue examination to identify the POC are the best ways to ensure complete evacuation. Incomplete evacuation can be treated by repeating the evacuation.

All POC Passed Before the MVA

Further evacuation is not necessary unless the clinical findings suggest that the abortion is still incomplete if history of event is not adequate (persistent vaginal bleeding, fever, etc)

3. Other problems

Vaginal Bleeding not due to pregnancy

Women of reproductive age may have regular periods (i.e missed or skipped periods) followed by vaginal bleeding due to:

- Progesterone breakthrough bleeding with use of progestin-only contraceptive methods (i.e injectables, Norplant implants or oral contraceptive pills)
- Uterine fibroids (benign smooth muscle tumors that grow in the wall of the uterus.
- Oestrogen breakthrough bleeding (anovulation)

Ectopic Pregnancy

Delay in treatment of ectopic pregnancy is particularly dangerous. The risk of an ectopic pregnancy is greater if the patient has a history of any of the following:

- Previous ectopic pregnancy
- Pelvic pain
- IUD or progestin-only contraceptive use

If ectopic pregnancy is suspected, check again for the signs of ectopic pregnancy and quickly prepare the woman for referral if surgery (minilaparotomy or laparoscopy) is not available. Rupture of an ectopic pregnancy is a real and life threatening possibility. If this happens, death can be prevented only by stopping the hemorrhage through immediate surgical removal of the ectopic pregnancy, stopping bleeding and replacing blood lost, if required.

Postabortal Syndrome (Acute Haematometra)

This condition occurs when the blood flow from the uterus is blocked, thus creating continued intrauterine bleeding, uterine distention, severe cramping and fainting (i.e vagal syncope), usually within a few hours after completion of the procedure. Late postabortal syndrome can also occur during the 3 days following the procedure.

The uterus will be larger than before the procedure and extremely tender on examination. This condition is treated by re-evacuating the uterus and administering oxytocics or massaging the uterus to keep it contracted.

Fainting (Vagal Reaction or Neurogenic Shock)

Fainting is most likely to occur during forceful cervical dilation or vigorous scraping of the uterine cavity, both of which cause severe pain and should be avoided. Due to stimulation of the vagus nerve, the heart rate and respiration slow down, leading to fainting (syncope). This condition usually lasts only a few seconds to minutes, provided the cause of pain is stopped by:

- Stopping the procedure immediately.
- Maintaining an open airway.
- Turning the patient's head and shoulder to the side to prevent aspiration if she vomits.
- Raising the patient's legs.

If recovery is not immediate:

- Ventilate the patient with an Ambu bag using oxygen, if available.
- Start an i.v. with a large bore (16-18 gauge) needle using either isotonic saline or Ringer's lactate solution
- Request assistance to check for the vital signs and monitor her recovery

**COMPLICATIONS**

Manual vacuum aspiration for treatment of abortion is a procedure that involves minimal trauma to the uterus and cervix. Complications are rare with MVA procedure on uterine sizes of less than 12 weeks LMP, particularly when performed by trained providers. Risks with MVA are significantly lower than those with sharp curettage procedures and full-term delivery.

Complications that may be seen during or after an MVA procedure are listed in Table 5. The risks of complications increase with greater uterine size, although all complications are rare. Some of these conditions can lead to secondary infertility, serious injury or death. Providers of MVA procedures should also be aware that a vagal reaction (fainting) may occur.

**Table 10: Possible complications in women undergoing MVA procedures**

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Signs and symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incomplete evacuation Retained tissue</td>
<td>Vaginal bleeding; uterus smaller than expected; less tissue than expected; abdominal pain; signs of infection</td>
</tr>
<tr>
<td>Cervical or abdominal injury Uterine perforation</td>
<td>Torn or lacerated cervix; heavy vaginal bleeding; vaginal bleeding after evacuation; sudden excessive pain; rapid heart rate; falling blood pressure; instruments pass further than expected; fat, bowel or omentum in aspirate</td>
</tr>
<tr>
<td>Uterine atony</td>
<td>Vaginal bleeding; large soft uterus</td>
</tr>
<tr>
<td>Pelvic infection</td>
<td>Fever chills; foul-smelling discharge; lower abdominal pain; prolonged vaginal bleeding; uterin tenderness</td>
</tr>
<tr>
<td>Failed abortion</td>
<td>Positive pregnancy test; continued signs of pregnancy; no POC upon tissue inspection</td>
</tr>
</tbody>
</table>

**Diagnosis** | **Signs and symptoms**
--- | ---
Medication-related reaction | Respiratory distress; rash; swollen face; metallic taste; ringing in ears; disorientation; seizures; slurred speech
Acute haematometra | Hard, engorge, blood-filled uterus hours/days after procedure; pelvic pain; scant vaginal bleeding
Disseminated intravascular coagulation | Inability of blood to clot; serosanguinous bleeding
Asherman's Syndrome | Less tissue than expected; difficult dilation and cannula insertion

**Shock, Severe Vaginal Bleeding and Post MVA Infection**

Treatment of severe vaginal bleeding depends on the cause and severity of haemorrhage, and may include repeat evacuation, oxytocin (i.m. or i.v.), uterine massage, suturing tears, intravenous fluids, transfusion or surgery.

**Air Embolism**

This is rare but could happen if the plunger of the syringe were pushed forward while the cannula was still in the uterine cavity. Treatment is directed to supporting respiration and circulation.
Chapter 7

PROCESSING MVA EQUIPMENT AND OTHER ITEMS

Instrument processing is the removal of micro organisms, to make instruments safe for use on patients. Universal precautions for infection prevention should always be followed.

The four basic steps for processing MVA equipment and other instruments are:

- Decontamination
- Cleaning
- Sterilization or high level disinfection
- Storage and re-assembly

Personnel should wear gloves while decontaminating and cleaning used instruments. Inexpensive rubber or vinyl household (utility) gloves work well for this.

Decontamination

The following account relates to cleaning of the MVA Plus™ aspirator. However general principles apply to the all other MVA double-valve and single-valve aspirators. All MVA instruments for re-use should be kept wet in a disinfectant such as 0.5% chlorine solution until cleaning; it may be impossible to remove all contaminants if left to dry. All items including surgical gloves should be decontaminated immediately after use to make them safer for staff to handle and clean. Soak all instruments, including cannulae, the MVA syringe and metal or plastic cervical dilators (if used) in a 0.5% chlorine solution for 10 minutes before cleaning. This step should follow immediately after the MVA procedure and is best accomplished by having a plastic container filled with chlorine solution next to the treatment table. Draw the solution through the cannula into the MVA syringe, and then place the syringe and cannulae, other soiled instruments and gloves in the chlorine solution. For hypodermic needles and syringes, fill assembled needle and syringe with 0.5% chlorine solution prior to soaking. Allow all items to soak for 10 minutes before removing them for cleaning.

The chlorine solution should be changed daily, or more frequently if visibly contaminated, in order to be effective.

After decontamination, rinse with clean, cool water to help prevent corrosion of metal instruments, or immediately take the instruments to be cleaned. Rinse hypodermic syringes and needles by flushing (3 times) with clean water.

Surfaces such as examination or procedure tables, which might have come in contact with body fluids, should be decontaminated. Wiping with a suitable disinfectant after each patient, when visibly contaminated or at least daily, is an ideal inexpensive way to decontaminate large surfaces.

Cleaning

After decontamination, all instruments including the syringe and cannulae must be washed thoroughly in lukewarm water with detergents and liquid soap to remove all organic material.

Thorough cleaning is the most effective way to reduce the number of micro-organisms on soiled instruments.

Hot water should not be used for cleaning because it can coagulate protein, such as blood, making it hard to remove. Use of detergent or liquid soap is important for effective cleaning since water alone will not remove protein or oils. Hand soap is not recommended as it can leave a residue which is difficult to remove. Liquid detergent (soap) is preferable because it mixes more easily with cold water than do powdered detergents.

Utility gloves should always be worn when cleaning instruments. Torn or damaged gloves should not be used. At the end of the day, the gloves must be washed and left to dry for re-use, if applicable.

Eye wear is suggested to protect against accidental splashes. As an added precaution, instruments may be cleaned under the surface of the water to prevent material from becoming airborne through splashing.

To flush out tissue from the tip of cannulae, soapy water is drawn into the cannula with the syringe and expelled several times. If material remains, the cannula is swished back and forth vigorously in water, taking care not to splash yourself or others. A cotton-tipped probe or soft cloth may also be used to flush out trapped material. Brushes or other small objects must not be used to remove matter; as they can scratch the inside of the cannula, creating crevices where micro-organisms can become trapped.

Take apart all instruments, including MVA aspirator and hypodermic syringes.

- Pull the cylinder out of the valve
- Disassemble the valve by pressing down on the cap release tabs and removing the cap. Then open the hinged valve by pulling open the claps and remove the valve liner.
Disengage the collar stop by sliding its sideways under the retaining clip or remove it completely.

Pull the plunger completely out of the cylinder.

Displace the O-ring by squeezing its side and rolling it down into the groove below.

Do not attempt to remove the base from Imap EasyGrip cannulae.

Wash all instruments thoroughly in warm water and detergent, taking care to remove all traces of blood or tissue.

Ascertain that the apertures are clear of visible material.

If unable to remove all visible matter from inside the cannulae, discard and replace it.

Clean the cylinder, plunger and valve pieces using a soft bristle brush. Do not use sharp objects as these can cause damage, preventing the instruments from maintaining vacuum.

Clean each piece until, upon careful inspection, no tissue or blood is visible. Holding the instrument parts up to a light source can help with this inspection.

Rinse each part thoroughly in clean water to remove any detergent residue, which can interfere with chemical disinfection. Air dry or if desired dry with a clean towel. (We items should not be placed in chemical disinfectants because the water may dilute the chemicals.) Drying is not necessary, however, for instruments including, plastic dilators (Denniston) and cannula, that are to be boiled.

Following cleaning, cannulae must either be sterilized or HLD before reuse.

**Processing MVA Syringes**

The syringes serve only as the source of vacuum and container for blood and tissue, and do not come into contact with the patient. Decontamination and cleaning are therefore sufficient for processing the aspirator and can be sterilized or high level disinfected if desired. If HLD or sterilization of the double valve syringes is required by an institution's protocol, use chemical agents. Do not autoclave, dry heat sterilize or high level disinfect the syringe by boiling because the valve assembly will crack.

**Sterilization or High Level Disinfection**

Sterilization is the safest and most effective method for processing instruments that come into contact with the blood and tissue beneath the skin or tissue which are normally sterile. When sterilization is either unavailable or not suitable, HLD is the only acceptable alternative. For methods, the preparatory steps and post-procedural handling of instruments and other items must be done properly in order to achieve the desired outcome.

The process of sterilization kills all micro-organisms, including bacterial endospores, such as the bacteria that cause tetanus and gas gangrene (*Clostridium*). The process of HLD destroys all micro-organisms including HBV and HIV, but does not reliably kill bacterial endospores.

The exact method will depend on the facility's capabilities for sterilization or HLD and the type of instruments involved. Steam (autoclaving) or dry heat sterilization should not be used on either the cannulae or MVA syringe of the single valve and double valve MVA kits: the cannulae will melt and syringe valve assembly will crack. By contrast, the Denniston plastic dilators can be autoclaved (steam sterilized) repeatedly, but not dry heat sterilized.

Recommended operating conditions for sterilization or HLD or instruments and other items are listed below.

**Sterilization**

To steam sterilize (autoclave) metal and glass instruments and gloves only:

- **Temperature:** 121°C (250°F)
- **Pressure:** 106 kPa (15lb/square inch)
- **Time:** 20 minutes (30 minutes for wrapped instruments)

- Place instruments into the unit in a single layer.
- Because cannulae, particularly the smaller sizes, may curve in steam autoclaves, package them by wrapping in paper or linen. Arrange the cannulae to permit drainage without obstructing their apertures or the opening at the base end.
- The collar stop must be completely removed, rather than held with retaining clip, in order for the aspirator to achieve sterilization using a steam autoclave.
- Process according to the autoclave manufacturer's instructions; cool before using.
- Do not use other autoclave settings. Specifically, do not use higher settings for shorter periods of time (known as "flash autoclaving").

To dry heat sterilize (dry heat oven) metal and glass instruments only:

- **Temperature:** 160°C (320°F)
- **Time:** 2 hours
- **Temperature:** 170°C (340°F)
- **Time:** 1 hour

To be effective, sterilization must be carried out for the stated length of time.
Remember: Do not dry heat sterilize the cannulae or MVA syringe
Chemical sterilants should be used to sterilize cannulae and can be used for instruments as well.

Sterilization or HLD in a 2% glutaraldehyde solution, such as Cidex
Completely immerse the clean instruments and soak them for 10 hours to sterilize them or for 20 minutes to HLD them.
- Remove the instruments from the solution with sterile or HLD gloves or forceps, as appropriate.
- Rinse all parts with sterile water, do not use tap water.
- Dry with a sterile cloth, if desired.

HLD in a 0.5% chlorine solution
- Completely immerse the clean instruments and soak them for 20 minutes in a non metal container.
- Rinse all parts with sterile or boiled water.
- Dry with a sterile cloth, if desired.

HLD by boiling
Place instruments in boiling water for 20 minutes.
- Remove from the boiler with sterile of HLD gloves or forceps, as appropriate.
- Dry with a sterile cloth if desired.

STORAGE AND RE-ASSEMBLY
Once cannulae have been sterilized or HLD, this status must be maintained until they are used. Cannulae should be kept in dry, sterile or HLD containers with tight-fitting lids and protected from dust and other contaminants. Ideally, cannulae that have been processed by wet methods like glutaraldehyde, chlorine or boiling should be processed daily.

Storage of EasyGrip® cannulae
- Keep only a small number of cannulae in each container.
- Reprocess if not used within two days.
- Use sterile or HLD forceps to remove cannulae by their base ends.

- Avoid touching other cannulae in the container.
- Clean and process the transfer forceps and storage container every day or two.
- The aspirator should be stored assembled, lubricated and ready for use.

Reassembly of MVA Plus ™ Aspirator
- Reposition the O-ring.
- Place one drop of silicone (or glycerol, liquid soap or other non-petroleum-based lubricant) on the O-ring, spreading it with a fingertip.
- Reassemble the valve by putting the liner in place, closing the valve and snapping the cap into place.
- Reassemble the aspirator and lubricate it by pushing the plunger in and out several times.
- Keep in dry container with a tight-fitting lid, protected from dust and other contaminants.
- Check the vacuum before each use.
Chapter 8
MANAGEMENT OF ABORTION COMPLICATIONS

If incomplete abortion is a possible diagnosis, it is important to identify any life-threatening complications immediately. If any are present, it is important to identify these and stabilize the patient before proceeding to evacuate the uterus or refer to a higher level of care.

Post Abortal Sepsis

In the case of septic incomplete abortion, providers should follow the general steps outlined for the evacuation of the uterus. Note, however, that in the presence of sepsis the fundus may be soft and easily perforated. Therefore, the use of MVA is preferable over sharp curetage. In the case of incomplete abortion, sepsis is often associated with retained POCs, genital and/or abdominal injuries.

Suspect infection in abortion patients with the following symptoms:

Signs
- Tenderness of the uterus and adnexa during pelvic examination or pain with cervical motion,
- Fever, chills or sweats,
- Foul-smelling vaginal or cervical discharge

Symptoms
- Prolonged bleeding (>8 days) or spotting
- Pain in the abdomen or pelvis
- General discomfort (flu-like symptoms)
- History of previous unsafe abortion or miscarriage

The infection may be localized or it may be generalized as peritonitis or sepsicaemia. If not treated promptly, sepsis can lead to shock, death or long-term morbidity, such as chronic pelvic pain, infertility and future risk of ectopic gestation. Patients with septic abortion require antibiotics, laboratory investigations and possible hospital admission.

The aims of treatment are:
- Resuscitate/stabilize the patient
- Control and prevent the spread of the infection

To manage sepsis

- Assess the condition and its extent
- Resuscitate/stabilize the patient
- Determine the presence of other conditions
- Determine possible causative factors
- Take appropriate laboratory test, such as pus swabs, blood for Hb, PCV and sensitivity.
- Administer i.v. antibiotics, benzylpenicillin 2.5 megaunits, q.i.d. for 3 days, chloramphenicol 500mg q.i.d. for 3 days, metronidazole 500mg t.d.s. for 3 days
- Give other treatment, such as blood transfusion if needed
- Observe for response to the treatment, checking blood pressure, pulse rate, respiration, temperature, general condition, etc
- Plan for other as necessary, such as laparotomy, etc.

Administration of i.v. antibiotics is only at the secondary level of healthcare institution and up. After 3 days of antibiotic treatment, selection of antibiotics is after establishing drug sensitivity.

Table 11: Management of Sepsis by level of Health Care

<table>
<thead>
<tr>
<th>Level of Health Care</th>
<th>Action to be taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Level</td>
<td>• Refer promptly</td>
</tr>
<tr>
<td>Primary Level</td>
<td>• Resuscitate and stabilize the patient</td>
</tr>
<tr>
<td>Rural Health Centre</td>
<td>• Check Spencer Hb</td>
</tr>
<tr>
<td>Primary Health Care</td>
<td>• Give antibiotics</td>
</tr>
<tr>
<td></td>
<td>• Give pain relief</td>
</tr>
<tr>
<td></td>
<td>• Refer first or second referral level</td>
</tr>
<tr>
<td>Secondary Level</td>
<td>• Same action as for the primary level plus:</td>
</tr>
<tr>
<td>District / Mission/Private/Hospital</td>
<td>• Evacuate the uterus</td>
</tr>
<tr>
<td></td>
<td>• Treat other conditions</td>
</tr>
<tr>
<td></td>
<td>• Perform laparotomy as needed</td>
</tr>
<tr>
<td></td>
<td>• Give other supportive treatment, such as blood transfusion as needed</td>
</tr>
<tr>
<td>Tertiary Level</td>
<td>• Same action as the secondary level plus:</td>
</tr>
<tr>
<td>Provincial or Central Hospitals</td>
<td>• Give any other necessary treatment</td>
</tr>
</tbody>
</table>
2. Moderate to severe vaginal bleeding
If the patient has any of the following signs, she has severe vaginal bleeding:

**Signs**
- Pallor-inner eyelid, palms and around the mouth

**Symptoms**
- Heavy, bright red vaginal bleeding with or without clots
- Blood soaked pads, twells or clothing

**Management**
- Ensure that the airway is open
- Check vital signs
- Elevate feet
- Check Hb
- General health status
- Oxygen: 6-8 litres per minute
- i.v. fluids: Ringer's lactate one litre thirty minutes, first litre over 30 minutes then subsequent litres as per patient's response (BP, pulse) no fluids by mouth
- Medication: antibiotics i.v. or i.m.
- Tetanus toxoid and antitoxin if exposed
- Laboratory investigations: draw blood for Hb, type and cross match
- Additional: Give blood if Hb is less than 5g/100ml
- Identify cause of bleeding:
  - If incomplete abortion-evacuate uterus
  - If suspicion of intra-abdominal injury-assessment and laparotomy if required
  - If cervical or vaginal ear-analgesia and suture

---

**Table 12: Management of Moderate to Severe Vaginal Bleeding by level of Health Care**

<table>
<thead>
<tr>
<th>Level of Health Care</th>
<th>Action to be taken</th>
</tr>
</thead>
</table>
| Community Level | Referral as soon as possible
|                    | Ensure the patient is comfortable during referral. |
| Primary level Rural Health Centre | Ensure stabilization/resuscitation
|                    | Give i.v. fluids rapidly to restore circulation:
|                    | Primary Health Clinic 1 litre saline or similar fluids in 10-15 minutes; oxytocics to ensure uterine contraction to reduce blood loss.
|                    | Make sure airway is open. If oxygen is available, give 6-8 litres oxygen per minute by mask of nasal cannula.
|                    | Check Hb using Spencer Haemoglobineter. Assess patient’s condition for complications and establish the cause.
|                    | Provide pain relief and antibiotics if indicated
|                    | Perform MVA. If cervical os is closed, refer as soon as possible to rule out ectopic pregnancy. 2nd trimester perform D & C
|                    | Refer if necessary |
| Secondary Level District/Mission Hosp. | Action the same as for primary level plus:
|                    | Perform blood group cross-match for transfusion.
|                    | Blood transfusion should only be considered if the condition worsens, e.g., Hb<5g/dl or PCV<15% or haematuria result of haemorrhage. Provide other treatment as necessary, such as laparotomy.
|                    | Monitor the condition and progress, e.g., urine output.
|                    | Refer if necessary |
| Tertiary Level Provincial/Central Hospital | Action the same as for primary level plus:
|                    | Provide other specialized care, e.g., dialysis, reconstructive surgery etc. |

---

3. Intra-abdominal Injury
If the patient has any of the signs with any symptoms below, she is probably suffering from an intra-abdominal injury. The differential diagnosis is an ectopic pregnancy or appendicitis

**Signs**
- Distended abdomen
- Decreased bowel sounds
- Abdomen tense and hard
- Rebound tenderness
Chapter 9

USE OF MEDICATIONS FOR PAIN

Types of Medication

There are three categories of medications for management of pain: anaesthetics, analgesics and sedatives. The effects of each type of medication are as follows:

Anaesthetics (local, regional and general) numb all physical sensation.

Local anaesthetics block pain in a small area of the body by injection of the drug in the soft tissue surrounding the nerve endings. Examples include lidocaine and chloropropam.

Regional anaesthetics (spinal or epidural) allow the patient to remain awake but block all sensation below a particular point in the spinal cord. Examples include lidocaine and chloroprocaine.

General anaesthetics cause the patient to become completely unconscious. Examples include halothane and ether.

Non-narcotic analgesics reduce the sensation of pain in the spinal cord and brain. Narcotics, on the other hand, are analgesics cause stupor as well as block the transmission of pain. Analgesics can be for mild to severe pain and may be administered orally or by intramuscular (i.m.) or intravenous (i.v.) injection. Examples include morphine, pethidine and paracetamol.

Sedatives depress the function of the central nervous system but do not actually reduce pain. They are used to reduce anxiety, produce calm, relax muscles and promote sleep. Examples include Diazepam and Midazolam.

Analgesia

Analgesia can cause both cervical and pelvic discomfort associated with treatment of incomplete abortion using MVA. Analgesics are used in combination with anaesthesia to reduce pain. Because paracervical block does not reach the major nerves of the uterus which are high in the pelvis, it does not affect the pain of the uterine cramping; analgesics reduce this pain. The most appropriate analgesics and route of administration to use will depend upon the severity of the pain anticipated and the facilities available. In many situations oral or i.m. administration is appropriate; however, i.v. administration may be more appropriate, particularly if the patient is on i.v. fluids because of an existing...
condition, or is experiencing significant pain. Intravenous administration requires closer monitoring for adverse reactions than do other routes.

Oral analgesics such as ibuprofen or Paracetamol (with or without codeine) are appropriate when mild to moderate pain is expected. The MVA procedure should not be started until the drug has taken effect. For orally administered drugs that takes at least 30 to 60 minutes.

A non-steroidal anti-inflammatory drug (NSAID) such as ibuprofen may be effective in alleviating the sensation of uterine spasms. NSAIDs have been shown to reduce the sensation of pain during and immediately after the MVA procedure. NSAIDs may be combined with narcotics to reduce an additive analgesics effect, thus allowing for the use of lower dose of narcotics to achieve similar alleviation of pain.

Narcotics such as Pethidine or codeine are helpful for moderate to severe pain. When a patient is given a narcotic, however, her recovery must be carefully monitored because of the risk of respiratory depression. In addition clinicians should be mindful of the heightened effects of narcotics on chronically ill patients or those who have suffered significant blood loss.

If difficult medical dilation is anticipated, parenteral analgesia may be indicated. Other agents such as local anaesthesia or sedatives may be used in combination with i.v. and i.m. analgesia.

An i.m. injection should be given approximately 30 minutes before the procedure to allow the drug to take effect; i.v. infusion is effective almost immediately. Trained staff and emergency backup should be available with use of i.v. or i.m. analgesia.

Complications of Analgesia

Non-narcotic analgesics in single doses rarely produce complications. Narcotic analgesics, can slow or even halt respiration. If the patient experiences severe respiratory depression, the clinician must assist her breathing with a ventilator (Ambu) bag and oxygen. (Both Pethidine and Fentanyl can be reversed with Naloxone; 0.4mg i.v.)

Table 14: Analgesic Drugs for MVA

<table>
<thead>
<tr>
<th>Type of Analgesia</th>
<th>Drug Name</th>
<th>Usual dose</th>
<th>Duration of Effect</th>
<th>Common Side Effects</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narcotic</td>
<td>Pethidine</td>
<td>50-100mg IM 30 minutes before procedure 25-50mg IV</td>
<td>2 hrs</td>
<td>Drowsiness, light headedness, weakness, opiate, dry mouth</td>
<td>Reversal with Naloxone 0.4mg iv.</td>
</tr>
<tr>
<td>Narcotic</td>
<td>Subliminate (Fentanyl)</td>
<td>0.05 - 0.06mg i.v</td>
<td>30 - 60min</td>
<td>Drowsiness, light headedness, weakness, opiate, dry mouth</td>
<td>Reversal with Naloxone as above</td>
</tr>
<tr>
<td>Non-Narcotic</td>
<td>Paracetamol with codeine</td>
<td>300-30 orally 1 hour before procedure</td>
<td>3 to 6 hours</td>
<td>Drowsiness, light headedness, weakness, opiate, dry mouth</td>
<td></td>
</tr>
<tr>
<td>Non-Narcotic</td>
<td>(ibuprofen)</td>
<td>400 - 800mg orally, 30-60min, before procedure</td>
<td>Up to 5 hours</td>
<td>Possible gastrointestinal upset</td>
<td>Antiemetic - glasien effect</td>
</tr>
<tr>
<td>Non-Narcotic</td>
<td>Paracetamol</td>
<td>150 - 1000mg orally 30-60 minutes before procedure</td>
<td>Up to 4 hours</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All analgesic drugs given intravenously should be administered slowly and in small doses. They should be given just before starting the procedure, keeping in mind their effects (respiratory depression). Repeated addition of small doses is a safe way to administer these potent drugs and obtain their important effects without encountering problematic side effects.

Sedatives

Light to moderate doses of sedatives, such as diazepam, will induce relaxation, reduce fear and decrease memory of the procedure. They are useful when a woman is having severe pain or anxiety but is in otherwise stable physical condition. Midazolam also alters recent memory (has an amnestic effect) which can be beneficial.

Sedatives can be administered by oral or parenteral routes. It is important not to over sedate the patient: heavy sedation can prolong recovery and depress the patient's respiratory function. When sedatives, especially midazolam, are administered intravenously it is important to give small doses over several minutes, while closely monitoring the patient's reaction.

Both diazepam and midazolam are effective sedatives. Midazolam has a quicker onset and shorter duration: therefore it should be given just before the procedure, as long as the antagonist "reverser" drug (flumazenil) is available for emergency
Complications of Sedatives

Complications from sedatives such as diazepam and midazolam include respiratory depression. When combined with narcotics, respiratory depression may occur with low dosages. These drugs can be reversed with 0.2mg flumazenil (Mazicon) given intravenously. Repeat in 1 minute if necessary. Respiratory support (oxygen, airway and resuscitation equipment) must be available and provided when necessary.

Table 15: Sedatives for Use with Analgesics and/or Anaesthesia in MVA

<table>
<thead>
<tr>
<th>Type of Sedative</th>
<th>Drug name (Generic)</th>
<th>Usual Dose &amp; timing</th>
<th>Duration of effect</th>
<th>Common Side Effects</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Nervous system depressant</td>
<td>Valium (Diazepam)</td>
<td>5-10mg</td>
<td>2 hours</td>
<td>Blurred vision, numbness of hands &amp; feet, headache, nausea, dizziness, redness or pain at injection site.</td>
<td>Reversal accomplished by flumazenil (Mazicon or reversed) 0.2mg i.v. Repeat in 1 minute if necessary.</td>
</tr>
<tr>
<td>benzodiazepines</td>
<td></td>
<td>orally 30 to 60 min before procedure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Midazolam</td>
<td>0.5 - 1.0 mg i.v.</td>
<td>30 - 60 min</td>
<td>Blurred vision, dizziness, headache, nausea, redness or pain at injection site, numbness/tingling/pain of hands and feet.</td>
<td>Same as above. Midazolam has moderate amnestic effect</td>
</tr>
</tbody>
</table>

Chapter 10
POST ABDUCTION CONTRACEPTION

A woman's fertility returns almost immediately after an incomplete abortion, as early as 10 days if the pregnancy was less than 12 weeks. Therefore, she must consider whether she or not she wants to become pregnant again soon. In the case of spontaneous abortion, however, this may not be the best for her to make decisions that are permanent or long term. Counseling needs to be geared to a client's emotional and physical state. Full and informed choice is critical in the selection of any method and especially provider dependant methods (IUDs, injectables, implants and voluntary sterilization.)

Nearly all contraceptive methods may be used and can be started immediately unless there are major post abortion complications. Natural family planning is not recommended, however, until a regular menstrual pattern returns.

Barrier contraceptives, male and female condoms are strongly recommended to all sexually active women to prevent STIs and HIV infection. These may be encouraged for use in combination with other methods.

Every woman treated for incomplete abortion needs to know several facts before she leaves the facility. She should know that:

- The health care provider can help her obtain and use a family planning method of her choice.
- She can delay or prevent another pregnancy by using family planning services,
- She could become pregnant again right away.

The health worker should find out, which, if any, method she was using at the time of conceiving her index pregnancy and if there were any problems using it. Inquire whether she wants to use a method and if so, which one?

The health worker should provide information that is appropriate for the patient. In addition the health worker should help her obtain her preferred method and explain how the method works. Do not pressure her if she wants to get pregnant again soon, but do explain the possible consequences of very close conceptions. Make follow-up appointments or referrals for any other reproductive health needs.
Contraception after Post abortion Complications

Women who have been treated for post abortion complications may have medical conditions that affect the selection of a contraceptive method. Table 12 presents a number of elements that could be considered in the selection of a contraceptive method.

Accessibility of Family Planning Services

In selecting a Family Planning method, the provider has to consider the accessibility of Family Planning services in the woman’s community. If such services are difficult for the woman to access, she may prefer medium to long-term methods.

Provision of short-term methods to a woman who cannot easily obtain resupply of these methods will affect compliance.

A woman should be counselled on common side effects of the selected method and how to deal with the side effects.

**Table 16: Guidelines for Selection of Contraception by Method**

<table>
<thead>
<tr>
<th>Method</th>
<th>Timing After Incomplete Abortion</th>
<th>Advantages</th>
<th>Remarks</th>
</tr>
</thead>
</table>
| Non-Fitted Barriers             | May begin as soon as intercourse is resumed | - No method-related health risks  
- Intensive  
- Good interim method if initiation of another method must be postponed  
- No medical supervision required  
- Condoms (latex and vinyl) provide protection against GTIs and other STDs (HBV and HIV/AIDS)  
- Easy discontinued  
- Effective immediately | - Less effective than IUD or hormonal methods  
- Requires use with each episode of intercourse  
- Requires continued motivation  
- Resupply must be accessible and adequate  
- May interfere with intercourse | - Requires continued motivation and daily use  
- Resupply must be available |
| Fitted Barrier: Used with spermicides (diaphragm or cervical cap with foam or jelly) | Disparagm can be fitted immediately after first trimester incomplete abortion; after second trimester incomplete abortion, fitting should be delayed until uterus returns to pre-pregnancy size 4 to 8 weeks. Delay fitting cervical cap until bleeding has stopped and uterus has returned to pre-pregnancy size. | - No method-related health risks  
- Inexpensive  
- No medical supervision required  
- Some protection against GTIs and other STDs (HBV and HIV/AIDS)  
- Easily discontinued  
- Effective immediately | - Less effective than IUD or hormonal methods  
- Requires use with each episode of intercourse  
- Requires continued motivation  
- Resupply must be available  
- Associated with urinary tract infections in some users  
- Requires fitting by trained service provider |
| Oral Contraceptives (combined and progestin-only) | May begin pill use immediately, preferably on the day of treatment. | - Highly effective  
- Can be started immediately even if the infection is | Requires continued motivation and daily use  
Resupply must be available |
| Injectables (DMPA, NET-EN) | May be given immediately after complete abortion in the first or second trimester. | - Highly effective  
- Can be started immediately even if infection is present.  
- Can be provided by non-physician  
- Does not interfere with intercourse  
- Not user-dependent (except for injection every 2 or 3 months)  
No supplies needed by client | - May cause irregular bleeding, especially aneesorrhoea; excessive bleeding may occur in rare instances  
- Delayed return to fertility  
- Must receive injections every 2 or 3 months  
- Condoms recommended if at risk for GTIs and other STDs (HBV and HIV/AIDS) |
Table 16: Guidelines for Selection of Contraception by Method (continued)

<table>
<thead>
<tr>
<th>Method</th>
<th>Timing After Incomplete Abortion</th>
<th>Advantages</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female Voluntary Spontaneous Vaginal Delivery (VSD)</td>
<td>VSD after first trimester abortion is similar to an interval procedure; after a second trimester abortion, it is similar to a postpartum procedure.</td>
<td>• Permanent method</td>
<td>Adequate counseling and fully informed consent are required before VSD procedures; this is often not possible at the time of emergency care.</td>
</tr>
<tr>
<td></td>
<td>Technically, VSD procedures usually can be performed immediately after treatment of post abortion complications. Serious infection or severe bleeding is present.</td>
<td>• Most effective method</td>
<td>• Slight possibility of surgical complications.</td>
</tr>
<tr>
<td></td>
<td>Do not perform until infection is fully resolved (3 months) or injury healed.</td>
<td>• Once completed, no further action is required</td>
<td>• Requires trained staff and appropriate equipment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Does not interfere with intercourse.</td>
<td>• Condoms recommended if at risk for GTI’s and other STI’s (EBV and HIV/AIDS).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No change in sexual function.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No long-term side effects</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Immediately effective</td>
<td></td>
</tr>
<tr>
<td>Natural Family Planning</td>
<td>Not recommended for immediate post abortion use. The first evaluation after an abortion will be difficult to perform and the method is unreliable until after a regular menstrual pattern has returned.</td>
<td>• No cost associated with method</td>
<td>Unreliable immediately after abortion.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Alternative methods recommended until resumption of normal cycles.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Requires extensive instruction and counseling.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Condoms recommended if at risk for GTI’s and other STI’s (EBV and HIV/AIDS).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Requires continued motivation and a thorough understanding of how to use the method by the woman and her partner.</td>
</tr>
</tbody>
</table>

Adapted from: Blumenthal and McIntosh, 1995, Benson et al, 1992

Provider should be aware of the cost to a woman of a contraceptive method. High costs of services and contraceptives can prevent women from having access to contraceptives and influence their ability and willingness to use them.

Several factors need to be considered when assisting a woman to select a contraceptive method. Other than the medical considerations mentioned in Table 10, the health worker needs to assess the woman’s ability to make an informed decision. Table 11 gives counseling recommendations and rationales for various types of PAC patients.
### Table 17: Counseling Recommendation and Rationales for Various Types of PAC Patients (more than one may apply)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Recommendation</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does not want to be pregnant soon</td>
<td>Consider all temporary methods.</td>
<td>首it treatment for incomplete abortion.</td>
</tr>
<tr>
<td>in stressful or in pain</td>
<td>Consider all temporary methods. Do not encourage use of permanent methods at this time. Provide referral for continued contraceptive care.</td>
<td></td>
</tr>
<tr>
<td>Was using a contraceptive method when she became pregnant</td>
<td>Assess why contraception failed; what problems the woman might have; discuss methods that she will be able to use effectively. Make sure she understands how to use them correctly, get follow-up care and resupply, discontinuation use, and change methods.</td>
<td>Unacceptability or lack of access may have led to unwanted pregnancy.</td>
</tr>
<tr>
<td>Has stopped using a contraceptive method</td>
<td>Assess why she stopped using contraception, e.g., side effects, lack of access to supplies. Help the woman choose a method that she will be able to use effectively. Make sure she understands how to use them correctly, get follow-up care and resupply, discontinuation use, and change methods.</td>
<td>Unacceptability or lack of access may have led to unwanted pregnancy.</td>
</tr>
<tr>
<td>Has a partner who is unwilling to use contraception</td>
<td>The woman wishes, include her partner in counseling. If she wants to protect the woman's confidentiality, discuss methods that the woman can use without her partner's knowledge (e.g., injection). Do not recommend methods that the woman will not be able to use effectively.</td>
<td>In some instances involving the male condom or will lead to the use of and support for contraception. However, if the woman wants to involve a partner, her wishes should be respected.</td>
</tr>
<tr>
<td>Needs to become pregnant</td>
<td>Do not try to persuade her. Provide her with information or a referral if she needs other reproductive health services.</td>
<td>If woman has had repeated spontaneous abortions, she may need to be referred for infertility treatment.</td>
</tr>
<tr>
<td>Has multiple partners</td>
<td>Barter methods</td>
<td>Risk of HIV.</td>
</tr>
</tbody>
</table>

Adapted from Leonard and Ladipo, 1994

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### Chapter 11

**POST ABORTION REPRODUCTIVE HEALTH COUNSELLING**

Good counseling begins with respect for the patient. If the patient does not feel well, the provider should counsel her when she feels better. The provider should show concern for her feelings and experience and at all times observe privacy during counseling. With the woman's permission, the provider can involve the partner/spouse whenever possible.

The provider should inquire about the individual's needs and situation. Ask if her previous pregnancy was wanted and if she wants to become pregnant again and how soon. Ask whether she has used contraception.

The reproductive health counseling is a two-way process of communication. The health worker helps the client to identify her or his reproductive health needs and to make the most appropriate and informed health decisions.

Reproductive health counseling involves an exchange of information and ideas, discussions, and deliberations. Where possible, counseling should be extended to include relatives and friends, emphasizing their roles in offering support and comfort to the client.

There are two types of client counseling in the post abortion setting. First, crisis counseling deals with the client's immediate predicament and helps the client handle fears and anxieties for herself and for her social relations now and in the future. Second, general reproductive health counseling includes counseling on pregnancy, sexuality, and prevention of RTIs and STIs, and HIV, etc.

The objectives of post abortion reproductive health counseling are to help the woman:

- Overcome anxieties she may have and make adequate decision for the future
- Understand and explain circumstances that led her to her losing the pregnancy and what she should do in the future
- Understand the factors that led to the pregnancy and the unsafe abortion
- Understand the immediate and long-term steps to be undertaken to restore her health
- Learn that she can become pregnant again even before her next menses
- Understand that there are safe methods to delay subsequent pregnancies and prevent unwanted pregnancies; BN
- Know where and how to obtain pregnancy prevention services methods
- Use contraceptive method of her choice properly
- Identity where and from whom she can obtain moral and emotional support
- Understand other reproductive health needs
- Understand her risk of RTIs, STIs and HIV
- Understand how RTI, HIV can be prevented.

REFERENCES


UNFPA, 2000. Populi vol,27, No.2. September


Tang OS and Ho PC, 2001. Pilot study on the use of sublingual misoprostol for medical abortion. Contracept. 64 (315-317)


Tietjen, L., Cronin, W., McIntosh N, 1992. Infection Prevention for Family Planning Service Programs, JHPIEGO, Baltimore, MD.
ANNEX 1

Essential drugs and supplies for Emergency Post abortion Care

<table>
<thead>
<tr>
<th>Sedatives</th>
<th>Antiseptics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diazepam</td>
<td>Chlorhexidine, 4%</td>
</tr>
<tr>
<td>Hydromorphone</td>
<td>Hibitane</td>
</tr>
<tr>
<td>Lidocaine</td>
<td>Indazin preparations,</td>
</tr>
<tr>
<td></td>
<td>1-3% lidocaine (Betadine)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Anaesthetics, Local</th>
<th>Antiseptics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ketamine hydrochloride</td>
<td>Sodium hypochlorite 5-10% (commercial based solution) e.g. JK</td>
</tr>
<tr>
<td>Halothane</td>
<td>Formaldehyde, 8% (Formalin)</td>
</tr>
<tr>
<td>Thiopentone sodium</td>
<td>Glutaraldehyde, 2% (CMex)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analgesics</th>
<th>Disinfectants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetylsalicylic acid</td>
<td>Sodium hypochlorite 5-10%</td>
</tr>
<tr>
<td>Ibuprofen</td>
<td>(commercial based solution) e.g. JK</td>
</tr>
<tr>
<td>Pethidine (or suitable substitution)</td>
<td>Formaldehyde, 8% (Formalin)</td>
</tr>
<tr>
<td>Morphine</td>
<td>Glutaraldehyde, 2% (CMex)</td>
</tr>
<tr>
<td>General Anaesthetic</td>
<td></td>
</tr>
<tr>
<td>Ketamine hydrochloride</td>
<td></td>
</tr>
<tr>
<td>Halothane</td>
<td></td>
</tr>
<tr>
<td>Thiopentone sodium</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Broad Spectrum Antibiotics</th>
<th>Pain killers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ampicillin</td>
<td>Aspirin, paracetamol</td>
</tr>
<tr>
<td>Clonazepam</td>
<td></td>
</tr>
<tr>
<td>Metronidazole</td>
<td></td>
</tr>
<tr>
<td>Sulfamethoxazole</td>
<td></td>
</tr>
<tr>
<td>Trimepril</td>
<td></td>
</tr>
<tr>
<td>Cotrimoxazole</td>
<td></td>
</tr>
<tr>
<td>Doxycycline</td>
<td></td>
</tr>
<tr>
<td>Benzylpenicillin</td>
<td></td>
</tr>
<tr>
<td>Gentamycin</td>
<td></td>
</tr>
<tr>
<td>Other appropriate substitute</td>
<td>(combining antibiotics is recommended)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contraceptives</th>
<th>Blood products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral pills</td>
<td>Other</td>
</tr>
<tr>
<td>Injektibles</td>
<td>Atropine</td>
</tr>
<tr>
<td>Implants</td>
<td>Adrenalin</td>
</tr>
<tr>
<td>IUD</td>
<td></td>
</tr>
</tbody>
</table>

Barrier method: male and female condoms and diaphragm
### Instructions on how to use chemical sterilants

<table>
<thead>
<tr>
<th>Sterilizing Agent</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Solution</th>
<th>Minimum Time Required for Sterilization</th>
<th>Steps</th>
<th>Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde (5%)</td>
<td>Not easily activated by organic materials</td>
<td>Vapors toxic, skin irritation, respiratory irritant</td>
<td>Dilute 1 part commercial formaldehyde (35-40%) with four parts boiling water to make 5% solution</td>
<td>24 hours</td>
<td>Stain instruments completely, make sure containers interior, exterior, and exterior of instrument are sterile; wash with sterile water; air dry</td>
<td>Use only in well ventilated area; dilute according to manufacturer's instructions; store solution in tightly closed container; air dry</td>
</tr>
</tbody>
</table>

### High-Level Disinfection of Instruments

<table>
<thead>
<tr>
<th>Equipment/Cleaning Agent</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Solution</th>
<th>Minimum Time Required</th>
<th>Steps</th>
<th>Guidelines/Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>Not easily activated by organic materials</td>
<td>Vapors toxic</td>
<td>70% alcohol</td>
<td>5 minutes</td>
<td>Wipe dry, let air dry</td>
<td>Use properly ventilated area; avoid contact with skin; discard after use</td>
</tr>
<tr>
<td>Formaldehyde (2-4%)</td>
<td>Not easily activated by organic materials</td>
<td>Vapors toxic, skin irritation, respiratory irritant</td>
<td>2-4% formaldehyde in water</td>
<td>2 hours</td>
<td>Store in tightly closed container; air dry</td>
<td>Use properly ventilated area; avoid contact with skin; discard after use</td>
</tr>
<tr>
<td>Glutaraldehyde</td>
<td>Not easily activated by organic materials</td>
<td>Vapors toxic</td>
<td>2-4% glutaraldehyde in water</td>
<td>2 hours</td>
<td>Store in tightly closed container; air dry</td>
<td>Use properly ventilated area; avoid contact with skin; discard after use</td>
</tr>
</tbody>
</table>

*Note: The table is not fully visible in the image provided.*
Making Dilute Chlorine Solutions for decontaminating MVA Instruments

Standard instrument processing uses a 0.1% or 0.5% bleach solution. Dilution is necessary when using a pre-made bleach solution because bleach sold commercially is more concentrated than required.

Because the concentration of commercially-sold bleach varies by brand and country, the amount of bleach needed to achieve the required concentration in solution will also vary. The following chart shows how to mix hypochlorite solutions from pre-made solutions.

Instructions for how to prepare 0.1% to 0.5% chlorine solutions from various commercially available liquid bleach products.

<table>
<thead>
<tr>
<th>Type or Brand of Bleach (Country)</th>
<th>Chlorine %Available</th>
<th>Ratio of Bleach to Water</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0.5%</td>
</tr>
<tr>
<td>JIK (Zimbabwe, Kenya), Robin Bleach (Nepal)</td>
<td>3.5%</td>
<td>1 : 6</td>
</tr>
<tr>
<td>Other household bleach (USA, Canada Indonesia), Eau de Javel (France) 15° chlorum</td>
<td>5%</td>
<td>1 : 9</td>
</tr>
</tbody>
</table>

Source: Adapted from Tietjen et al, 1995.

For the ratio of bleach to water, read as part 1 concentrated bleach to x parts water (e.g. JIK - 1 part bleach to 6 parts for a total of 7 parts).

Use boiled water when preparing 0.1% chlorine solution of HLD because tap water contains microscopic organic matter which inactivates chlorine. In some countries, the concentration of sodium hypochlorite is expressed in chlorometric degrees (°chlorum); 1° chlorum is approximately equivalent to 0.3% available chlorine.