POSTABORTION CARE

A Reference Manual for Improving Quality of Care

editors

Judith Winkler
Elizabeth Oliveras
Noel McIntosh

POSTABORTION CARE CONSORTIUM

(AVSC International, IPAS, IPPF, JHU/CCP, JHPIEGO, Pathfinder International)
POSTABORTION CARE CONSORTIUM

AVSC International

INTERNATIONAL Planned Parenthood FEDERATION

IPAS

CENTER FOR COMMUNICATION PROGRAMS

JHPIEGO CORPORATION

Pathfinder INTERNATIONAL
POSTABORTION CARE CONSORTIUM

For more information on the member organizations of the Postabortion Care Consortium, they can be contacted directly at the following addresses:

AVSC International
79 Madison Avenue
New York, NY 10016, USA
212-561-8000

International Planned Parenthood Federation
Regent's College
Inner Circle, Regent's Park
London NW1 4NS
United Kingdom
71-486-0741

IPAS
303 East Main Street
PO Box 100
Carrboro, NC 27510, USA
919-967-7052

Johns Hopkins Center for Communication Programs
111 Market Place, Suite 301
Baltimore, MD 21202-4024, USA
410-659-6300

JHPIEGO Corporation
1615 Thames Street
Baltimore, MD 21231-3447, USA
410-955-8558

Pathfinder International
Nine Galen Street, Suite 217
Watertown, MA 02172-4501, USA
617-924-7200
ACKNOWLEDGMENTS

This manual was developed, in part, to increase awareness of the high rates of maternal mortality and morbidity caused by incomplete abortion in many areas of the world. It is designed to provide health care providers with up-to-date information on emergency treatment of postabortion complications together with provision of postabortion family planning counseling and services.

The manual is adapted primarily from previously reviewed publications. The main sources were:

- IPAS. Advances in Abortion Care (Volumes 2 through 4).
- Tietjen et al. Infection Prevention for Family Planning Service Programs. JHPIEGO.

Throughout this manual, specific reference to these documents is cited within the text or acknowledged at the end of each chapter. The Postabortion Care Consortium would like to thank the World Health Organization (WHO) for granting permission to use their documents.

Although preparing these guidelines was the responsibility of Judith Winkler, Elizabeth Oliveras and Noel McIntosh, several staff members of consortium member organizations contributed many valuable suggestions. In addition, special thanks go to Drs. Philip Stubblefield, Phillip Darney and Paul Blumenthal, and Gilberte Vansintejan for their technical input as external reviewers. Finally, we wish to acknowledge the contribution made by the staff of the Office of Population, Health and Nutrition at the Agency for International Development.

Members of the Postabortion Care Consortium who contributed to the development of this manual are:

- AVSC International
- International Planned Parenthood Federation (IPPF)
- IPAS (International Projects Assistance Services)
- Johns Hopkins Center for Communication Programs
- JHPIEGO Corporation
- Pathfinder International

Funded in part by the United States Agency for International Development (USAID). The views expressed in this document are not necessarily those of USAID.
REVIEWERS

Paul Blumenthal
Department of Obstetrics and Gynecology
Johns Hopkins Bayview Medical Center

Philip Darney
Department of Obstetrics and Gynecology
and Reproductive Sciences
University of California, San Francisco

Phillip Stubblefield
Department of Obstetrics and Gynecology
Maine Medical Center

Gilberte Vansintejan
Center for Population and Family Health
Columbia/Presbyterian Medical Center

Agency for International Development

Allen Brimmer
Patricia Coffey
Roy Jacobstein
Bonnie Pedersen
Nancy Stark
Anne Wilson

AVSC International

Karen Beattie
Amy Pollack
Cynthia Steele Verme

International Planned Parenthood Federation

Carlos Huezo
Pramilla Senanayake

IPAS—International Projects Assistance Services

Forrest C. Greenslade
Ann H. Leonard
Katie Early McLaurin
## TABLE OF CONTENTS

**Preface** ix

**Chapter 1: Postabortion Care**
- Background 1-1
- Scope of the Problem 1-1
- Elements of Postabortion Care 1-2
  - Emergency Treatment Services 1-2
  - Postabortion Family Planning 1-3
  - Links to Other Reproductive Health Services 1-6
- Rationale for the Use of MVA 1-6

**Chapter 2: Talking with Patients**
- Background 2-1
- Patient Rights 2-1
  - Consent for Treatment 2-2
- Establishing the Patient-Provider Relationship 2-3
- Confidentiality 2-5
- Privacy 2-5

**Chapter 3: Initial Assessment**
- Background 3-1
- Signs and Symptoms 3-1
- Screening for Serious Complications 3-2
  - Shock 3-2
- Other Serious Complications 3-3
  - Severe Vaginal Bleeding 3-3
  - Infection/Sepsis 3-3
  - Intra-Abdominal Injury 3-4
- Medical Evaluation 3-5
  - Medical History 3-5
  - Physical Examination 3-6
    - Abdominal Examination 3-6
    - Pelvic Examination 3-6
    - Speculum Examination 3-6
    - Bimanual Examination 3-7
    - Laboratory Tests 3-9
    - Summary 3-9
- Stage of Abortion 3-10
- Management of Postabortion Complications 3-11
Chapter 4: Infection Prevention

Background 4-1
Definitions 4-1
Protective Barriers 4-2
Handwashing 4-3
Glove Use 4-4
Antisepsis 4-4
No-Touch Technique 4-5
Processing MVA Equipment and Other Items 4-6
Handling Needles and Syringes 4-6
Waste Disposal 4-7
Disposal of Products of Conception (POC) 4-7
Disposal of Hypodermic Syringes (and Needles) 4-7

Chapter 5: Pain Management

Background 5-1
Goal of Pain Management 5-1
Types of Pain 5-2
Pain Management Techniques 5-2
Local Anesthesia 5-4
Complications of Local Anesthesia 5-5
How to Administer Paracervical Block 5-7

Chapter 6: Treatment of Incomplete Abortion

Background 6-1
Manual Vacuum Aspiration 6-1
MVA Instrument Kits 6-2
Choice of Equipment 6-2
Precautions Prior to Performing MVA 6-3
Preparation for MVA Procedure 6-3
Minimizing the Risk of Infection 6-3
Preparing MVA Instruments 6-4
Pain Management 6-5
Pelvic Examination 6-5
Patient Preparation 6-5
Steps for Performing MVA 6-6
Treatment of Second-Trimester Incomplete Abortions 6-12
Postoperative Care 6-13
Monitor Patient's Recovery 6-13
Postoperative Information 6-13
Postabortion Family Planning 6-14
Chapter 7: Management of Problems and Complications During MVA

Background 7-1
Technical Problems 7-1
  Syringe Full 7-1
  Cannula Withdrawn Prematurely 7-1
  Cannula Clogged 7-2
  Syringe Does Not Hold Vacuum 7-3
Procedural Problems 7-3
  Less Than Expected Tissue 7-3
  Incomplete Evacuation 7-3
  All POC Passed Before the MVA 7-3
Other Problems 7-3
  Vaginal Bleeding Not Due to Pregnancy 7-3
  Ectopic Pregnancy 7-4
  Postabortal Syndrome (Acute Hematometra) 7-4
  Fainting (Vagal Reaction or Neurogenic Shock) 7-4
Complications 7-5
  Uterine Perforation 7-5
  Cervical Perforation 7-6
  Shock, Severe Vaginal Bleeding and Post-MVA Infection 7-6
  Air Embolism 7-6

Chapter 8: Processing MVA Equipment and Other Items

Background 8-1
Processing MVA Equipment 8-1
Decontamination 8-1
Making Dilute Chlorine Solutions 8-3
Cleaning 8-4
  MVA Syringes 8-6
Sterilization or High-Level Disinfection 8-6
  Sterilization 8-7
  Handling Sterile Items 8-9
  High-Level Disinfection 8-10
  Boiling 8-10
  Steaming 8-12
Products that Should Not Be Used as Disinfectants 8-14
Storage and Reassembly 8-15
  Sterile Instruments 8-15
  High-Level Disinfected Instruments 8-15
  MVA Syringes 8-16

Chapter 9: Postabortion Family Planning

Background 9-1
  Factors Limiting Access to Postabortion Family Planning 9-1
Postabortion Family Planning 9-2
Counseling 9-3
  Family Planning Information 9-4
  Counseling Process 9-7
    The Counseling Session 9-8

Postabortion Care  iii
Postabortion Contraception 9-10
Contraception after Postabortion Complications 9-13
Service Delivery Capabilities 9-16

Chapter 10: Organizing and Managing Services

Background 10-1
Facilities for Emergency Postabortion Care 10-2
Referral Systems 10-2
Transportation Issues 10-2
Outpatient and Emergency Room Care 10-3
Caseload Considerations 10-4
Patient Flow 10-4
Coordination Within Facilities 10-5
Equipment and Drugs for Emergency Postabortion Care 10-6
Current Status of Existing Resources for Postabortion Care 10-6
Type of Equipment and Supplies Needed 10-7
Quantity of Equipment and Supplies Needed 10-8
Inventory Control and Maintenance 10-8
Policies and Procedures Regarding Equipment and Supplies 10-9

APPENDICES

A Assessment and Treatment of Complications

Background A-1
Shock A-1
Initial Treatment A-2
Definitive Treatment A-3
Severe Vaginal Bleeding A-3
Initial Treatment A-4
Definitive Treatment A-4
Continuing Treatment A-5
Infection/Sepsis A-5
Initial Treatment A-6
Definitive Treatment A-7
Continuing Treatment A-7
Intra-Abdominal Injury A-7
Initial Treatment A-9
Definitive Treatment A-10
Continuing Treatment A-10
Uterine Perforation A-10

B General Principles of Emergency Postabortion Care

Background B-1
Stabilization and Referral B-1
Intravenous (IV) Fluid Replacement B-2
Blood Transfusion B-4
Administration of Medicines
    Intravenous (IV) B-6
    Intramuscular (IM) B-6
    By mouth (oral) B-6
    Antibiotics B-7
    Pain Management B-9
    Tetanus B-10
    Diuretics B-11

C Sample Referral Form: Postabortion Complications C-1

D Processing Surgical Gloves
    How to Decontaminate and Clean Surgical Gloves Before Sterilization or D-1
    High-Level Disinfection
    How to Sterilize Surgical Gloves D-2
    How to High-Level Disinfect Surgical Gloves by Steaming D-3
    How to High-Level Disinfect Surgical Gloves by Boiling D-5
    Accidental Contamination of Sterile or High-Level Disinfected Gloves D-6
    Regloving After Contamination D-7

E Use of Medications for Pain
    Types of Medication E-1
    Analgesia E-1
        Complications of Analgesia E-3
    Sedatives E-4
        Complications of Sedatives E-4

F Equipment and Supplies Needed for MVA
    Furniture and Equipment F-2
    For High-Level Disinfection or Sterilization of Instruments F-2
    For Emergency Resuscitation F-2

G Essential Drugs For Emergency Postabortion Care G-1

H Precautions for Performing MVA H-1

I Preparing Instruments for MVA I-1

Postabortion Care
# FIGURES AND TABLES

| Table 1-1 | Regional Impact of Unsafe Abortion | 1-2 |
| Table 1-2 | Provision of Postabortion Care by Level of Health Care Facility and Staff | 1-4 |
| Figure 1-1 | Comparison of Complication Rates (Vacuum Aspiration versus D&C), 1982-1984 | 1-7 |
| Table 1-3 | Summary of 13 Studies Comparing Vacuum Aspiration and D&C | 1-8 |
| Figure 1-2 | Average Length of Stay for MVA versus D&C at Two Mexican Hospitals | 1-9 |
| Figure 3-1 | Assessing the Shape and Position of the Uterus | 3-7 |
| Figure 3-2 | Palpating Anteverted Uterus | 3-8 |
| Figure 3-3 | Palpating Retroverted Uterus by Rectovaginal Exam | 3-9 |
| Table 3-1 | Medical Evaluation | 3-10 |
| Table 3-2 | Stage of Abortion | 3-11 |
| Figure 3-4 | Summary of Key Steps in Evaluating and Treating Patients with Possible Incomplete Abortion | 3-12 |
| Figure 5-1 | Pathways of Pain Transmission from Uterus and Cervix to the Spinal Cord | 5-4 |
| Figure 5-2 | Paracervical Block Injection Sites | 5-8 |
| Table 6-1 | Results of Four Studies Evaluating MVA for Treatment of Incomplete Abortion | 6-2 |
| Figure 6-1 | MVA Instruments | 6-3 |
| Figure 6-2 | Preparing the Syringe (Creating the Vacuum) | 6-4 |
| Figure 6-3 | Inserting the Cannula | 6-6 |
| Figure 6-4 | Measuring the Uterine Depth with Cannula | 6-7 |
| Figure 6-5 | Attaching the Syringe | 6-7 |
| Figure 6-6 | Releasing the Pinch Valve | 6-8 |
| Figure 6-7 | Evacuating Uterine Contents | 6-8 |
| Figure 6-8 | Detaching the Syringe | 6-9 |
| Figure 6-9 | Inspecting Tissue | 6-10 |
Figure 7-1  Canula Withdrawn Into Vaginal Canal
Figure 8-1  Drawing Decontaminant Solution into Syringe
Figure 8-2  Decontaminating Instruments
Table 8-1  Preparing Dilute Chlorine Solutions from Liquid Bleach (Sodium Hypochlorite) for Decontamination and HLD
Figure 8-3  Formula for Making a Dilute Chlorine Solution from Concentrated Solution
Table 8-2  Preparing Dilute Chlorine Solutions from Dry Powder
Figure 8-4  Formula for Making a Dilute Chlorine Solution from Dry Powder
Figure 8-5  Washing Instruments
Figure 8-6  Rinsing Instruments
Figure 8-7  Sterilizing Cannulae
Table 8-3  Chemicals for Sterilizing MVA Instruments
Table 8-4  High-Level Disinfection of Instruments
Figure 8-8  Steamer
Figure 8-9  Temperature Rise in Surgical Gloves as a Function of Tray Position
Figure 8-10  Retrieving Cannulae
Table 9-1  Individual Factors L-J Counseling Recommendations and Rationale
Table 9-2  The GATHER Technique
Table 9-3  Guidelines for Contraceptive Use by Clinical Condition
Table 9-4  Guidelines for Selection of Contraception by Method
Table 9-5  Local Capability to Deliver Services
Figure A-1  Uterine Perforation During MVA Procedure
Table B-1  IV Fluid Rates
Table B-2  Antibiotic Therapy for Infected Abortion
Table B-3  Inpatient Antibiotic Combination Regimens
Table B-4  Outpatient Antibiotic Therapy
Figure D-1  Gloves with Gauze or Paper Inside Glove and Under Fold
Table D-1  Tips to Help Avoid Glove Problems  D-3
Figure D-2  Gloves in Steamer Pan  D-4
Table E-1  Analgesic Drugs for MVA  E-3
Table E-2  Sedatives for Use with Analgesics and/or Anesthesia in MVA  E-5
Table I-1  Appropriate Cannula by Uterine Size  I-1
Table I-2  Compatible Instrument Parts  I-1
Figure I-1  Closing the Pinch Valve  I-2
Figure I-2  Preparing the Syringe  I-3
PREFACE

The purpose of this manual is to provide clinicians (physicians, nurses and midwives) with essential information on the provision of comprehensive postabortion care services. It is intended to assist clinicians in treating incomplete abortion and its life-threatening complications. The manual outlines the full range of activities needed to provide appropriate, high-quality postabortion care, including family planning and referral to health care services needed after emergency treatment.

The material in this manual is arranged sequentially according to the usual way in which patients are cared for—starting with the initial assessment of their condition and ending with the provision of followup care, including family planning and other reproductive health services. Moreover, it is provided in concise segments, for ease in learning and recall. Finally, key points are repeated in several sections to emphasize their importance.

Specific objectives are to:

• Describe the importance of postabortion care.

• Describe the key elements of postabortion care including the rationale for using manual vacuum aspiration (MVA) for the treatment of incomplete abortion.

• Describe the basic process of talking with patients about their condition and the MVA procedure, its indications and precautions.

• Detail the key steps in the initial assessment of women presenting with possible complications of incomplete abortion, including medical history, physical examination and simple laboratory testing (if needed).

• Describe the management of serious postabortion complications: shock, severe vaginal bleeding, infection/sepsis and intra-abdominal injury.

• Detail easy-to-use, inexpensive infection prevention practices that minimize disease transmission to patients and health care staff.

• Describe the use of analgesics and local anesthetics during treatment of incomplete abortion using MVA.

• Detail a step-by-step procedure for the safe performance of MVA for incomplete abortion.

• Provide a guide to the management of possible complications of MVA.
• Describe the important elements in the followup of women treated for postabortion complications.

• Describe the basic process of postabortion family planning counseling.

• Describe the indications and precautions for postabortion contraception.

• Describe the management skills needed to organize and provide quality postabortion care services.

Finally, this manual describes the elements of quality postabortion care programs, in which:

• Services are provided safely and efficiently.

• Women are treated with respect in a nonjudgmental manner.

• Postabortion family planning services are readily available.

• There are well-established links to other health care services.
BACKGROUND

The international health community contains a wealth of resources that, if coordinated, could have an immediate and significant impact in reducing global levels of maternal mortality and morbidity stemming from the complications of unsafe abortion. Deaths and injuries from incomplete abortion are almost wholly preventable through existing means.

In order to reduce the risk of long-term illness or disability, and death, to women presenting with the complications of incomplete abortion, health care systems must provide easily accessible, quality postabortion care at all service levels. Currently, emergency postabortion care is provided mainly in higher level district hospitals. Not only does this lead to the high cost of providing these services, but it makes them inaccessible to many women. The prevention of abortion-related illness and mortality is dependent on the availability of emergency postabortion care throughout the health care system. "Whether it is health information and education, stabilization and referral, uterine evacuation, or specialized care for the most severe complications, at least some components of emergency care must be available at every service delivery site in the health care system." \(^1\)

The concept of postabortion care presented in this manual provides the basis for reducing mortality and morbidity from incomplete abortion, whether spontaneous or induced.

SCOPE OF THE PROBLEM

Recent estimates are that at least 15% of all pregnancies end in spontaneous abortion, and though death is less likely than in cases of unsafe abortion, women who present with suspected spontaneous abortion also need immediate care. \(^2\) In some countries abortion is the cause of as many as 50% of pregnancy-related deaths. \(^3\) And, according to recent World Health Organization (WHO) estimates, up to 15% of pregnancy-related mortality worldwide is due to abortion. \(^1\)

Although accurate data on the impact of unsafe abortion on maternal health is lacking, WHO estimates \(^4\) that:

- Worldwide, 20 million unsafe abortions occur each year.
- 70,000 women die each year as a result of complications following unsafe abortion.
- 1 in 8 pregnancy-related deaths are due to unsafe abortion.
Currently available regional data on the impact of unsafe abortion on maternal health is summarized in Table 1-1.

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of unsafe abortions (1000s)</th>
<th>Unsafe abortions per 1000 women 15-49</th>
<th>Number of deaths from unsafe abortion</th>
<th>Mortality from unsafe abortion per 100,000 live births</th>
<th>Case fatality per 100 unsafe abortions</th>
<th>Risk of death</th>
</tr>
</thead>
<tbody>
<tr>
<td>More developed countries</td>
<td>2340</td>
<td>8</td>
<td>600</td>
<td>4</td>
<td>0.03</td>
<td>1 in 3700</td>
</tr>
<tr>
<td>Less developed countries†</td>
<td>17620</td>
<td>17</td>
<td>69000</td>
<td>55</td>
<td>0.4</td>
<td>1 in 250</td>
</tr>
<tr>
<td>Africa</td>
<td>3740</td>
<td>26</td>
<td>23000</td>
<td>83</td>
<td>0.6</td>
<td>1 in 150</td>
</tr>
<tr>
<td>Asia†</td>
<td>9240</td>
<td>12</td>
<td>40000</td>
<td>47</td>
<td>0.4</td>
<td>1 in 250</td>
</tr>
<tr>
<td>Europe</td>
<td>260</td>
<td>2</td>
<td>100</td>
<td>2</td>
<td>0.04</td>
<td>1 in 2600</td>
</tr>
<tr>
<td>Latin America</td>
<td>4620</td>
<td>41</td>
<td>6000</td>
<td>48</td>
<td>0.1</td>
<td>1 in 800</td>
</tr>
<tr>
<td>USSR (former)</td>
<td>2080</td>
<td>30</td>
<td>500</td>
<td>10</td>
<td>0.03</td>
<td>1 in 3900</td>
</tr>
</tbody>
</table>

† Japan has been excluded from the regional estimates, but is included in the total for developed countries.

‡ Based on 1990 UN projection of births.

Adapted from: WHO, 1994b.

ELEMENTS OF POSTABORTION CARE

Comprehensive postabortion care services should include both medical and preventive health care. The key elements of postabortion care are:

- Emergency treatment of incomplete abortion and potentially life-threatening complications
- Postabortion family planning counseling and services
- Links between postabortion emergency services and the reproductive health care system

Emergency Treatment

Every health system provides some level of emergency postabortion care services because at least 15% of all
recognized pregnancies end in spontaneous abortion (miscarriage). Although emergency postabortion care services are needed virtually everywhere, their quality and accessibility vary widely. Emergency treatment of postabortion complications often is offered only at secondary and tertiary care centers in urban areas. Unfortunately, poor transportation systems in many developing countries place centralized services out of reach of most poor, rural women. This gap in services makes even spontaneous abortion life-threatening in many instances.

Increasing the availability of emergency postabortion care services throughout the health system requires decentralizing treatment services and improving the quality and range of care at every level. These steps must be backed up by establishing clear protocols for service delivery and comprehensive, systematic training.

Emergency treatment for postabortion complications includes:

- An initial assessment to confirm the presence of abortion complications
- Talking to the woman regarding her medical condition and the treatment plan
- Medical evaluation (brief history, limited physical and pelvic examinations)
- Prompt referral and transfer if the woman requires treatment beyond the capability of the facility where she is seen
- Stabilization of emergency conditions and treatment of any complications (both complications present before treatment and complications occurring during or after the treatment procedure)
- Uterine evacuation to remove retained products of conception (POC)

WHO has identified the prompt treatment of incomplete abortion as an essential element of obstetric care that should be available at every district-level hospital. Fortunately, treatment of uncomplicated incomplete abortions also can be provided at the primary care level or in family planning clinics through the use of manual vacuum aspiration (MVA). Table 1-2
Postabortion Care provides information on the postabortion care services appropriate to each level of health care facility.

### Table 1-2

<table>
<thead>
<tr>
<th>Level</th>
<th>Staff May Include</th>
<th>Emergency Postabortion Care Provided</th>
<th>Postabortion Family Planning</th>
</tr>
</thead>
</table>
| Community                     | Community residents with basic health training  
Traditional birth attendants  
Traditional healers           | Recognition of signs and symptoms of abortion and serious postabortion complications  
Referral to facilities where treatment is available | Provision of pills, condoms, diaphragms and spermicides  
Referral and followup for these and other methods |
| Primary (Primary health clinics, Family planning clinics or Polyclinics) | Health workers  
Nurses  
Trained midwives  
General practitioners       | All primary care facilities. Above activities, plus:  
Diagnosis based on medical history and physical and pelvic examination  
Resuscitation/preparation for treatment or transfer  
Hematocrit/hemoglobin testing  
Referral, if needed | Provision of above methods plus IUDs, injectables and Norplant® implants  
Referral for voluntary sterilization |
| First Referral Level (District hospital) | Nurses  
Trained midwives  
General practitioners  
Ob/Gyn specialists | Above activities, plus:  
Emergency uterine evacuation through second trimester  
Treatment of most postabortion complications  
Local and general anesthesia  
Diagnosis and referral for severe complications (septicemia, peritonitis, renal failure)  
Laparotomy and indicated surgery (including for ectopic pregnancy)  
Blood crossmatch and transfusion | Provision of above methods plus voluntary sterilization  
Followup |
| Secondary and Tertiary Level (Regional or Referral hospital) | Nurses  
Trained midwives  
General practitioners  
Ob/Gyn specialists | Above activities, plus:  
Uterine evacuation as indicated for all incomplete abortions  
Treatment of severe complications (including bowel injury, severe sepsis, renal failure)  
Treatment of bleeding/clotting disorders | All above activities |

Adapted from: WHO, 1994a.¹

Norplant® is the registered trademark of The Population Council for subdermal levonorgestrel implants.
Lack of access to adequate family planning services is a major contributor to the global problem of unsafe abortion; conversely, unsafe abortion is a prime indicator of the unmet need for safe and effective contraceptive methods. In most health systems, women treated for abortion complications rarely receive any counseling or services to prevent subsequent unwanted pregnancies. Because a woman seeking treatment for incomplete abortion already may have experienced an unwanted pregnancy either as the result of not using contraception or method failure, she may be in need of effective contraception.

A number of factors limit provision of family planning services to women who have experienced an abortion. These factors, which increase a woman's risk of repeated unwanted pregnancies, include:

- Lack of understanding of and attention to women's reproductive health needs on the part of providers
- Lack of services for some groups of women (e.g., adolescents, single women)
- Separation of emergency postabortion care services and family planning services
- Misinformation among providers about appropriate postabortion contraceptive methods
- Lack of acknowledgment of the problem of unsafe abortion and the resulting need for contraceptive services

In recognition of the above, in 1993, a technical working group on postabortion family planning, sponsored by several international agencies, developed recommendations for establishing postabortion family planning services. The key recommendation stated that a range of contraceptive methods, accurate information, sensitive counseling and referral for ongoing care should be available and accessible to all women who have experienced abortion.

Steps necessary to realize this goal include:

- Establishing strong functional links between emergency postabortion care services and family planning services
- Developing protocols for postabortion contraception
Using research to support improvements in the quality of postabortion care

Because ovulation returns rapidly following an abortion, with the subsequent risk of repeat pregnancy, postabortion family planning services need to be initiated immediately. For example, following pregnancy loss during the first trimester, ovulation may occur as early as day 11 and usually occurs before the first menstrual bleeding. In contrast to the postpartum period, women who have experienced spontaneous or unsafe abortion face an almost immediate risk of pregnancy.

All modern methods of contraception are appropriate for use after abortion as long as the provider screens the woman for the standard precautions for a method and gives adequate counseling. Recommendations for contraceptive use after first-trimester abortion are similar to those for interval use (i.e., women who have not been pregnant within the last 28 days). Recommendations for contraceptive use after second-trimester abortion are more similar to those for postpartum women (with the notable exception of concerns about estrogen-related precautions which do not apply after abortion). In either case, thorough counseling is essential so that the client chooses a method that meets her needs and that she can use safely and effectively. Chapter 9 provides information on the provision of postabortion contraception, including indications and precautions for specific methods.

Linking emergency postabortion care services with other reproductive health services is essential and logical, yet these services remain distinctly separate in much of the world. This separation leaves women without access to reproductive health care and contributes significantly to women's poor overall health status.

It is important to identify the reproductive health services that each woman may need and offer her as wide a range of services as possible. For example, providers need to be alert to symptoms of genital tract infections (GTIs) and other sexually transmitted diseases (e.g., trichomoniasis or mucopurulent cervicitis) and provide the appropriate treatment for them. Also, for women over age 30-35, it may be possible to offer cervical cancer screening at the time of treatment or to provide referral to a facility where screening is available. Finally, women treated for spontaneous abortion may have special reproductive health care needs, such as special followup for management of recurrent spontaneous abortion.
RATIONALE FOR THE USE OF MVA

The treatment of incomplete abortion almost always requires removal of retained products of conception (POC) from the uterus. Dilatation and curettage (D&C), the traditional method of removing tissue from the uterus, is accomplished by scraping the uterine walls with a metal curette. 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 industrialized countries, may be performed using suction provided by an electric or foot pump or a specially designed manual vacuum aspiration (MVA) syringe. Although uterine evacuation can be achieved either with suction or by D&C, suction has been found to be the safer method. As illustrated in Figure 1-1, vacuum aspiration has lower rates for the complications most commonly associated with uterine evacuation.

Figure 1-1. Comparison of Complication Rates (Vacuum Aspiration versus D&C), 1982-1984

Moreover, as shown in Table 1-3, which summarizes findings from 13 comparative studies, vacuum aspiration has fewer complications in nearly all situations. Thus, while complications can occur with vacuum aspiration, as they can for any medical procedure, it is a safer means of uterine evacuation.
Table 1-3
Summary of 13 Studies Comparing Vacuum Aspiration and D&C

<table>
<thead>
<tr>
<th>Major Complications Reviewed</th>
<th>Complications with vacuum aspiration per 100 procedures</th>
<th>Complications with D&amp;C per 100 procedures</th>
<th>Studies with lower complication rates for vacuum aspiration than D&amp;C (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excessive blood loss</td>
<td>Range of averages (N=95,136) 0 - 15.7</td>
<td>Range of averages (N=17,166) 0.5 - 28</td>
<td>10 of 13 (78%)</td>
</tr>
<tr>
<td>Pelvic infection</td>
<td>0.2 - 5.4</td>
<td>0.7 - 6</td>
<td>7 of 9 (78%)</td>
</tr>
<tr>
<td>Cervical injury</td>
<td>0 - 3.1</td>
<td>0.3 - 6.4</td>
<td>6 of 7 (86%)</td>
</tr>
<tr>
<td>Uterine perforation</td>
<td>0 - 0.5</td>
<td>0 - 3.3</td>
<td>10 of 12 (83%)</td>
</tr>
</tbody>
</table>

Source: Greenslade et al, 1993.11

Using MVA as the method of uterine evacuation also reduces the cost of providing quality postabortion care. In one district hospital in Kenya, where the treatment protocol was changed from sharp curettage (D&C) under general anesthesia to MVA using local anesthesia, the average cost of treating a patient fell by 66%. Similarly, in one Mexican hospital D&C was at least 50% more expensive than MVA. One reason for the lower cost of MVA is that while D&C usually is performed in operating rooms using general anesthesia, MVA can be done in family planning clinics or polyclinics with local anesthesia. Additionally, the simplicity of MVA allows it to be performed by a trained, nonphysician health worker. By contrast, D&C generally is performed only by a physician who often is a specialist.

MVA not only increases cost-effectiveness, but it also increases the potential for earlier access to services by allowing postabortion services to be provided in primary health care facilities. This is an important factor in reducing risk to women. Additionally, in many cases, the use of MVA at the local level reduces the need for referrals to higher levels within the health care system. For example, if women can be treated at primary health care facilities, they do not need to be transported to district or tertiary care facilities, and therefore are less likely to suffer injury or death as a result of abortion complications. With fewer cases referred to these facilities, staff are able to focus on providing care for serious complications and limited health care resources can be better utilized. Even when services are
provided in tertiary care facilities, if postabortion care is provided outside the operating room, the waiting time before and recovery time after the procedure are shortened (see Figure 1-2). Reduction in the use of operating theater facilities and hospital beds also helps alleviate crowding and reduce delays in treatment.

Figure 1-2. Average Length of Stay for MVA versus D&C at Two Mexican Hospitals

![Graph showing average length of stay for MVA versus D&C at two hospitals](image)

Source: Greenslade et al, 1993.\(^{11}\)

In summary, using MVA as the method of uterine evacuation to treat incomplete abortion is preferred because:

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

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


GENERAL REFERENCES


TWO

TALKING WITH PATIENTS

BACKGROUND

Health care workers should recognize that women seeking treatment for incomplete abortion often are under severe emotional stress in addition to physical discomfort. Women may be fearful or reluctant to provide the information needed for appropriate emergency treatment. Quickly establishing a good, positive relationship can help ease the anxiety and concern that patients may feel. Moreover, it is important to respect women’s rights and needs and to provide care without expressing judgment, either verbally or non-verbally.

PATIENT RIGHTS

Any woman who presents with complications of abortion needs immediate, high-quality care. All women have the right to immediate emergency treatment, regardless of whether they have had a spontaneous abortion or resorted to unsafe abortion. Moreover, they have a right to treatment regardless of their ethnic origin, socio-economic status, religion, age, marital status, family size, sexual behavior or political beliefs. "The provision of emergency postabortion care is a requirement of the ethical practice of medicine in every country, as this care is often imperative to preserve a woman's life and health."1

All women being treated for abortion complications have a right to information about their condition. The timing and content should be based on both the woman's condition and her immediate physical needs. It should be given to her (and her family, where appropriate) in a supportive, confidential and non-judgmental manner, and it should deal with:

- her overall physical condition;
- the results of her physical and pelvic examinations and laboratory tests;
- the time frame for treatment;
- the need for referral and transport to another facility;
- procedure(s) to be used as well as the risks and benefits; and
- her consent for treatment or, if she is unable, that of a family member or other responsible adult.

Patients have the right to discuss their concerns and condition in an environment in which they feel confident. The patient should be aware that her conversation with the counselor or service provider will be private and confidential.

A patient should know in advance the type of physical examination or procedure which is going to be undertaken, as well as medications that will be given (including medications for pain).
When a patient is undergoing a physical examination or procedure it should be carried out in an environment (e.g., examination or procedure room) in which her right to privacy is respected. For example, when receiving counseling or undergoing a physical examination or procedure, the patient should be informed about the role of each person in the room (e.g., service providers, individuals undergoing training, supervisors, instructors, researchers, etc.).

A patient should be made to feel as comfortable as possible when receiving postabortion care services. The adequacy of service delivery facilities (e.g., proper ventilation, lighting, seating and toilet facilities) are a factor, however, during postabortion care patient comfort is more directly related to the attitudes of health care providers and the provision of gentle, supportive care. Moreover, the time the patient spends waiting to receive care should be reasonable.

Finally, the patient has a right to express her views about the service she receives. Her opinions about the quality of services, either thanks or complaint, together with her suggestions for changes in service provision, should be viewed positively in a program’s ongoing effort to monitor, evaluate and improve its services. Regularly interviewing women about the services they have received and incorporating their suggestions for change will improve the quality of care.

All persons also have a right to decide freely whether or not to receive treatment. In some places, written consent may be required for all operative procedures, including those for emergency treatment of abortion complications. Under no circumstances should consent requirements delay or interfere with providing emergency treatment to save a woman’s life.

The health worker obtaining the woman’s consent for treatment should follow these steps:

- Determine if the woman is capable of listening to and understanding medical explanations. If not, consent for treatment should be discussed and obtained from the woman’s representative, if available.

- Explain in detail, in a nonthreatening manner, and in language the woman can understand, the procedure(s) to be performed, including risks, benefits, likelihood of success and alternatives.
• Allow time for and encourage the woman to ask questions and discuss her condition.

• Ask the woman (or representative, where necessary) to give consent for treatment.

The way health care workers talk with women can affect the completeness and accuracy of information women give, their comfort during the procedure, the success or failure of treatment, and their ability to recognize and seek care for complications that may occur after discharge. Keep in mind that how the bleeding was started (sticks, massage, medication, etc.) affects a woman’s particular medical risks and the appropriate course of treatment. Women may be hesitant to give information about how the bleeding started unless they understand that it is important to their treatment. An atmosphere of confidentiality and respect will encourage women to give this information. Clear communication both from patient-to-provider and provider-to-patient is essential to collect accurate medical information and to provide women with information before, during and after treatment. Such communication is best achieved when there is a trusting relationship between women and their providers.

**Before treatment,** it is important to obtain sufficient medical information to make an accurate diagnosis and develop a treatment plan. Assure the patient that these questions are being asked to get the information needed to best treat her medical condition. Let her know that her honesty will help decide the best course of treatment. Ask open-ended questions so that the patient does not simply answer “yes” or “no.” For example, ask the patient:

• When did the bleeding start? Is it a lot or a little?

• How did the bleeding start? Was something done to start the bleeding? (Ask these questions with sensitivity and discretion.)

• Have you passed anything from the vagina besides blood? Did it look like skin or clotted blood with tissue (placental fragments)?

• Do you have pain? Where? When did it start? How bad is it?

• Have you had a fever? Chills?
Talking With Patients

- Have you felt weak? Fainted? Collapsed?

In addition, the patient needs information about her health condition and the MVA procedure. When talking with the patient, it is important to use words that the woman understands so that she will understand the questions and remember the information. The health care worker should be able to address particular needs for information or special concerns that a woman may have.

**During the MVA procedure**, supportive attention from staff can help reduce anxiety and lessen pain. Talking with patients in a calm, relaxed manner helps focus attention away from the procedure. The importance of staff (and providers) having these special communication skills cannot be overestimated (see Chapter 5, Pain Management).

Throughout the procedure, health care providers should:

- Explain each step to the patient before it happens.
- Monitor the patient's condition to be sure she is not experiencing undue discomfort or pain.
- Reassure her.

**After the procedure**, patients need reassurance that everything is satisfactory. As the anxiety and stress of the events leading up to the MVA procedure begin to fade away, most patients can begin to take in some new information (postoperative and followup instructions). In addition, counseling for family planning and provision of temporary contraceptive methods may be initiated prior to discharge in most cases. The time of treatment for an incomplete abortion is **seldom the best time** for women to make decisions about methods that are permanent or long-lasting but delay may make these women especially vulnerable to another unwanted pregnancy. (See Chapter 9 for a discussion of postabortion family planning counseling.) It is possible that some women may have made choices about long-lasting or permanent methods before this event and they may be candidates for these methods if their desire to proceed and their full understanding of the procedures are confirmed.

**Tips for talking with patients** include:

- Listen to what the woman has to say and encourage her to express her concerns; try not to interrupt her.
Talking With Patients

- Let the woman know that she is being listened to and understood.
- Answer her questions directly in a calm, reassuring manner.
- Keep the message simple by using short sentences.
- Repeat the most important matters she needs to remember.
- Avoid sophisticated medical terms; instead, use words that the patient will understand.
- Use supportive nonverbal communication, such as nodding and smiling.

CONFIDENTIALITY
All information that the woman provides should be treated confidentially. This includes information about her medical history and conditions bringing her to seek care, the services provided to her and any family planning decisions she makes. Confidentiality requires that the health care provider(s) not discuss this information with the patient’s partner, family, person accompanying her to the health care facility or staff members not directly involved in her treatment without her consent (except where required in a life-threatening medical emergency). On the other hand, if the woman wants to involve a spouse or partner in decision-making, her wishes should be followed.

PRIVACY
Creating an atmosphere of privacy is critical to protecting the patient’s confidentiality, sense of security and dignity, and willingness to communicate honestly. Often simple changes in the physical setting where patients are treated or counseled will offer the woman more privacy. The following are some suggestions for maintaining privacy:

- Use a separate area, such as an office, closed treatment room or curtained space, to encourage open communication when giving preprocedure information, discharge information or counseling.
- Draw curtains around the treatment area whenever the woman is undressed, or, if curtains are not available, turn the treatment table so that the woman’s feet are not facing
Talking With Patients

a doorway or public space. Also provide a curtained area for changing clothes.

- Use drapes (or sheets, or even clothing if drapes are not available) to cover the woman's legs and body during examinations and procedures.

- Limit the number of people in the patient care area during treatment to those involved in providing care. Even if the patient gives permission for a clinical training demonstration, limit the number of persons who are in the room during the demonstration. In addition, staff and trainees in the patient care area should refrain from casual conversation among themselves.

REFERENCES


GENERAL REFERENCES


THREE

INITIAL ASSESSMENT†

Health workers should consider the possibility of incomplete abortion in any woman with symptoms of abortion, whether or not she knows or suspects she is pregnant and regardless of her obstetric, menstrual or contraceptive history.

BACKGROUND

The first step in providing care to a woman suspected of having an incomplete abortion is to assess her clinical situation. This is necessary in order to make a diagnosis and initiate any emergency treatment. The initial assessment may reveal or suggest the presence of immediate life-threatening complications such as shock, severe vaginal bleeding, infection/sepsis or intra-abdominal injury. These problems should be addressed without delay in order to save the patient's life or keep her condition from worsening. Even without complications, incomplete abortion can become life-threatening if definitive treatment (removal of any retained products of conception) is delayed. Therefore, it is essential to make an accurate initial assessment followed by prompt treatment or, if indicated, stabilization and transfer of the patient to a higher level facility.

This chapter outlines the steps initially required to assess the patient's presenting condition. Life-threatening complications which require immediate action are briefly described in this chapter while their management is covered in Appendix A.

Remember: Because more than one of these complications may be present at any given time, you must assess the relative urgency of each and treat accordingly.

SIGN AND SYMPTOMS

Incomplete abortion should be considered in any woman of reproductive age who has:

- a missed period (delayed menstrual bleeding—more than a month has passed since her last menstrual period),

with either:

- vaginal bleeding,
- cramping or lower abdominal pain similar to labor (contractions), or
- passage of pregnancy tissue (placental fragments).

If no\textbf{none} of the above symptoms is present, you should consider another diagnosis (e.g., pelvic infection). Attempts to end a pregnancy through unsafe means by putting unclean instruments, rubber tubes or even sticks into the womb are major causes of serious complications. Unfortunately, for various personal, sociocultural and legal reasons, many women may not provide this important information initially. Therefore, this possibility should always be kept in mind while assessing the physical signs and symptoms.

If incomplete abortion is a possible diagnosis, it is important to identify any life-threatening complications immediately. The most common and most serious complications of incomplete abortion include: shock, severe vaginal bleeding, infection/sepsis and intra-abdominal injury including uterine perforation. If any of these complications are identified, stabilize the patient before proceeding to treat the incomplete abortion or to transfer the patient to a secondary or referral hospital.

**Shock**

Quickly assess the patient for the following \textbf{signs} of shock:

- Fast, weak pulse (rate $\geq 110$ per minute)
- Low blood pressure (diastolic $< 60$)
- Pallor (especially of inner eyelid, palms or around the mouth)
- Sweatiness
- Rapid breathing (respirations $\geq 30$ per minute)
- Anxiousness, confusion or unconsciousness

If shock is suspected, \textbf{immediately} begin treatment (see Appendix A).
Even if none of these signs is present, keep shock in mind as you evaluate the patient further because her status may worsen rapidly. If shock develops, it is important to begin treatment immediately.

**OTHER SERIOUS COMPLICATIONS**

Because several life-threatening conditions requiring immediate treatment may be present at the same time, it is necessary to determine all complications that may be present and to decide the order in which to treat them.

**Severe Vaginal Bleeding**

Signs and symptoms of severe vaginal bleeding include:

- Heavy, bright red, vaginal bleeding with or without clots
- Blood-soaked pads, towels or clothing
- Pallor (especially of inner eyelid, palms or around the mouth)
- Dizziness, fainting

Begin treatment immediately to replace lost fluid and control bleeding (see Appendix A).

**Infection/Sepsis**

If the patient has any of the following, either uterine or generalized infection is very likely.

**Signs**

- Fever (temperature > 38°C), chills or sweats
- Foul-smelling vaginal discharge
- Lower abdominal tenderness (with or without rebound tenderness)
- Mucopus from the cervical os
- Cervical motion tenderness on bimanual examination

---

**To check for rebound tenderness, press the abdomen with a hand. Then quickly remove your hand to rapidly release the pressure. If removal of the hand causes or worsens pain, there is rebound tenderness.**
Initial Assessment

**Symptoms**

- History of previous unsafe abortion or miscarriage
- Lower abdominal pain
- Prolonged bleeding (> 8 days)
- General discomfort (flu-like symptoms)

Begin treatment as soon as possible, before attempting uterine evacuation. After initiating treatment, uterine evacuation should be done promptly because retained products of conception (POC) are most likely the source of the infection. (See Appendix A for management guidelines.)

**Intra-Abdominal Injury**

If the patient has any of the signs listed below with any of the symptoms, she may be suffering from an intra-abdominal injury, such as a perforated uterus.

**Signs**

- Distended abdomen
- Decreased bowel sounds
- Rigid (tense and hard) abdomen
- Rebound tenderness

**Symptoms**

- Nausea/vomiting
- Shoulder pain
- Fever (temperature > 38°C)
- Abdominal pain, cramping

When combined with signs of shock (decreased blood pressure and rapid pulse and respiration), the possibility of major intra-abdominal bleeding (e.g., uterine perforation) must be considered. (See Appendix A for management guidelines.)
**MEDICAL EVALUATION**

If the vital signs are normal and the woman does not appear to be infected (temperature < 38°C) or have intra-abdominal injury (non-rigid abdomen), the next step is to determine the cause of her vaginal bleeding. Taking a thorough reproductive history, performing careful physical and pelvic examinations and (where necessary) obtaining appropriate laboratory tests are important to making an **accurate diagnosis** and **treatment plan**.

Due to issues and circumstances that may surround incomplete abortion, the quality and completeness of the information the woman gives about her condition and medical history often depends upon the quality of the communication between service provider and patient. It is important to respect the woman's needs and to provide care without expressing judgment, either verbally or nonverbally. (See Chapter 2, Talking With Patients.)

**Medical History**

Specific **reproductive information** that should be obtained includes:

- Missed period (date when her last menstrual period began)
- Current contraceptive method (IUD, Norplant implants and progestin-only injectables and pills can be associated with a bleeding pattern that may be mistaken for incomplete abortion.)
- Vaginal bleeding (duration and amount)
- Cramping (duration and severity)
- Fainting (syncope)
- Fever, chills or general malaise
- Abdominal or shoulder pain (may indicate intra-abdominal injury)
- Tetanus vaccination status and possible exposure to tetanus (insertion of unclean instruments or other materials into the uterus)

**Medical information** which may be important includes:

- Drug allergies (e.g., to local anesthetics or antibiotics)
- Bleeding disorders (e.g., sickle cell or thalassemia, hemophilia or platelet disorder)
Initial Assessment

- Chronic medications (e.g., corticosteroids)
- Whether patient has taken an herb or medicine (poison) that may cause serious side effects
- Other health conditions (e.g., malaria during this pregnancy)

Physical Examination

During the physical examination it is important to:

- Check and record the patient's vital signs (i.e., temperature, pulse, respirations, blood pressure)
- Note the general health of the woman (i.e., whether she is malnourished, anemic or in general poor health)
- Examine her lungs, heart and extremities

Abdominal Examination

Check for:

- Masses or gross abnormalities
- Distended abdomen with decreased bowel sounds
- Rebound tenderness with guarding
- Suprapubic or pelvic tenderness

Pelvic Examination

The purpose of the pelvic examination is to determine the size, consistency and position of the uterus, to check for tenderness and to determine the degree of cervical dilation. Careful assessment of the vagina and cervix to check for tears and bleeding is essential.

Prior to the pelvic examination explain the purpose of the examination to the patient and be sure she has emptied her bladder. For the exam, the patient should be on an examination table equipped with stirrups and she should be covered with a cloth or drape to protect her privacy. The clinician should wear new, undamaged examination gloves.

Speculum Examination

Before inserting the speculum:

- Look at the genital area to see if there is bleeding and if so, how much.
- Check the odor of the vaginal blood or discharge.
Next, insert the speculum to look at the cervix. Remove any visible POC from the vaginal canal or cervical os and keep the tissue for examination.

Note any abnormal-smelling discharge, the amount of bleeding and whether the cervix is open (dilated). Check for cervical or vaginal tears or perforations, or pus in the cervix. Cervical infection increases the chance of postoperative uterine infections, including acute pelvic inflammatory disease (PID). If infection is present or suspected, take samples for bacteriological culture, if possible and available, and begin antibiotic treatment with broad-spectrum antibiotics before performing MVA.

**Bimanual Examination**

Assess the size of the uterus. Compare the actual size of the uterus with date of the last menstrual period (LMP). With an incomplete abortion, the uterus usually is smaller than the LMP might suggest.

Assess the shape and position of the uterus. Correctly determining the shape and position of the uterus is critical to the safety and success of the procedure.

Figure 3-1. Assessing the Shape and Position of the Uterus


---

111 In this manual, uterine size is measured by weeks LMP (uterine size equivalent to a pregnant uterus of a given number of weeks since the last menstrual period) rather than gestational weeks (fetal age).
Initial Assessment

If the uterus is larger than expected, it may indicate:

- A more advanced pregnancy than the LMP suggests
- Presence of multiple pregnancies
- A uterus filled with blood clots (i.e., postabortal syndrome)
- A molar pregnancy (i.e., trophoblastic disease)
- Presence of uterine fibroids (i.e., smooth muscle tumors of the uterine wall)

If the uterine size is difficult to assess, it may be because the uterus is tilted backward (retroversion), the patient is overweight or is abdominal guarding (not relaxing the abdomen so the uterus cannot be felt). It is important not to begin a MVA procedure for incomplete abortion until the size of the uterus has been determined. Therefore, if problems in determining the size or position of the uterus are encountered, have a more experienced clinician (if available) assess the uterine size. If there is any doubt, treat the woman as if the pregnancy was advanced further than suspected initially.

**Anteverted uterus** (tilted forward): If the uterus is excessively anteverted (anteflexed), the clinician must be especially careful during the procedure because the risk of perforation may be increased when performing MVA.

Figure 3-2. Palpating Anteverted Uterus

Retroverted uterus (tilted backwards): A mildly retroverted uterus may be best palpated by rectovaginal examination. (Perforation may be more likely if the clinician is not aware that the uterus is markedly retroverted.)

Figure 3-3. Palpating Retroverted Uterus by Rectovaginal Examination


Note: After completing the rectovaginal examination, gloves should be immediately removed, decontaminated and discarded according to recommended infection prevention practices (see Chapter 4).

Laterally displaced uterus (tilted to one side): If the uterus is pushed laterally to one side or the other, the clinician must be especially careful during the procedure or the risk of perforation may be increased.

Laboratory Tests

If Rh status typically is determined in pregnancy, it should be done during the clinical assessment in cases of incomplete abortion as well. For women who are Rh negative, give Rh(D) immune globulin if available.

Summary

The steps in performing the medical evaluation are briefly summarized in Table 3-1.
**Initial Assessment**

<table>
<thead>
<tr>
<th>Medical History</th>
<th>Ask about and record the following information:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Missed period (how long ago did she have her last menstrual period)</td>
</tr>
<tr>
<td></td>
<td>• Vaginal bleeding (duration and amount)</td>
</tr>
<tr>
<td></td>
<td>• Current contraceptive method (IUD, Norplant implants or progestin-only injectable or pills)</td>
</tr>
<tr>
<td></td>
<td>• Cramping (duration and severity)</td>
</tr>
<tr>
<td></td>
<td>• Abdominal or shoulder pain (may indicate intra-abdominal injury)</td>
</tr>
<tr>
<td></td>
<td>• Passed tissue (POC)</td>
</tr>
<tr>
<td></td>
<td>• Drug allergies</td>
</tr>
<tr>
<td></td>
<td>• Bleeding or clotting disorders</td>
</tr>
<tr>
<td></td>
<td>• Whether patient has taken an herb or medicine (poison) that may have serious side effects</td>
</tr>
<tr>
<td></td>
<td>• Other health conditions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General Physical Examination</th>
<th>Check and record vital signs (temperature, pulse, respiration, blood pressure)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Note general health of woman (malnourished, anemic, general poor health)</td>
</tr>
<tr>
<td></td>
<td>Examine lungs, heart, abdomen, extremities. In examining the abdomen, first check bowel sounds, then check to see if the abdomen is distended or rigid (tense and hard); if there is rebound tenderness or abdominal mass(es); and the presence, location and severity of pain.</td>
</tr>
</tbody>
</table>

| Pelvic Examination | Remove any visible POC from the vaginal canal. |
|                   | Note if there is a foul-smelling discharge, the amount of bleeding and whether the cervix is open or closed. |
|                   | Check for vaginal or cervical trauma (tears or perforations) or mucopus from the cervical os. |
|                   | Estimate uterine size based on LMP and examination, check for any pelvic masses and pelvic pain, note how bad the pain is, its location and what causes it (at rest, with touch and pressure, movement of the cervix). |


**STAGE OF ABORTION**

Compare the findings from the pelvic examination with the information in Table 3-2 to determine the stage of abortion.

In the case of threatened abortion, the woman should rest in bed for 24 to 48 hours. If the bleeding gets worse or she develops other symptoms, including any signs of infection, she should be checked again immediately; otherwise, she should be checked in 1 to 2 weeks.

In the case of inevitable or incomplete abortion, uterine evacuation is required for complete removal of any remaining POC. (Examination of the POC after uterine evacuation is necessary to ensure complete removal.)
### Table 3-2
Stage of Abortion

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Bleeding</th>
<th>Cervix</th>
<th>Uterine Size</th>
<th>Other Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threatened Abortion</td>
<td>Slight to moderate</td>
<td>Not dilated</td>
<td>Equal to dates by LMP</td>
<td>Positive pregnancy test(^{\dagger}) Cramping Uterus soft</td>
</tr>
<tr>
<td>Inevitable Abortion</td>
<td>Moderate to heavy</td>
<td>Dilated</td>
<td>Less than or equal to dates by LMP</td>
<td>Cramping Uterus tender</td>
</tr>
<tr>
<td>Incomplete Abortion</td>
<td>Slight to heavy</td>
<td>Dilated (soft)</td>
<td>Less than or equal to dates by LMP</td>
<td>Cramping Partial expulsion of POC Uterus tender</td>
</tr>
<tr>
<td>Complete Abortion(^{\dagger\dagger})</td>
<td>Little or none</td>
<td>Soft (dilated or closed)</td>
<td>Less than dates by LMP</td>
<td>Less or no cramping Expulsion of POC Uterus firm</td>
</tr>
</tbody>
</table>

\(^{\dagger}\) Because the half life of human chorionic gonadotropin (hCG) is 60 hours, in some cases the pregnancy test (which is based on measurement of hCG) may remain positive for several days after the pregnancy has ended.

\(^{\dagger\dagger}\) It is not until about 28 weeks pregnancy (LMP) that a true cleavage plane develops between the maternal surface of the placenta and the uterine surface (decidua basalis). Therefore, histologically complete separation (and removal) of all POC does not occur in either spontaneous, induced or unsafe abortion. Clinically, however, in a “complete” abortion, only minimal placental and no fetal fragments remain, and treatment (MVA or D&C) is not required.


**MANAGEMENT OF POSTABORTION COMPLICATIONS**

The prevention of postabortion complications is dependent on emergency care being integrated throughout the health care system—from the health post to the most sophisticated tertiary level (referral) hospital. Whether it is health information, medical assessment, stabilization and referral, uterine evacuation or specialized care for the most serious complications, at least some components of emergency postabortion care should be available at every service delivery site in the health care system.

In this chapter, the steps involved in initial assessment of the patient, including stabilization and referral, and subsequent medical evaluation have been covered. Taken together they provide a systematic approach for directing management of women with incomplete abortion and the life-threatening complications all too frequently encountered. Moreover, when combined with prompt, effective treatment, reduction in postabortion-related morbidity and mortality can be expected.
In Figure 3-4 the steps involved in evaluating and treating patients with incomplete abortion are briefly summarized.

**Initial Assessment**

**In Figure 3-4** the steps involved in evaluating and treating patients with incomplete abortion are briefly summarized.

**Figure 3-4. Summary of Key Steps in Evaluating and Treating Patients with Possible Incomplete Abortion**

**Presentation**
- In a woman of reproductive age who has:
- History of delayed menses
- Vaginal bleeding
- Cramping or lower abdominal pain
- Passage of POC
- Unexplained fever, chills

**Initial Step (Screening)**
- Assess for signs of shock:
  - Rapid weak pulse
  - Low blood pressure
  - Pallor and sweating
  - Rapid breathing
  - Anxiousness, confusion or unconsciousness
  - Temperature $> 38^\circ C$

  If there are signs of shock, immediate action is required!
  - Treatment: Appendix A
  - After treatment of shock is initiated, proceed with medical evaluation.

**MEDICAL EVALUATION**

**History**
- Date of LMP (missed period), duration and amount of bleeding, duration and severity of cramping, type of contraceptive (IUD, implants, injectable), abdominal pain, shoulder pain, drug allergies, bleeding or clotting disorder

**Physical Exam**
- Vital signs, examination of heart, lung, abdomen and extremities
- Indication of systemic problem (sepsis, intra-abdominal hemorrhage)

**Pelvic Exam**
- Vaginal/cervical trauma, pus, pain on motion, uterine size, position and tenderness, stage of abortion

**Other**
- Remove any visible POC, if possible, determine Rh and tetanus status

**TREATMENT**

**Moderate to Light Vaginal Bleeding**
- Clean pad not soaked after 5 minutes
- Fresh blood, no clots
- Blood mixed with mucus
- Treatment by MVA: Chapter 6

**Severe Vaginal Bleeding**
- Heavy, bright red vaginal bleeding with or without clots
- Blood-soaked pads, towels, clothing
- Pallor
- Treatment by MVA or referral: Chapter 6 or Appendix A

**Intra-abdominal Injury**
- Distended abdomen
- Decreased bowel sounds
- Tense, hard abdomen
- Rebound tenderness
- Nausea, vomiting
- Shoulder pain
- Fever
- Abdominal pain, cramping
- Treatment or referral: Appendix A

**Infection (Sepsis)**
- Fever, chills
- Foul smelling vaginal discharge
- History of unsafe abortion
- Abdominal pain
- Prolonged bleeding
- Flu-like symptoms
- Treatment or referral: Appendix A

GENERAL REFERENCES


FOUR

INFECTION PREVENTION†

BACKGROUND  
With MVA, as with any invasive procedure, there is risk to patients, providers and other staff from contact with blood and other body fluids that may carry blood-borne diseases such as hepatitis B and AIDS. To minimize this risk, universal precautions (blood and body fluid precautions) must be observed at all times in providing postabortion care, processing tissue samples, handling equipment and disposing of waste. The risk of transmitting infection is reduced through using protective barriers (including handwashing and appropriate processing of reusable instruments), using the no-touch technique for performing MVA and disposing of contaminated waste properly.

The infection prevention practices discussed in this chapter are simple, convenient and practical and can be used in any country or health care facility.

DEFINITIONS  
Microorganisms are the causative agents of infection. They include bacteria, viruses, fungi and parasites. For infection prevention purposes, bacteria can be further divided into three categories: vegetative (staphylococcus), mycobacteria (tuberculosis) and endospores (tetanus). Endospores are the most difficult to kill.

The terms asepsis, antisepsis, decontamination, cleaning, disinfection and sterilization are often confusing. For the purposes of these guidelines, the following definitions will be used:

• Asepsis and aseptic technique are general terms used in health care settings to describe the combination of efforts made to prevent entry of microorganisms into any area of the body where they are likely to cause infection. The goal of asepsis is to reduce to a safe level, or eliminate, the number of microorganisms on both animate (living) surfaces (skin and tissue) and inanimate objects (surgical instruments and other items).

Infection Prevention

- **Antisepsis** is the prevention of infection by killing or inhibiting microorganisms on skin and other body tissues by using a chemical agent (antiseptic).

- **Decontamination** is the process that makes objects safer to be handled by staff, especially cleaning personnel, **before** cleaning. Objects to be decontaminated include large surfaces (e.g., pelvic examination or operating tables), surgical instruments, gloves and other items contaminated with blood or body fluids.

- **Cleaning** is the process that physically removes all visible blood, body fluids and any other foreign material such as dust or dirt from skin and inanimate objects.

- **Disinfection** is the process that kills most, but not all, disease-causing microorganisms on inanimate objects.

- **High-level disinfection** (HLD), by boiling, steaming or soaking in special chemicals, eliminates all microorganisms (except some bacterial endospores) on inanimate objects.

- **Sterilization** is the process that eliminates all microorganisms, including bacterial endospores, from inanimate objects.

**PROTECTIVE BARRIERS** Placing a physical, mechanical or chemical “**barrier**” between microorganisms and an individual, whether a patient or health care worker, is an effective means of preventing the spread of disease (i.e., the barrier serves to break the disease transmission cycle).

**Protective barriers** in infection prevention include:

- **Handwashing**

- **Wearing gloves** (both hands), either for patient contact or when handling contaminated waste materials or soiled instruments

- **Using antiseptic solutions** for prepping the skin prior to surgery or a procedure such as MVA

- **Using drapes** during surgical procedures
• Wearing appropriate attire (e.g., goggles, mask, apron) when contact with blood or body fluids is possible (e.g., cleaning instruments and other items)

• Decontaminating, cleaning and sterilizing or high-level disinfecting instruments, gloves and other items

These protective barriers are designed to prevent the spread of infection from:

• Person to person

• Equipment, instruments and environmental surfaces to people

All patient care staff should use protective barriers such as gloves, gowns, aprons, masks and goggles to prevent the exposure of skin and mucous membranes to blood and other body fluids.¹

Handwashing

All patient care staff should wash their hands before direct contact with patients, before putting on high-level disinfected or sterile gloves and immediately after any contact with blood, body fluids or mucous membranes and after removing gloves. Always wash hands between contact with different patients.²

For most activities, handwashing with plain soap for about 15 to 30 seconds followed by rinsing in a stream of water is sufficient.

Microorganisms grow and multiply in moisture and in standing water. Therefore:

• If bar soap is used, provide small bars and soap racks that drain.

• Avoid repeatedly dipping hands into basins containing standing water, even if an antiseptic agent such as Dettol® or Savlon® has been added.

• Choose from several options when no running water is available:

  • Use a bucket with a tap which can be turned off to lather hands and turned on again for rinsing, or a bucket and pitcher.
Use an alcohol handrub which does not require water.

- Dry hands with a clean towel or air dry; shared towels can become readily contaminated.

- Collect used water in a basin and discard in the latrine if a drain is not available.

**Glove Use**

Examination gloves, if available, can be used for:

- Pelvic examination
- The MVA procedure

Use new examination gloves for each procedure; these gloves cannot be reused because they are too thin to be processed.

Typically, *surgical gloves* are used for MVA but they are not necessary if a no-touch technique is used. If surgical gloves are used, new gloves are best. If gloves are reused, they must be cleaned, high-level disinfected or sterilized and checked for peeling, cracking, holes or tears. Gloves with any signs of wear must be discarded. (See Appendix D for details on how to process surgical gloves.)

Use *utility gloves* for housekeeping chores involving potential blood contact such as decontamination and instrument cleaning procedures. Utility gloves may be decontaminated and reused; however, cracked or torn gloves should be discarded.

**Antisepsis**

Infection following minor surgical procedures such as MVA may be caused by microorganisms from the skin, cervix or vagina of the patient or from the hands of the health care worker. Washing hands before and after each case, and washing the patient's perineal area and thoroughly cleaning her cervix and vagina with antiseptic solution prior to performing a MVA are important infection prevention measures. (See Chapter 6 for Patient Preparation.)

Many chemicals qualify as safe skin antiseptics. The following antiseptic solutions are commonly available in different parts of the world:

- Chlorhexidine gluconate (4%) (e.g., Hibiclens®, Hibiscrub®, Hibitane®)
Infection Prevention

- Chlorhexidine gluconate and cetrimide, various concentrations (e.g., Savlon)
- Iodophors, various concentrations (e.g., Betadine®)

For vaginal and cervical preps, select an aqueous (water-based) antiseptic, such as an iodophor or chlorhexidine gluconate. Do not use alcohol or alcohol containing preparations (e.g., Dettol or tincture of iodine). Alcohols burn; they also dry and irritate mucous membranes which in turn promotes the growth of microorganisms. In addition, hexachlorophene (pHisoHex®), which is neurotoxic and is readily absorbed by mucus membranes, should not be used.

Antiseptics do not have the same killing power as the chemicals used for HLD. Thus, antiseptic solutions should never be used to high-level disinfect inanimate objects such as instruments. (See Chapter 8, Tables 8-1 and 8-2 for instructions on using disinfectants.)

No-Touch Technique

In procedures such as MVA where the uterine cavity is entered, it is possible to introduce pathogens into the uterus, resulting in potentially serious infection. To avoid infection, clinicians should always use the no-touch technique during the entire procedure and only use instruments that are sterilized or high-level disinfected before use.

Using the no-touch technique means that the part of the cannula or any other instrument that enters the uterine cavity should not contact contaminated surfaces before insertion through the cervix. Specifically, the tenaculum, cannula or cervical dilator tip should not touch the examination table, unsterile areas of the instrument tray, gloves or vaginal walls before they are inserted. Clinicians should handle the cannulae and other instruments only by the area or end that does not come into contact with the patient. For example, if both ends of metal or plastic cervical dilators are inserted they should be held by the middle and turned carefully so that they do not touch the speculum or vaginal walls. Also remember to pass the cannulae and dilators through the cervical os as few times as possible. (This minimizes contamination of the uterine cavity through microorganisms introduced during dilation and MVA.)

To minimize the risk of transmitting infection to both patients and patient care staff from instruments and gloves following MVA, these items need to be decontaminated, cleaned and then either sterilized or high-level disinfected. Environmental surfaces such as the examination table should also be decontaminated and cleaned after each patient.

Postabortion Care
When is sterilization absolutely essential? When can high-level disinfection (HLD) be an acceptable alternative?

Most authorities recommend that instruments and other items used for surgical procedures, such as MVA, should be sterile. Some guidelines are more flexible, however, and state that when sterilization equipment is not available, HLD can be used. In fact, the sole use of sterilization is not possible or practical in many service delivery sites in both developing and developed countries. For example, cannulae, which would be damaged by either autoclaving or dry heat sterilization, usually are processed between cases by HLD. Sterilization, when correctly performed, is clearly the safest and most effective method for processing instruments; however, if it is neither available nor suitable, then HLD is the only acceptable alternative.

Remember: For either the sterilization or HLD process to be effective, decontamination and thorough cleaning of instruments and other items must be done first.

(See Chapter 8 for more information about processing and storing MVA equipment and other items and Appendix D regarding processing surgical gloves.)

HANDLING NEEDLES AND SYRINGES

Take precautions to prevent injuries from used needles and sharp instruments, which pose a great risk of hepatitis B (HBV) or HIV/AIDS transmission in health care settings. These injuries may occur during surgical procedures, when cleaning instruments, during disposal of needles and when handling sharp instruments after procedures. While disposable syringes and needles are recommended for use in all patient care and surgical procedures, they do not solve the problem of needle stick injuries nor are they always available.

Safety Tips When Using Disposable Needles and Syringes

- Use each needle and syringe only once.
- Do not disassemble needles and syringes after use.
- Do not recap, bend or break needles prior to disposal.
- Dispose of needles and syringes in a puncture-proof container.
Do not bend needles, remove them from disposable syringes or otherwise manipulate them. Avoid recapping needles.

Where disposable needles are not available and recapping is practiced, use the "one-handed" recap method:

- First, place the cap on a hard, flat surface; then remove hand.

- Next, with one hand, hold the syringe and use the needle to "scoop-up" the cap.

- Finally, when the cap covers the needle completely, hold the needle at the base near the hub and use the other hand to secure the cap on the needle.

WASTE DISPOSAL

After completing the MVA, and while still wearing gloves, dispose of contaminated disposable objects (gauze, cotton and other waste items) in a properly marked, leak-proof container or plastic bag. Dispose of sharp instruments (needles and syringes) in a separate puncture-proof container. Waste should be disposed of by burning or burying.

Disposal of POC

After the procedure is complete and the tissue has been inspected, the contents of the MVA syringe (any POC removed from the uterine cavity) must be disposed of carefully in order to minimize the risk of transmitting HBV and HIV as well as other blood-borne diseases to the health care worker, provider, other patients and the community. After inspecting the tissue, empty the POC into a utility sink, flushable toilet (that empties into a sewage system), latrine or container. Be careful to avoid splashing. If the POC are not put into a sewage system, they must be disposed of by burning or burying.

Disposal of Hypodermic Syringes (and Needles)

The disposal of both needles and syringes creates logistical and infection prevention problems. An even larger problem is how to safely dispose of used needles and syringes if they cannot be burned or buried. In many countries, boxes of used disposable needles can be found lying discarded outside health care facilities and hospitals. These used needles and syringes constitute an increasing health risk, especially to children and adults seeking items to play with, sell or use.

An alternative to disposing of both the needle and syringe would be to reprocess only the syringe but not the needle. The rationale for this is the following:
Contaminated needles primarily are responsible for injuries and the potential risk of acquiring a life-threatening disease.

Needles are difficult to decontaminate, clean and either sterilize or high-level disinfect.

Plastic syringes, many of which are made of polyvinyl chloride (PVC), contribute heavily to environmental pollution when incinerated at high temperatures.

Although processing used needles represents an inappropriate reuse of disposables, in some circumstances it is the only available option.
REFERENCES


MVA can be performed outside the operating room (OR) or theater (OT), in the treatment room of a clinic, emergency unit, hospital ward or physician's office. Using MVA outside an OR/OT has many advantages, including encouraging the use of:

- Local anesthesia
- Lower doses of analgesics and sedatives which are safer for patients and require fewer health system resources

Because the patient is awake during the MVA procedure, health care providers must be very attentive to the management of pain through supportive treatment (so-called verbal anesthesia or verbacaine) and, when necessary, use of analgesics, sedatives or local anesthesia. Providers must assess the patient’s needs before determining which treatment or medication might be required.

This chapter reviews the basis for the discomfort or pain that the woman will feel and suggests several ways to ease the pain associated with MVA for incomplete abortion.

The purpose of pain management for MVA is to ensure that the patient experiences a minimum of anxiety and discomfort as well as the least risk to her health. Appropriate use of various agents combined with gentle technique and verbal support from the provider and nursing staff allows the patient to be awake, responsive and in minimal fear and discomfort. Achieving the balance of maximum comfort and minimum risk requires the accurate assessment of each patient’s preoperative condition (general physical assessment including evidence of blood loss and vital signs—temperature, pulse and blood pressure) as well as her individual needs (body size, \textsuperscript{1} \textsuperscript{story of chronic disease, level of anxiety and drug allergies).

The dangers of general anesthesia, particularly in settings that lack skilled staff (anesthesiologist or anesthetist) and facilities for close monitoring of the patient during the procedure and recovery, have been well documented.\textsuperscript{1,2,3,4} Therefore, it is important to use alternative approaches for the safe, effective management of pain.

\textsuperscript{1}Adapted from: Margolis A et al: Pain Control for Treatment of Incomplete Abortion with MVA. Advances in Abortion Care 3(1), 1993.
TYPES OF PAIN

Patients treated for incomplete abortion by MVA may commonly experience two types of pain. The first, a deep, intense pain which accompanies cervical dilation and stimulation of the internal cervical os, is transmitted by the nerves surrounding the cervix and the cervical canal. (Because with incomplete abortion the cervix usually is open, selection of the proper size cannula can minimize this type of pain.) The second type of pain, commonly caused by uterine evacuation, is a diffuse lower abdominal pain with cramping which occurs with movement of the uterus, scraping of the uterine wall and uterine muscle contractions related to emptying of the uterine cavity. Uterine pain is transmitted from the top of the uterus (fundus) along major uterine nerves that follow the uterosacral and utero-ovarian ligaments. Rough handling can cause additional pain, and any anxiety the woman feels will increase her sensations of pain, so gentle handling and sensitive treatment are essential.

In addition, complications such as peritonitis and intra-abdominal hemorrhage may cause abdominal and/or shoulder pain. The provider must balance masking diagnostic symptoms with the use of pain management drugs, and the need to prevent undue discomfort and anxiety on the part of the patient. The most appropriate strategy will depend upon the individual case and the woman's needs.

It is important to continue to monitor the patient's pain level throughout the MVA procedure. The onset of significant additional pain during the procedure may signal an intra-operative complication such as uterine perforation. One of the advantages of local anesthesia is that the patient is responsive and will be able to report any changes, thus allowing prompt evaluation and early management of any complications that could occur during MVA (see Chapter 7).

PAIN MANAGEMENT TECHNIQUES

Most patients with incomplete abortion can remain comfortable during a MVA without much treatment for pain. The procedure is brief, lasting only a few minutes, and the cervix is usually open (dilated) and soft so insertion of the cannula can be done without causing the woman undue pain. Gentle, supportive treatment of the patient, and use of a non-narcotic analgesic (ibuprofen or acetaminophen) coupled with so-called verbal anesthesia (or verbacaine) often are sufficient. When additional dilation of the cervix is necessary, use of local anesthesia such as a paracervical block is the best overall option for effective MVA pain management (see Appendix E).
The keys to pain management and patient comfort with uncomplicated MVA are:

- Supportive attention from staff before, during and after the procedure (helps reduce anxiety and lessen pain)
- A provider who is comfortable working with patients who are awake and is trained to handle instruments gently
- The selection of an appropriate level of pain medication

Use of verbacaine by the provider can make the procedure much easier for the patient. Verbacaine involves being able to:

- Quickly establish a positive relationship with the patient
- Comfortably and openly talk with the patient throughout the procedure

Tips for working with patients who are awake and not, or only lightly, medicated include:

- Explain each step of the procedure prior to performing it.
- Wait a few seconds after performing each step or task (e.g., placing the tenaculum, passing the cannula) for the patient to prepare for the next one.
- Move slowly, without jerky or quick motions (place the tenaculum or sponge forceps on the cervix gently and close it slowly).
- Use instruments with confidence.
- Avoid saying things like "This won't hurt" when, in fact, it will hurt; or "I'm almost done" when you're not.
- Talk with the patient throughout the procedure.

The need for supplemental analgesic or sedative medications (oral, intramuscular or intravenous), including use of a paracervical block, will depend on:

- The emotional state of the patient
- How open (dilated) the cervix is
- Anticipated length of the procedure
Pain Management

- The skill of the provider and assistance of the staff

**Remember:** If analgesics or sedatives are planned to be given, they should be given an appropriate time before the procedure (15 to 30 minutes for IM and 30 to 60 minutes for oral medication) so that maximum relief will be provided during the procedure (see Appendix E).

**LOCAL ANESTHESIA**

Local anesthesia, most commonly provided by a **paracervical block** with lidocaine, is widely used to ease cervical pain if additional cervical dilation is necessary. Local anesthesia causes minimal physiologic disturbance, allowing the uterus to contract firmly and the patient to recover rapidly.

Local injection of an anesthetic such as lidocaine (paracervical block) affects nerve fibers located around the cervix and cervical canal. It minimizes cervical pain from stretching, dilation or movement of the cannula in the cervix. Paracervical block will **not** reach the nerves of the uterus itself (Figure 5-1). The nerves transmitting these sensations are higher in the pelvis than local infiltration will reach. Consequently, it does not affect pain of uterine cramping.

![Figure 5-1: Pathways of Pain Transmission from Uterus and Cervix to the Spinal Cord](image)

- Hypogastric plexus: body, fundus of uterus
- Uterovaginal plexus: cervix, upper vagina

Because patients with a paracervical block remain alert and awake during the procedure, it is especially important to ensure:

- Counseling to increase the patient's cooperation and to minimize her fears
- Good provider-patient communication throughout the procedure (see above)
- Time and patience as local anesthetics are not effective immediately

Local anesthesia with or without sedation (so-called “modified local”) is safer than either general or spinal/epidural anesthesia. Use of general anesthesia subjects patients to increased risk of serious complications (e.g., inhaling of vomit or respiratory depression) as a result of overdose, improper administration of general anesthesia (e.g., failure to intubate the patient) or inadequate monitoring.

The following are conditions for the safe use of local anesthesia:

- All members of the operating team must be knowledgeable and experienced in the use of local anesthetics (lidocaine or chloroprocaine).
- Emergency drugs and equipment (suction and resuscitation apparatus) should be readily available, in usable condition and all members of the operating team trained in their use.

Lidocaine and chloroprocaine are the anesthetics most commonly used for paracervical block. Lidocaine is the world standard for local anesthesia. It is inexpensive, safe, effective and has rapid onset. Furthermore, there is a low risk of allergic reaction associated with the use of lidocaine. Chloroprocaine, on the other hand, is more expensive and less available than lidocaine. It also is more likely to cause an allergic reaction, but it is more rapidly broken down by the liver. Therefore, lidocaine is the preferred anesthetic for MVA.

Complications of Local Anesthesia

Major complications from local anesthesia, including paracervical block, are extremely rare. Convulsions and deaths have, however, been reported in cases where excessive doses were used or injections into a vein occurred. To minimize the risk of major complications, local anesthetics should be used in the smallest effective doses with careful attention to proper technique. In most cases, 10 ml of 1% lidocaine is adequate. In no cases should the total dose exceed 4.5 mg.
per kg body weight of the patient (i.e., about 20 ml). Aspiration (pulling back on the plunger of the syringe) prior to injection reduces the risk of intravenous injection. When recommended dosages are followed, and the plunger is withdrawn before each injection, toxic levels of local anesthetic agents rarely occur. Nonetheless, it is important to recognize the signs and symptoms of toxicity so that no further injections are made and medical treatment is begun.

**Remember:** The keys to safe use of a local anesthetic are to be sure that it is not injected directly into a vein and to use the lowest effective dose.

The following sequence indicates increasingly toxic levels of local anesthetic:

**Mild effects**
- Numbness of lips and tongue
- Metallic taste in mouth
- Dizziness and light-headedness
- Ringing in ears
- Difficulty in focusing eyes

**Severe effects**
- Sleepiness
- Disorientation
- Muscle twitching and shivering
- Slurred speech
- Tonic-clonic convulsions (generalized seizures)
- Respiratory depression or arrest

For mild effects, wait a few minutes to see if symptoms subside, talk to the patient and then continue the procedure. Immediate treatment is needed for severe effects: keep the airway clear and give oxygen by mask or ventilation (Ambu) bag. Should convulsions occur or persist despite respiratory support, small increments (1-5 mg) of diazepam may be given intravenously.9

**Note:** The clinician should be aware that the use of diazepam to treat convulsions may cause respiratory depression.
During pregnancy, increased blood flow to the uterus and surrounding tissues may cause local anesthetics to be rapidly absorbed into the bloodstream resulting in a systemic reaction such as itching, rashes or hives. These symptoms should be treated by administering 25-50 mg diphenhydramine (Benadryl®) intravenously. If the reaction is intense, or if any signs of respiratory distress occur, give 0.4 mg epinephrine subcutaneously and support breathing (respiration) with a ventilating (Ambu) bag through an open airway.

**HOW TO ADMINISTER**

**PARACERVICAL BLOCK**

The technique outlined here, with minor variations, has been widely used throughout the world and is generally accepted. Doses given are for 1% lidocaine without epinephrine.

At each injection site, insert the needle, then aspirate by drawing the plunger back slightly to make certain the needle is not penetrating a blood vessel. If any blood is visible in the syringe, do not inject; instead, withdraw the needle and move to a different injection site.

**STEP 1:** After determining the absence of known allergies to the anesthetic agent or related drugs, fill a 10-20 ml syringe with local anesthetic (1% lidocaine without epinephrine).

**STEP 2:** Use a 3.5 cm (1½ inch), 22- or 25-gauge needle to inject the local anesthetic. If a tenaculum is to be used to grasp the cervix, first inject 1 ml of local anesthetic into the anterior or posterior lip of the cervix which has been exposed by the speculum (the 10 or 12 o’clock position usually is used).

**STEP 3:** With the sponge forceps (or tenaculum) on the cervix, use slight traction and movement to help identify the area between the smooth cervical epithelium and the vaginal tissue (see Figure 5-2). This is the site for insertion of the needle around the cervix.

**STEP 4:** Insert the needle just under the epithelium and aspirate by drawing the plunger back slightly to make certain the needle is not penetrating a blood vessel.

---

**Footnotes:**

†† With incomplete abortion, a sponge or ring forceps is preferable as it is less likely to tear the cervix with traction and does not require the use of local anesthetic for placement.

††† Put the tenaculum on the cervix vertically (one tooth in the external os, the other on the face of the cervix).
STEP 5: Inject about 2 ml of the local anesthetic just under the epithelium, not deeper than 2-3 mm at 3, 5, 7 and 9 o’clock (see Figure 5-2). When correctly placed, a swelling and blanching of the tissue can be noted.

Figure 5-2. Paracervical Block Injection Sites


Tip: Some practitioners have suggested the following step to divert the patient’s attention from the insertion of the needle: place the tip of the needle just over the site selected for insertion and ask the patient to cough. This will “pop” the needle just under the surface of the tissue.

STEP 6: At the conclusion of the set of injections, allow a minimum of 2 to 4 minutes for the anesthetic to diffuse and the block to have its maximum effect.

Note: To prevent local anesthetic toxicity the total dose should not exceed 10-20 ml of a 10 grams/liter (1%) local anesthetic and should be based on the patient’s body weight. The maximum dose of lidocaine to be given by paracervical block is 4.5 mg/kg body weight (2 mg/lb).\(^8\) (Example: Maximum dose = 4.5 mg/kg x 50 kg patient = 225 mg.)
REFERENCES


BACKGROUND

Incomplete abortion is treated by removing the remaining POC from the uterus. The method used for emptying (evacuating) the uterus depends on the duration of pregnancy, which is based on the LMP and uterine size (see Chapter 3), as well as the availability of equipment, supplies and skilled staff (see Appendix F). If skilled staff and supplies are not available, the woman should be referred immediately to an appropriate facility.

Treatment of first- and early second-trimester incomplete abortions can be performed by vacuum aspiration or D&C. As discussed in Chapter 1, vacuum aspiration has been found to result in fewer complications than D&C and causes less trauma to the patient. In addition, vacuum aspiration does not require general anesthesia and can be performed in a clinical procedure or exam room. Treatment of incomplete abortion in the middle to late second trimester, however, should be done by an experienced clinician with advanced training and in a facility with appropriate instruments and full emergency backup (equipment to administer IV fluids, provide blood transfusions and perform abdominal surgery).

MANUAL VACUUM ASPIRATION

Manual vacuum aspiration is an effective method for treatment of incomplete abortion (see Table 6-1). Manual vacuum aspiration acts by removing the contents of the uterus by suction. First, a cannula is inserted through the cervix into the uterus and then a prepared vacuum syringe is attached. After attaching the syringe to the cannula, the syringe's locking valve is released which transfers a vacuum of approximately 1 atmosphere (26 inches/660 mm Hg) into the uterine cavity. The cannula is rotated while gently and slowly moving it back and forth within the uterus. Suction provided by the syringe gently pulls the contents of the uterus (remaining POC) through the cannula and into the barrel of the syringe.

Timing of Procedure. In cases of incomplete abortion, MVA should be accomplished without delay. Prompt treatment will reduce complications, especially in cases of profuse or prolonged bleeding.

† With incomplete abortion, the cervix usually is open (dilated) sufficiently to allow passage of the cannula without further dilation. In some cases, additional cervical dilation may be needed.
## Treatment of Incomplete Abortion

### Table 6-1
Results of Four Studies Evaluating MVA for Treatment of Incomplete Abortion

<table>
<thead>
<tr>
<th>Author, date/country</th>
<th>Number of cases</th>
<th>Gestational age (estimated weeks LMP)</th>
<th>MVA aspiration time (approximate mean time in minutes)</th>
<th>Effectiveness of MVA</th>
<th>Complication rates** for MVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>El Kabarity et al, 1985/Egypt</td>
<td>100</td>
<td>≤ 16</td>
<td>6</td>
<td>&gt; 98%</td>
<td>9</td>
</tr>
<tr>
<td>Kizza and Rogo, 1990/Kenya</td>
<td>300</td>
<td>≤ 16</td>
<td>NA</td>
<td>98%</td>
<td>8.7</td>
</tr>
<tr>
<td>Mahomed et al, 1992/Zimbabwe</td>
<td>834</td>
<td>≤ 12</td>
<td>7†††</td>
<td>100%</td>
<td>0.3</td>
</tr>
<tr>
<td>Verkuyl and Crowther, 1993/Zimbabwe</td>
<td>179</td>
<td>≤ 18</td>
<td>2</td>
<td>&gt; 98%</td>
<td>4.3</td>
</tr>
</tbody>
</table>

† Effectiveness defined as complete evacuation.  
** Complications per 100 procedures include excess blood loss, pelvic infection, cervical injury and uterine perforation (mean for MVA=5.6; mean for sharp curettage=14.8); studies varied in their definition of complications.  
††† Total procedure time (including cannula insertion, etc.).  
NA = not available.

Source: Greenslade, 1993.¹

### MVA Instrument Kits
Basic MVA instrument kits for emergency treatment of incomplete abortion (Figure 6-1) contain either a single-valve or double-valve 60 cc syringe with a locking valve, plunger handle, collar stop and silicone for lubricating the syringe o-ring. Kits also include sterile, flexible cannulae with two opposing, offset openings for maximum effectiveness. Cannulae in single-valve kits come in two sizes (outside diameter): 5 mm and 6 mm. Those in double-valve kits come in six sizes, 6-10 mm and 12 mm, with a set of color-coded adapters to fit each cannula to the syringe.

### Choice of Equipment
The single and double-valve syringes may be used with 5 or 6 mm cannulae for treatment of incomplete abortion up to 8 weeks from the LMP (confirmed by bimanual examination).

The double-valve syringe may be used with cannulae up to the 12 mm size for treatment of incomplete abortion within the first trimester.
PRECAUTIONS PRIOR TO PERFORMING MVA

In the course of the initial assessment conditions may be discovered that indicate the need to initiate other treatment before beginning the MVA or the need to use a different technique to empty the uterine cavity. The precautions to take and rationale for each are outlined in Appendix H. 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 is beyond the first trimester.

PREPARATION FOR THE MVA PROCEDURE

Minimizing The Risk of Infection

Basic infection prevention guidelines for minimizing the risk of disease transmission to patients and clinic staff, including housekeeping and cleaning personnel, were presented in Chapter 4. With proper training of clinic staff and use of recommended infection prevention practices with each procedure, postoperative infection and transmission of diseases such as hepatitis B and AIDS can be minimized. These practices include:

- Thorough handwashing with soap and water before and after each MVA procedure.
• Use of sterile or high-level disinfected instruments and gloves (on both hands)

• Cleaning the cervix and vagina with an effective antiseptic before inserting any instrument through the cervix and into the uterine cavity

• Use of no-touch technique for the MVA procedure

Breaking this routine at any point can have disastrous results for the safety of patients and clinic staff.

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 the closed position, and
  • pulling back on the plunger until the arms of the plunger lock in place (see Appendix I for additional instructions).

Figure 6-2. Preparing the Syringe (Creating the Vacuum)

Pain Management

The need for pain medication (oral, IM or IV), including use of a paracervical block, is discussed in Chapter 5 and Appendix E and will depend on:

• The emotional state of the patient

• How open the cervix is
Treatment of Incomplete Abortion

Pelvic Examination

It is important that the service provider who performs the MVA procedure be certain about:

- Uterine size and position (bimanual examination)
- Condition of the vagina and cervix (tears, perforation or pus) and presence of POC in the vagina (speculum examination)

Patient Preparation

Before performing the pelvic examination, be sure the patient has:

- Emptied her bladder (voided)
- Washed (or had staff wash) her lower abdomen and external genitalia (perineal area) with soap and water

Next, wash hands thoroughly and put high-level disinfected (or sterile) gloves on both hands.

Shaving the patient's pubic hair is not necessary and may increase the risk of local infection (cellulitis). If pubic hair is long or interferes with use of instruments, trim with scissors.

Instructions for Performing Cervical and Vaginal Prep

Ask the client about allergic reactions (e.g., to iodine) before selecting an antiseptic.

After inserting the speculum, thoroughly apply antiseptic solution two or more times to the cervix (especially the os) and then the vagina using a sponge forceps and gauze or cotton.

If iodophors are used, allow up to 2 minutes before proceeding. (Iodophors require time to release free iodine, the active substance.)
Step 1: Gently insert the speculum and check the cervix for tears or protruding tissue fragments. If tissue fragments (placenta or membranes) are present in the vagina or cervix, remove using a sponge (ring) forceps. Also, if IUD strings are visible in the cervix, remove the IUD after prepping the cervix (see Step 2).

Step 2: Clean the cervix (especially the os) and vagina as discussed above.

Step 3: If needed, administer paracervical block and grasp the cervix with a ring forceps or tenaculum (see Chapter 5 for instructions).

Step 4: Cervical dilation is necessary only when the cervical canal will not allow passage of the cannula selected for use. When required, dilation should be done gently with mechanical dilators or with cannulae of progressively increasing size, taking care not to tear the cervix or to create a false opening.

Step 5: While holding the cervix steady and gently applying traction, insert the cannula through the cervix into the uterine cavity just past the internal os (Figure 6-3). (Rotating the cannula while gently applying pressure often helps the tip of the cannula pass through the cervical canal.)

Figure 6-3. Inserting the Cannula


Because the patient is awake during the MVA procedure, providers must be attentive to the woman's emotional needs. Talking with Patients (Chapter 2) and Use of Verbal Anesthesia (Chapter 5) both play key roles in helping the patient through this procedure.
Step 6: Push the cannula slowly into the uterine cavity until it touches the fundus. Note the uterine depth by the dots visible on the cannula (Figure 6-4). The dot nearest the tip of the cannula is 6 cm from the tip, and the other dots are at 1 cm intervals. After measuring the uterine size, withdraw the cannula slightly.

Figure 6-4. Measuring the Uterine Depth with Cannula


Step 7: Attach the prepared syringe to the cannula by holding the forceps (or tenaculum) and the end of the cannula in one hand and the syringe in the other (Figure 6-5).

Figure 6-5. Attaching the Syringe

Note: Make sure that the cannula does not move forward into the uterus as you attach the syringe.

Step 8: 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 6-6. Releasing the Pinch Valve

Step 9: Evacuate any remaining contents of the uterine cavity by gently rotating the syringe and then moving the cannula gently and slowly back and forth within the uterine cavity (Figure 8-7). (Do not rotate the cannula more than 180°—a half turn.)

Figure 6-7. Evacuating Uterine Contents
It is important **not** to withdraw the opening(s) 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, follow the instructions given in Chapter 7 to re-establish the vacuum.

**Note:** While the vacuum is established and the cannula is in the uterus, **never grasp the syringe by the plunger arms.** Doing this may cause the plunger arms to become unlocked, accidentally allowing the plunger to slip back into the syringe, pushing material back into the uterus.

**Step 10:** Check for signs of completion. The MVA procedure is complete when:

- Red or pink foam and no more tissue is seen in the cannula.
- A gritty sensation is felt as the cannula passes over the surface of the evacuated uterus.
- The uterus contracts around (grips) the cannula.

**Step 11:** Withdraw the cannula, detach the syringe and then place the cannula in the decontamination solution. With valve open, empty the contents of the MVA syringe into a strainer by pushing on the plunger.

*Figure 6-8. Detaching the Syringe*
Note: Do not put the empty syringe in the decontamination solution until you are certain the procedure is complete. (Set it aside on a sterile or high-level disinfected tray or container for reuse, if necessary.)

Step 12: Quickly inspect the tissue removed from the uterus:

- for quantity and presence of POC,
- to assure complete evacuation, and
- to check for a molar pregnancy (rare).

If necessary, strain and rinse the tissue to remove excess blood clots, then place in a container of clean water, saline solution or weak acetic acid (vinegar) to examine visually. Tissue specimens also may be sent to the pathology lab as indicated.

Follow the recommended infection prevention practices for handling specimens (see Chapter 4). Tissue fragments which may be seen in treatment of incomplete abortion include villi, fetal membranes, endometrial tissue (decidua) and, after nine weeks from the LMP, fetal parts. (To aid in identifying villi, a simple magnifying glass may be used.)

Figure 6-9. Inspecting Tissue


If no POC are seen, then:

- all of the POC may have been passed before the MVA was performed (complete abortion);
Treatment of Incomplete Abortion

- the uterine cavity may appear to be empty but may not have been emptied completely due to the inexperience of the operator (see Step 9, this section);

- the vaginal bleeding may have been due to a cause other than incomplete abortion (e.g., estrogen- or progesterone-breakthrough bleeding, as may be seen with hormonal contraceptives, or uterine fibroids); or

- the uterus may be abnormal (i.e., cannula may have been in the nonpregnant side of a double uterus)

Absence of POC in a patient with symptoms of pregnancy, however, raises the strong possibility of ectopic pregnancy which should be evaluated completely. Ectopic pregnancy, if diagnosed, requires immediate evaluation and referral if surgery (minilaparotomy or laparoscopy) is not available.

Management of these problems is discussed in Chapter 7.

Step 13: After being certain the procedure is complete, remove the tenaculum and speculum. Decontaminate all instruments (MVA syringe, tenaculum and speculum) by placing in 0.5% chlorine solution. If paracervical block was administered, decontaminate assembled hypodermic needle and syringe by filling with chlorine solution before soaking. Allow the items to soak for at least 10 minutes.

**Note:** Instruments to be reused must be cleaned and either sterilized or high-level disinfected (see Chapter 8).

Step 14: While still wearing gloves, place contaminated disposable objects (gauze, cotton and other waste items) in a properly marked, leak-proof container or plastic bag. Place sharp instruments (needles and syringes) in a separate puncture-proof container. Waste should be disposed of by burning or burying. Tissue fragments evacuated from the uterus also may be emptied into the sewage system.

Step 15: Immerse both gloved hands in decontamination solution, then remove gloves by turning them inside out. Discard as above. If surgical gloves are to be reused, submerge in solution (soak for 10 minutes).

---

If ectopic pregnancy is unlikely, the patient should be checked in 2 to 4 weeks to be sure pregnancy symptoms (breast tenderness, vaginal bleeding) and signs (enlarged uterus, soft cervix) are no longer present.
Step 16: Wash hands thoroughly with soap and water.

For treatment of middle to late second-trimester incomplete abortion, intravenous oxytocin, sharp curettage (D&C) or dilation 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 and 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, IV fluids, special equipment and the facilities to perform abdominal surgery must be available to manage possible complications. Dilation 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). Oxytocin, 200 units/500 ml IV over 4 hours (or equivalent solution) can be used to safely complete expulsion of retained POC in second-trimester incomplete abortions. Usually, the placenta or placental fragments will be expelled during this time or shortly thereafter. It is important to examine the POC for completeness. If expulsion occurs and appears to be complete, observe the woman for bleeding or evidence of retained placental fragments. If, after observation, the woman is stable, she may be discharged. If after observation, however, she is not stable (e.g., continues to have vaginal bleeding), vacuum aspiration with the largest available cannula may be necessary.

Often, when oxytocin is used, it is unclear whether the placenta has been completely expelled. Uterine aspiration (or curettage) is necessary to ensure an empty uterus. This is particularly true if there is infection or if the incomplete abortion has been in process for several days. In such cases, the placenta may not be easily expelled with oxytocic medications alone.

If curettage is performed, it should be done with the largest curette available to maximize the surface covered with each stroke and minimize the risk of perforation.
POSTOPERATIVE CARE

Monitoring Patient's Recovery
Take and record vital signs while the patient is still on the treatment table.

Allow the patient to rest comfortably where her recovery can be observed and monitored.

If the patient is Rh negative, administer Rh(D) immune globulin before discharge, if available.

If treatment for complications (e.g., infection) has been started, continue therapy and monitoring as required by her condition.

For uncomplicated cases, check bleeding at least once before discharge. Recheck vital signs. Check to see that cramping has decreased. (Prolonged cramping is not considered normal.) The patient may be discharged as soon as she is stable, can walk without assistance and has received necessary followup information.

Postoperative Information

Signs of a 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 any prescribed medications 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), and
- her fertility can return in less than 2 weeks after the procedure, so she needs to have contraceptive counseling and begin using a method immediately if another pregnancy is not wanted (see next page).

††††† If pain medications (narcotic analgesics or sedatives) were given before, during or after the MVA, the patient should not be discharged until she is fully recovered (at least 2 to 4 hours after administration).
Treatment of Incomplete Abortion

She should also know what to do and where to go 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 date of her followup visit, if needed, should be set.

Postabortion Family Planning

A woman’s fertility returns almost immediately after an incomplete abortion, as early as 11 days if the pregnancy was less than 12 weeks. Therefore, she must consider whether or not she wants to become pregnant again soon. In the case of spontaneous abortion, she may wish to become pregnant again quickly, and unless there are any medical problems, there is no reason to discourage her from doing so.

For many women, however, this abortion represents a clear desire not to be pregnant at this time. Thus, the woman (and her partner if she desires) needs to receive counseling and information about her return to fertility and available contraceptive methods. The time of treatment for an incomplete abortion, however, may not be the best time for her to make decisions that are permanent or long-term. Counseling needs to be geared to the client’s emotional and physical state. Full and informed choice is critical in the selection of any method and especially for 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 postabortion complications. Natural family planning is not recommended, however, until a regular menstrual pattern returns. (For more information, see Chapter 9).

REFERENCES

GENERAL REFERENCES


MANAGEMENT OF PROBLEMS AND COMPLICATIONS DURING MVA

BACKGROUND

Several types of problems (technical and procedural) as well as medical complications can occur during and after completing an MVA procedure. Most are not serious and if recognized immediately and corrected (or treated), the patient’s recovery will not be affected.

Remember: The key to recognizing and managing problems during MVA is being aware that they can occur even under the best circumstances.

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:

1. Close the pinch valve of the syringe.

2. Disconnect the syringe from the cannula, leaving the tip of the cannula in place inside the uterus. (Do not push the plunger when disconnecting the syringe.)

3. 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 into the eyes.)

4. Re-establish a vacuum in the syringe, reconnect it to the cannula and resume the aspiration. (Many practitioners keep a second prepared syringe on hand during the aspiration 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:

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

2. Close the pinch valve of the syringe.
3. Detach the syringe from the cannula, empty the syringe, then re-establish the vacuum in the syringe (see above, Syringe Full).

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

5. Reconnect the syringe, release the valve and continue aspiration.

Figure 7-1. Cannula Withdrawn Into Vaginal Canal


Cannula Clogged

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

1. Close the pinch valve of the syringe.

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

3. 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-level disinfected cannula.

Note: Never try to unclog the cannula by pushing the plunger back into the barrel with the cannula tip still in the uterus.
Management of Problems and Complications During MVA

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

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 (see Appendix I and Chapter 8).

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 (see below).

Incomplete Evacuation
Using a cannula that is too small or stopping the aspiration too soon can result in retained tissue, subsequent hemorrhage, infection and continued pain and cramping. Careful observation for the signs of completion (see Step 9 in Chapter 6) and tissue examination to identify the POC are the best ways to ensure complete evacuation. Incomplete evacuation is 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 (persistent vaginal bleeding, fever, etc.).

OTHER PROBLEMS

Vaginal Bleeding Not Due to Pregnancy
Women of reproductive age may have irregular 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)
Ectopic Pregnancy

Delay in treatment of an 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 infection
- IUD or progestin-only contraceptive use

If ectopic pregnancy is suspected, check again for signs of an ectopic pregnancy, as detailed in Appendix A, 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 Hematomata)

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 symptoms), usually within a few hours after completion of the procedure. (Late postabortal syndrome also can 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, leading to fainting (syncope). This condition usually lasts only a few seconds to minutes, provided the cause of pain is stopped. Treat by:

- Stopping the procedure immediately
- Using smelling salts (spirits of ammonia)
- Maintaining an open airway
- Turning the patient’s head and shoulder to the side to prevent aspiration if she vomits
Management of Problems and Complications During MVA

- Raising the patient's legs

If recovery is not immediate:

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

COMPLICATIONS

Manual vacuum aspiration for treatment of incomplete abortion is a procedure that involves minimal trauma to the uterus and cervix. In a small percentage of cases, however, one or more of the following complications may occur during the procedure:

- Uterine or cervical perforation
- Severe bleeding (hemorrhage)
- Air embolism

Because these complications can result in serious injury or in some cases death, their prompt recognition and treatment is crucial to minimizing their impact.

Uterine Perforation

If the cannula penetrates further than expected, or if fat, bowel or omentum is observed in the tissue removed from the uterus, the uterus has been perforated. (Careful examination to determine the position of the uterus and cervix is essential to avoid this complication.) Uterine perforation also can damage internal organs and blood vessels. If uterine perforation is suspected, appropriate steps must be taken which include observation and possible surgery (laparoscopy and/or laparotomy) (see Appendix A).

Cervical Perforation

This complication is most likely to occur during forceful cervical dilation. Treatment of cervical perforation requires immediate repair and observation to assure the underlying blood vessels have not been damaged, leading to intrauterine or intra-abdominal bleeding (see Appendix A).

† If available, give atropine sulfate 0.2 mg (0.4-0.6 ml) IV.
Management of Problems and Complications During MVA

Shock, Severe Vaginal Bleeding and Post-MVA Infection

Diagnosis and treatment of shock and pelvic infection are fully described in Chapter 3 and Appendix A. Treatment of severe vaginal bleeding depends on the cause and severity of hemorrhage and may include repeat evacuation, oxytocin (IM or IV), uterine massage, suturing tears, intravenous fluids, transfusion or surgery (see Appendix A).

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 (see Appendix A).

GENERAL REFERENCES


EIGHT

PROCESSING MVA EQUIPMENT AND OTHER ITEMS

BACKGROUND
At present, in many developing countries, disposable items are used infrequently because they are expensive, difficult to dispose of safely and rarely are available in adequate supply. Thus, the reuse of items such as surgical gloves, plastic syringes and MVA cannulae is widespread.

Using disposables for infection prevention purposes often is unnecessary. For example, it is highly unlikely that an infection will be transmitted from a dish used by a patient with an acute respiratory or gastrointestinal infection. Furthermore, most disposables create additional environmental pollution problems. Thus, in many clinical settings reusable items can safely replace disposables (e.g., metal rather than plastic kidney-basins).

In this chapter, detailed information is provided on how to process MVA equipment as well as other items (e.g., surgical instruments and gloves).

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

• Decontamination
• Cleaning
• Sterilization or high-level disinfection
• Storage and reassembly

DECONTAMINATION
All items, including surgical gloves, should be decontaminated immediately after use to make them safer for staff to handle and clean. Personnel should wear gloves while decontaminating and cleaning used instruments. Inexpensive rubber or vinyl household (utility) gloves work well for this.

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 be done 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, then place the syringe and cannulae, other soiled instruments and gloves in the chlorine solution (see Figure 8-1 and 8-2). 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.

Figure 8-1. Drawing Decontaminant Solution into Syringe


Figure 8-2. Decontaminating Instruments


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

After decontamination, rinse items 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 may have come in contact with body fluids, should be decontaminated. Wiping with a suitable disinfectant such as 0.5% chlorine solution after each patient, when visibly contaminated or at least daily, is an easy-to-do and inexpensive way to decontaminate large surfaces.
Making Dilute Chlorine Solutions

Instructions for how to prepare 0.1% and 0.5% chlorine solutions from various commercially available liquid bleach products are shown in Table 8-1. The formula for making a dilute solution from a commercial preparation of any concentration is shown in Figure 8-3.

Table 8-1
Preparing Dilute Chlorine Solutions from Liquid Bleach (Sodium Hypochlorite) for Decontamination and HLD

<table>
<thead>
<tr>
<th>Type or Brand of Bleach (Country)</th>
<th>Chlorine % Available</th>
<th>Ratio of Bleach to Water(^1)</th>
<th>0.5%</th>
<th>0.1%(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JIK (Kenya), Robin Bleach (Nepal)</td>
<td>3.5%</td>
<td>1 : 6</td>
<td>1 : 34</td>
<td></td>
</tr>
<tr>
<td>Household bleach (USA, Indonesia), ACE (Turkey), Eau de Javal (France) (15 °chlorum(^{111}))</td>
<td>5%</td>
<td>1 : 9</td>
<td>1 : 49</td>
<td></td>
</tr>
<tr>
<td>Blanquedor, Cloro (Mexico)</td>
<td>6%</td>
<td>1 : 11</td>
<td>1 : 59</td>
<td></td>
</tr>
<tr>
<td>Lavandina (Bolivia)</td>
<td>8%</td>
<td>1 : 15</td>
<td>1 : 79</td>
<td></td>
</tr>
<tr>
<td>Chloros (UK), Lejia (Peru)</td>
<td>10%</td>
<td>1 : 19</td>
<td>1 : 99</td>
<td></td>
</tr>
<tr>
<td>Chloros (UK), Extrait de Javel (France) (48 °chlorum(^{111}))</td>
<td>15%</td>
<td>1 : 29</td>
<td>1 : 149</td>
<td></td>
</tr>
</tbody>
</table>

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

\(^1\) Use boiled water when preparing a 0.1% chlorine solution for HLD because tap water contains microscopic organic matter which inactivates chlorine.

\(^{111}\) In some countries the concentration of sodium hypochlorite is expressed in chlorometric degrees (°chlorum); 1°chlorum is approximately equivalent to 0.3% available chlorine.


Figure 8-3. Formula for Making a Dilute Chlorine Solution from Concentrated Solution

\[
\text{Total Parts (TP) water} = \left(\frac{\% \text{ Concentrate}}{\% \text{ Dilute}}\right) - 1
\]

Example: Make a dilute chlorine solution (0.5%) from 5% concentrated solution.

1. Calculate TP water: 
\[
\left(\frac{5.0\%}{0.5\%}\right) - 1 = 10 - 1 = 9
\]

2. Add 1 part concentrated solution to 9 parts water.

Processing MVA Instruments

The approximate amount (grams) needed to make 0.1% and 0.5% chlorine-releasing solution from several commercially available compounds (dry powders) are listed in Table 8-2. The formula for making a dilute solution from a powder of any percent available chlorine is shown in Figure 8-4.

<table>
<thead>
<tr>
<th>Available chlorine required</th>
<th>0.5%</th>
<th>0.1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium hypochlorite (70% available chlorine)</td>
<td>7.0</td>
<td>1.5</td>
</tr>
<tr>
<td>NaDCC (60% available chlorine)</td>
<td>8.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Chloramine (25% available chlorine)</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>NaDCC-based tablets (1.5 g of available chlorine per tablet)</td>
<td>4 tablets/liter</td>
<td>1</td>
</tr>
</tbody>
</table>

† Use boiled water when preparing a 0.1% chlorine solution for HLD because tap water contains microscopic organic matter which inactivates chlorine.

Adapted from: WHO, 1988.²

Figure 8-4. Formula for Making a Dilute Chlorine Solution from Dry Powder

\[
\text{Grams/Liter} = \left( \frac{\% \text{ Dilute}}{\% \text{ Concentrate}} \right) \times 1000
\]

Example: Make a dilute chlorine-releasing solution (0.5%) from a concentrated powder (35%).

1. Calculate grams/liter: \( \left( \frac{0.5\%}{35\%} \right) \times 1000 = 14.2 \ g / L \)

2. Add 14.2 grams (≈ 14 g) to 1 liter of water.


**CLEANING** After decontamination, thoroughly wash all instruments including the syringe and cannulae in lukewarm water with detergent or liquid soap to remove all organic material.
Thorough cleaning is the most effective way to reduce the number of microorganisms 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 a 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.

Wear utility gloves when cleaning instruments. Do not use torn or damaged gloves. At the end of the day, clean the gloves and leave them to dry for use the following day.

Eye wear is suggested to protect against accidental splashes. As an added precaution, clean instruments under the surface of the water to prevent material from becoming airborne through splashing (see Figure 8-5).

Figure 8-5. Washing Instruments


Tissue and blood are sometimes difficult to remove from the tip of the cannulae. To flush it out, draw soapy water into the cannula with the syringe and expel it several times. If material remains, vigorously swish the cannula back-and-forth in water, taking care not to splash yourself or others. Do not use brushes or other small objects to remove matter, as they can scratch the inside of the cannula, creating crevices where microorganisms can become trapped.

Take apart all instruments, including MVA and hypodermic syringes. Disassemble the MVA syringe by removing the collar stop and carefully pulling the plunger out of the barrel. Remove the black o-ring from the plunger. Remove the valve set and
open the valve. (For the double-valve syringe, remove the o-ring from inside the valve.) Wash all parts of the syringe in lukewarm soapy water, taking care to remove all traces of blood or tissue. Scrub the syringe with a soft brush or cloth.

Clean metal instruments with a soft brush (old toothbrushes work well) or cloth in soapy water until visibly clean. Give special attention to the teeth, joints or screws where organic matter can collect.

After cleaning, rinse the instruments, MVA and hypodermic syringes and cannulae thoroughly with clean water to remove any detergent residue, which can interfere with chemical disinfection (Figure 8-6). Air dry or dry with a clean towel. (Wet 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 cannulae, that are to be boiled.

Figure 8-6. Rinsing Instruments


MVA Syringes Because the syringe serves only as the source of vacuum and container for blood and tissue, and does not come in contact with the patient, decontamination and cleaning are sufficient (acceptable) for processing. If HLD or sterilization of 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 in contact with the blood stream, tissue beneath the skin or tissues which normally are sterile. When sterilization is either unavailable or not suitable, HLD is the only acceptable alternative. For both methods, the preparatory steps and postprocedure handling of instruments and other items must be done properly in order to achieve the desired outcome.

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

After cleaning, all instruments should be sterilized or high-level disinfected. The exact method chosen 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: the cannulae will melt and the syringe valve assembly will crack. By contrast, the Denniston plastic dilators can be autoclaved (steam sterilized) repeatedly, but not dry-heat sterilized.2

Recommended operating conditions for sterilization or HLD of 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 (15 lb/in²)
- **Time:** 20 minutes (30 minutes for wrapped instruments)

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

- **Temperature:** 160°C (320°F)
- **Time:** 2 hours

or

- **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 (Figure 8-7) and can be used for instruments as well. For instructions on how to use chemical sterilants, see Table 8-3.

Figure 8-7. Sterilizing Cannulae

Table 8-3
Chemicals for Sterilizing MVA Instruments

<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>Glutaraldehyde</td>
<td>not easily inactivated by organic materials</td>
<td>sterilization slower below 25°C (77°F); skin, eye, respiratory irritant</td>
<td>full strength — never dilute; follow manufacturer's instructions for mixing</td>
<td>10 hours</td>
<td>Submerge instruments completely; make sure solution fills cannulae interior; soak; remove with sterile forceps; rinse with sterile water; air dry</td>
<td>Use only in well-ventilated areas; discard according to manufacturers instructions or sooner if solution is cloudy</td>
</tr>
<tr>
<td>(2-4% (Cidex))</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>not easily inactivated by organic materials</td>
<td>vapors toxic; skin, eye, respiratory irritant</td>
<td>dilute 1 part commercial formaldehyde (35-40%) with 4 parts bottled water to make 8% solution</td>
<td>24 hours</td>
<td>Submerge instruments completely; make sure solution fills cannulae interior; soak; remove with sterile forceps; rinse with sterile water; air dry</td>
<td>Use only in well-ventilated areas; do not dilute with chlorinated water—this produces toxic gas; discard 14 days after mixing or sooner if solution is cloudy</td>
</tr>
<tr>
<td>(8%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Handling Sterile Items

Handle sterile items only with a sterile forceps or lifter or while wearing sterile gloves.

Unwrapped items that have been steam (autoclave) or dry-heat sterilized should be used immediately after cooling or placed in a sterile, covered container.

Instruments that are sterilized in chemical solutions should be rinsed well with sterile water, dried with a sterile towel and stored in a sterile, covered container.
When sterilization equipment is either not available or not suitable, HLD is the only acceptable alternative. HLD destroys all microorganisms, including viruses causing hepatitis B and AIDS, but does not reliably kill all bacterial endospores. High-level disinfection of instruments and other items can be achieved by steaming, boiling (except MVA syringes) or soaking in a chemical disinfectant.

**High-Level Disinfection**

*Remember: Moist heat at 80°C kills essentially all bacteria, viruses, parasites and fungi in 20 minutes. Therefore, unless the altitude of the health facility is over 5,500 meters (18,000 feet) it is not necessary to increase the steaming or boiling time.*

**Boiling**

Recommended operating conditions for HLD by boiling and instructions for the use of high-level disinfectants are described in Table 8-4.

Instruments that are high-level disinfected should be handled with high-level disinfected instruments (e.g., sponge forceps) or sterile or high-level disinfected gloves.

After boiling, allow items to cool (air dry) by placing on a dry, sterile or high-level disinfected tray or in a high-level disinfected container. Use items immediately or keep in a sterile or high-level disinfected, covered container.

**Boiling Tips**

- Always boil for 20 minutes using a pot with a lid.
- Start timing when the water begins to boil.
- Items should be covered with water during boiling.
- Do not add anything to the pot after the water begins to boil.

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Disinfecting Agent</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Solution Strength</th>
<th>Minimum Time Required for Disinfection</th>
<th>Steps</th>
<th>Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal Instruments and</td>
<td>Boiling water</td>
<td>Easily available; will provide HLD up</td>
<td>N/A</td>
<td>20 minutes at</td>
<td>Fill large (at least 25 cm/10&quot;</td>
<td>Grasp cannulae gently when removing from water. Grasping hot cannulae</td>
<td>Discard solution (7 to 28 days) after mixing or sooner if cloudy (follow</td>
</tr>
<tr>
<td>Cannulae</td>
<td></td>
<td>to 5,500 meters (18,000ft)</td>
<td></td>
<td>rolling boil</td>
<td>diameter) pot 3/4 full with clean</td>
<td>may flatten the cannulae. Do not leave cannulae in previously boiled</td>
<td>manufacturers instructions).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>water; deposit instruments; cover pot;</td>
<td>water; remove with HLD forceps; air dry on a HLD tray or in a HLD</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>bring to boil again; boil for 20</td>
<td>container.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>minutes; remove items gently with</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HLD forceps; air dry on a HLD tray or in a HLD container.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glutaraldehyde (2-4%)</td>
<td></td>
<td>Not easily inactivated by organic</td>
<td>Skin, eye, respiratory irritant</td>
<td>20 minutes</td>
<td>Submerge items completely, making</td>
<td>Discard solution (7 to 28 days) after mixing or sooner if cloudy (follow</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>materials</td>
<td></td>
<td></td>
<td>sure solution fills cannula interior;</td>
<td>manufacturers instructions).</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>soak; remove with HLD forceps; rinse</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>with boiled water; air dry on a HLD</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>tray or in a HLD container.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlorine (0.1%)</td>
<td>Fast-acting, very</td>
<td>Corrosive to metal</td>
<td></td>
<td>20 minutes</td>
<td>Submerge items completely in a</td>
<td>Change solution daily or sooner if cloudy.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>effective against</td>
<td></td>
<td></td>
<td></td>
<td>non-metal container; making sure</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HBV and HIV</td>
<td></td>
<td></td>
<td></td>
<td>solution fills cannula interior;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>soak; remove with HLD forceps; rinse</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>with boiled water; air dry on a HLD</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>tray or in a HLD container.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrogen Peroxide (6%)</td>
<td></td>
<td>Not easily inactivated by organic</td>
<td>Corrosive to copper, aluminum, zinc and</td>
<td>30 minutes</td>
<td>Submerge items completely in a</td>
<td>Store hydrogen peroxide in opaque container away from light and heat.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>materials</td>
<td>brass; inactivated by prolonged exposure</td>
<td></td>
<td>non-metal container; making sure</td>
<td>Change solution daily or sooner if cloudy.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>to heat (over 30°C) or light</td>
<td></td>
<td>solution fills cannula interior;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>soak; remove with HLD forceps; rinse</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>with boiled water; air dry on a HLD</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>tray or in a HLD container.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formaldehyde (8%)</td>
<td></td>
<td>Not easily inactivated by organic</td>
<td>Vapors toxic; skin, eye, respiratory</td>
<td>20 minutes</td>
<td>Submerge items completely, making</td>
<td>Use only in well-ventilated area. Do not dilute with chlorinated water —</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>materials</td>
<td>irritant</td>
<td></td>
<td>sure solution fills cannula interior;</td>
<td>this produces toxic gas. Discard solution after 14 days or sooner if</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>soak; remove with HLD forceps; rinse</td>
<td>cloudy.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>with boiled water; air dry on a HLD</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>tray or in a HLD container.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Steaming

Recently, a new process for high-level disinfecting surgical gloves by steaming (low-pressure moist heat) has been reported. Steaming surgical gloves, which have been washed and thoroughly rinsed, in a one-to-three tiered steamer has been used as the final step in processing gloves for many years in Indonesia and other parts of South East Asia. Until now, however, the effectiveness of this process for HLD was never tested.

In the study reported, the steamer used (Figure 8-8) consisted of:

- a bottom pan (about 31 cm in diameter) for boiling water;
- one to three circular pans with multiple 0.5 cm (diameter) holes in their bottoms to permit the passage of steam up through them and water back down to the bottom pan; and
- a lid which fits on the top pan.

Two types of tests were conducted to determine whether surgical gloves could be high-level disinfected by this process.

In the first set of experiments, a thermocouple was placed inside a glove in each of the three pans, respectively, and the rate and extent of the temperature change recorded. As shown in Figure 8-9, when from 5 to 15 pairs of surgical gloves were placed in each of the three pans, the temperature reached 96-98°C in less than 4 minutes in the bottom and middle pans and
within 6 minutes in the upper pan. Thereafter, the temperature remained constant throughout the remaining 20 minutes.

**Figure 8-9. Temperature Rise in Surgical Gloves as a Function of Tray Position**

![Temperature Rise Graph](image)

*Source: McIntosh et al, 1994.*

In the second set of experiments, batches of new surgical gloves were contaminated with *Staphylococcus epidermidis*, *Staphylococcus aureus*, *Pseudomonas aeruginosa* and *Candida albicans* as well as *Bacillus subtilis* (heat-sensitive) and *Bacillus stearothermophilus* (heat-resistant) endospores. Next the gloves were placed in one of the three pans and steamed for 20 minutes. After this, they were removed from the pans and incubated for 24 hours in sterile media and then plated on blood agar. In all cases, there was no growth of any microorganisms or *B. subtilis* endospores (6, 15 and 30 gloves per pan) at 24 hours and, as expected, only a reduction in the number of *B. stearothermophilus* endospores.

Based on the results of these experiments, it would appear that steaming is effective in high-level disinfecting surgical gloves.

At the present time steaming has several distinct advantages over boiling for the final processing of surgical gloves. Although boiling and steaming gloves are equally easy to do, to date no practical solution for drying boiled gloves has been discovered (i.e., it is difficult to prevent contamination while they are air-drying which takes a long time—up to 24 hours). As a result, health facilities lacking an autoclave either had to use new, disposable sterile gloves for every surgical
processing MVA Instruments

Products That Should Not Be Used As Disinfectants

Many antiseptic solutions are used incorrectly as disinfectants. While antiseptics (sometimes called "skin disinfectants") are adequate for cleaning skin before an injection or surgical procedure, they are not appropriate for disinfecting surgical instruments and gloves. They do not reliably destroy bacteria and viruses and do not destroy bacterial endospores. For example, Savlon (chlorhexidine gluconate with or without cetrimide) which is readily available worldwide, is a good antiseptic but is often mistakenly used as a disinfectant.

Antiseptics that should not be used as disinfectants are:

- Acridine derivatives (e.g., gentian or crystal violet)
- Cetrimide (e.g., Cetavlon®)
- Chlorinated lime and boric acid (e.g., Eusol®)
- Chlorhexidine gluconate (e.g., Hibiscrub, Hibitane)
- Chlorhexidine gluconate and cetrimide, various concentrations (e.g., Savlon)
- Chloroxylenol (e.g., Dettol)
- Hexachlorophene (e.g., pHisoHex)
- Mercury compounds (toxic and not recommended as an antiseptic or a disinfectant)

Mercury solutions (such as mercury laurel), although low-level disinfectants, cause birth defects and are too toxic to use as either disinfectants or antiseptics.

Other products frequently used to disinfect equipment are 1-2% phenol (e.g., Phenol®), 5% carbolic acid (e.g., Lysol®) and benzalkonium chloride, a quaternary ammonium (e.g.,...
Zephiran®). These are low-level disinfectants and should be used only to decontaminate environmental surfaces when chlorine compounds are not available.

Items that are high-level disinfected in chemical solution should be rinsed well with sterile water, dried with a sterile towel and stored in a sterile or high-level disinfected, covered container.

**STORAGE AND REASSEMBLY**

**Sterile Instruments**
Sterile packs or containers should be labeled with an expiration date and used within 1 week. If they are not used within one week, the item should be recleaned and resterilized. Store sterile packs or containers in areas with enclosed shelves off the floor to protect them from dust and debris. Do not use cardboard boxes for storage; they shed dust and may harbor insects. If the packs or containers become wet, the items lose sterility and must be reprocessed.

Instruments, including cannulae, stored in sterile, covered containers remain sterile as long as a sterile technique is used when removing or replacing them. The containers should be dated and unused items reprocessed weekly.

**High-Level Disinfected Instruments**
Store instruments that have been high-level disinfected in dry, covered, high-level disinfected or sterile containers with tight-fitting lids. Do not store the cannulae or instruments in chemical solutions (e.g., glutaraldehyde or antiseptics such as Savlon) because they can become contaminated.

When retrieving a cannula or instrument from the storage container, use only sterile or high-level disinfected forceps to avoid contaminating remaining items. Grasp only the end of the cannula that does not have an opening (aperture) (Figure 8-10). It is best to store a small number of cannulae in each container to minimize the risk of contamination.
MVA Syringes

**Reassembling the MVA syringes.** Replace the o-ring on the plunger. Lubricate the o-ring by placing one drop of silicone (or glycerol or liquid soap) on the o-ring, then spread the silicone around the ring with a fingertip. Petroleum based products should not be used.

Reassemble the syringe by holding the plunger arms together and inserting the plunger into the barrel. Reattach the collar stop. Push the plunger in and out several times to distribute the lubricant in the barrel.

Check the syringe for vacuum. This should be done after cleaning and again immediately before use. Do this by closing the pinch valve and pulling out the plunger until the locking arms catch. Leave the syringe in this position for 2 to 3 minutes, and then release the pinch valve. You should hear a rush of air into the syringe, which indicates that the syringe maintains a vacuum.

If you do not hear a rush of air, remove the plunger. Check the o-ring for cracks or wear and check the syringe barrel for cracks. If the syringe parts appear undamaged, reassemble the syringe. Repeat the test. If the syringe still loses vacuum when tested, it should be discarded.

**Storing the MVA Syringes.** Store the syringes in covered containers or plastic bags that will protect them from dust or other contaminants. If not used within 1 week, reprocess by cleaning and drying.
REFERENCES


GENERAL REFERENCES


BACKGROUND

in many instances, the emergency postabortion care setting may be one of the few contacts a woman has with the health care system. Therefore, the time when she receives postabortion care potentially is an important opportunity for her to receive contraceptive information and services.\(^2,3\)

Some women may want to become pregnant soon after having an incomplete abortion, and there is no reason to discourage them from doing so, barring medical reasons. Most women receiving postabortion care, however, do not want to be pregnant at this time. Furthermore, a woman who has risked the dangers of unsafe abortion has clearly expressed a desire to control her fertility and a need for help in preventing unwanted pregnancy.

At a minimum, all women receiving postabortion care need counseling and information to ensure that they understand:

- they can become pregnant again before the next menses,
- there are safe methods to prevent or delay pregnancy, and
- where and how they can obtain family planning services and methods.

Factors Limiting Access to Postabortion Family Planning

Throughout the developing world, many women are trapped in a dangerous cycle of repeat unwanted pregnancy and unsafe, often illegal abortion. Although the importance of linking postabortion care and family planning services seems obvious, these two types of care rarely are offered together. Typically, emergency treatment services for postabortion complications do not include provision of or referral to family planning counseling and method delivery.

\(^1\) Adapted from: Leonard AH and Ladipo OA: Post-Abortion Family Planning: Factors in Individual Choice of Contraceptive Methods. Advances in Abortion Care. 4(2), 1994.\(^1\)
Factors limiting provision of family planning services following emergency postabortion care include:

- Health care staff may have misconceptions about which contraceptive methods are appropriate.

- Providers of emergency postabortion care may not view the provision of contraceptive services as their responsibility.

- In hospitals, there may be administrative divisions between emergency postabortion services (Ob/Gyn department) and family planning services (Community Medicine department).

- Often emergency postabortion care and family planning services are not coordinated and may not be available on the same days or at the same location within institutions.

- Women who have been treated for incomplete abortion may not realize that their fertility will return soon and therefore may not seek contraceptive protection.

- Women may not know where family planning and other reproductive health services are available.

As a consequence, women are denied access to the means of preventing future unwanted pregnancies as well as being exposed to the risk of additional unsafe abortions, both of which contribute to the poor overall health status of women in many countries. In addition, the lack of comprehensive reproductive health services, including linkages of postabortion care to family planning and treatment for infertility and STDs, prevents women from obtaining the full range of care they need.

POSTABORTION FAMILY PLANNING

Postabortion family planning should include all essential components of good family planning care:

- Information and counseling about methods, their characteristics, effectiveness and side effects

- Choices among methods (e.g., short- and long-term, hormonal and nonhormonal)
• Assurance of contraceptive resupply
• Access to followup care
• Counseling about contraceptive needs in the context of the client's reproductive goals and need for protection against sexually transmitted diseases

Postabortion family planning also should be based on an individual assessment of every woman's situation:

• her personal characteristics, needs and reproductive goals;
• clinical condition; and
• the service delivery capabilities where she receives treatment and in the community where she lives.

A thorough discussion of these points is important because the circumstances leading to incomplete abortion vary. Incomplete abortion may reflect that the woman has not been successful in preventing unwanted pregnancy. She may not want to use or know how to use contraception, may not know where to obtain it, or may have stopped using a method. Providers can help the woman to select a family planning method that is appropriate for her if they understand the factors that led to the unwanted pregnancy. Like any clinical service, postabortion family planning services that address clients' individual needs and circumstances are more likely to provide acceptable and effective care than those based solely on standard protocols.

Remember: A woman's personal preferences, constraints and social situation may be as important in postabortion family planning as her clinical condition.

COUNSELING
The goals of postabortion family planning counseling are:

• to help the woman understand the factors that led to an unwanted pregnancy (if appropriate), in order to avoid repeating the situation;
• to help her and her partner (where appropriate) decide if she wants to use a contraceptive method;
• if she does, to help her (and her partner) choose an appropriate method; and
• to prepare her (and her partner) to use the method effectively.

**Remember:** Acceptance of contraception or of a particular contraceptive method should never be a prerequisite for obtaining emergency postabortion care.

Informed choice is key to a woman's ability to freely select a method that she can use effectively. **Free and informed choice** means that the client chooses a method voluntarily without coercion or pressure. It is based on a clear understanding of the benefits and limitations of the methods that are available. The client should understand that almost all methods can be used safely and effectively immediately after treatment of an incomplete abortion and that she can choose another method later if she wishes to change.

**Remember:** Clients who have made a free, informed choice of method are more likely to be satisfied with the method and to continue using it effectively.

Although many women do not want to become pregnant again immediately after an incomplete or unsafe abortion, some women may not want to make a decision about contraception at the time of postabortion care. A mechanism should be in place to ensure that these women can return for contraceptive services or are referred to a facility in their community. Women who do not choose a contraceptive method immediately should be offered condoms to take home and encouraged to return, with their partners if they wish, for further counseling.

**Family Planning Information**

The minimum information about family planning that a woman treated for incomplete abortion needs to understand before she is discharged is:

• She will be at risk of repeat pregnancy as soon as 2 weeks from treatment

• That there are a variety of safe contraceptive methods that can be used immediately to avoid pregnancy

• **Where** and **how** to get family planning services (at the time of treatment and also after discharge)
She also needs the following information, either at this time or later:

- Characteristics of all methods (e.g., whether they are reversible, whether they protect against GTIs and other STDs, side effects)

- How to use the selected method correctly, including where and how to get additional supplies (e.g., pills, condoms, injectables, or spermicidal tablets or foam)

- How to stop using the method or switch to another

Lack of understanding (possibly due to unclear instructions) may have led to misuse of a contraceptive method and to the previous unwanted pregnancy. "Too much technical information, however, can be as harmful as too little because it may overwhelm the woman and make it more difficult for her to make a decision." The information that the woman receives should be tailored to her needs. For example, a woman who has relied on unsafe abortion repeatedly because she thinks that oral contraceptives cause cancer, has a different need for information than a woman who used the pill incorrectly.

Table 9-1 presents some questions and suggested problem-solving responses regarding counseling and choice of method for women treated for incomplete abortion. It is designed to guide providers in enabling women to make family planning decisions.
### Table 9-1
Individual Factors and Counseling Recommendations and Rationales
(more than one may apply)

<table>
<thead>
<tr>
<th>If the woman...</th>
<th>Recommendations</th>
<th>Rationales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does not want to be pregnant soon</td>
<td>Consider all temporary methods.</td>
<td>Seeking treatment for incomplete abortion suggests that the woman does not want to be pregnant.</td>
</tr>
<tr>
<td>Is under stress 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>Stress and pain interfere with making free, informed decisions. The time of treatment for incomplete abortion is not a good time for a woman to make a permanent decision.</td>
</tr>
<tr>
<td>Was using a contraceptive method when she became pregnant</td>
<td>Assess why contraception failed and what problems the woman might have had using a method effectively. Help the woman choose a method that she will be able to use effectively. Make sure she understands how to use the method, get followup care and resupply, discontinue use and change methods.</td>
<td>Method failure, unacceptability, ineffective use or lack of access to supplies may have led to unwanted pregnancy. These factors may still be present and may lead to another unwanted pregnancy.</td>
</tr>
<tr>
<td>Had stopped using a method</td>
<td>Assess why the woman stopped using contraception (e.g., side effects, lack of access to resupply, etc.). Help the woman choose a method that she will be able to use effectively. Make sure she understands how to use the method, get followup care and resupply, discontinue use and change methods.</td>
<td>Unacceptability or lack of access may have led to unwanted pregnancy. These factors may still be present and may lead to another unwanted pregnancy.</td>
</tr>
<tr>
<td>Has a partner who is unwilling to use condoms or will prevent use of another method</td>
<td>If the woman wishes, include her partner in counseling. Protect the woman’s confidentiality (even if she does not involve her partner). Discuss methods that the woman can use without her partner’s knowledge (e.g., injectables). Do not recommend methods that the woman will not be able to use effectively.</td>
<td>In some instances, involving the male in counseling will lead to his use of and support for contraception; however, if the woman, for whatever reasons, does not want to involve a partner, her wishes should be respected.</td>
</tr>
<tr>
<td>Wants to become pregnant soon</td>
<td>Do not try to persuade her to accept a method. Provide information or a referral if the woman needs other reproductive health services.</td>
<td>If the woman has had repeated spontaneous abortions, she may need to be referred for infertility treatment.</td>
</tr>
</tbody>
</table>

Adapted from: Leonard and Ladipo, 1994.¹
COUNSELING PROCESS

Good family planning counseling focuses on the individual woman’s needs and situation, and good counselors listen to the woman’s questions and concerns. Counseling must be based on trust and respect between the client and the counselor.

Remember: All information exchanged in the counseling session should be treated confidentially.

Family planning counseling should help the client:

- consider her reproductive goals, including the need for protection against STDs;
- make free, informed choices about family planning; and
- understand how to use effectively or stop using her chosen method.

Keys to good counseling

A good counselor:

- Understands and respects the client's rights
- Earns the client's trust
- Understands the benefits and limitations of all contraceptive methods
- Understands the cultural and personal factors that affect a woman's (or a couple's) decision to use family planning and a particular method
- Encourages the client to ask questions
- Uses a nonjudgmental approach which shows the client respect and kindness
- Presents information in an unbiased, client-sensitive manner
- Actively listens to the client's concerns
- Recognizes when s/he cannot sufficiently help a client and refers the client to someone who can
- Understands the effect of nonverbal communication

Adapted from: World Health Organization, 1990.

Postabortion Care
The Counseling Session

The GATHER system is one method used to organize the elements of the counseling process. This acronym is designed to help counselors remember important points in effective counseling. GATHER (Table 9-2) is one approach to counseling after the treatment of incomplete abortion. In practice, counseling should be tailored to the individual circumstances and may follow a different sequence or technique.

<table>
<thead>
<tr>
<th>Steps</th>
<th>Activities</th>
</tr>
</thead>
</table>
| **GREET** | Introduce yourself to the client by name and express personal interest in her situation.  
If the woman is in a very busy area, try to find a private, calm environment where you can talk (e.g., a curtained area, treatment area that is not in use, a quiet hallway, courtyard).  
If the woman is lying in a bed, sit down next to her if possible.  
Ask if she feels able to talk about family planning. If she does not, check with her later or make arrangements for a referral.  
Explain that your conversation is confidential. Reassure the client that you will not repeat anything that she says. |
| **ASK** | Ask the woman how she is feeling and express concern.  
Assess whether counseling is appropriate at this time. (Is the woman physically and emotionally prepared to discuss family planning?) If not, check with her later or arrange for her to be counseled at another time.  
If her partner or family members are with her, ask the woman if she would like to speak privately or if she would like to involve her partner.  
Ask about her reproductive goals, including if she wants to become pregnant soon.  
Ask if she was using contraception before she became pregnant. If she was, find out if she:  
• used the method correctly,  
• discontinued use,  
• had any trouble using the method, or  
• has any concerns about the method.  
Ask about her age, marital status and number of pregnancies.  
Ask her what she has heard about the various contraceptive methods, and if she has a preference for a particular method. |
### Table 9-2
The GATHER Technique (continued)

<table>
<thead>
<tr>
<th>Steps</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TELL</strong></td>
<td>Tell the client about family planning methods without losing sight of her concerns and preferences. It is very important for the client to understand:</td>
</tr>
<tr>
<td></td>
<td>• She can become pregnant again very quickly (as soon as 2 weeks after a first-trimester incomplete abortion).</td>
</tr>
<tr>
<td></td>
<td>• That safe contraceptive methods are available</td>
</tr>
<tr>
<td></td>
<td>• Where she can find family planning services close to where she lives</td>
</tr>
<tr>
<td></td>
<td>Briefly describe the available methods, including characteristics and side effects, which will help her meet her reproductive goals.</td>
</tr>
<tr>
<td></td>
<td>If feasible, use support materials such as pamphlets, brochures, posters, flipcharts, film or videotape to emphasize points. If the woman wishes, let her handle samples of different methods.</td>
</tr>
<tr>
<td></td>
<td>Answer any questions or concerns that she has about family planning.</td>
</tr>
<tr>
<td><strong>HELP</strong></td>
<td>Help the client consider her needs, and what method best meets them. If she has expressed an interest in a particular method, try to determine together if it will meet her needs. Ask, for example, “Do you think you can remember to take a pill every day?” and “Can you tell your partner that you are using family planning?”</td>
</tr>
<tr>
<td></td>
<td>Be sure there are no clinical precautions for using a particular method in the immediate postabortion period (e.g., IUDs with severe bleeding or anemia).</td>
</tr>
<tr>
<td></td>
<td>Do not choose a method for her.</td>
</tr>
<tr>
<td></td>
<td>Supply method as needed.</td>
</tr>
<tr>
<td><strong>EXPLAIN</strong></td>
<td>Explain how the chosen method works and how it should be used.</td>
</tr>
<tr>
<td></td>
<td>Explain the normal side effects, as well as any warning signs of more serious complications, and what to do if they occur.</td>
</tr>
<tr>
<td></td>
<td>Ask the client to repeat the information and instructions to be sure she understands.</td>
</tr>
<tr>
<td></td>
<td>Ask if the woman has questions and provide answers.</td>
</tr>
<tr>
<td></td>
<td>Give information about resupply, return visits, etc.</td>
</tr>
</tbody>
</table>
## Table 9-2
### The GATHER Technique (continued)

<table>
<thead>
<tr>
<th>Steps</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REFER</strong></td>
<td>Refer the client to an appropriate clinic for followup care as needed. For most women, a clinic near home is the best option.</td>
</tr>
<tr>
<td></td>
<td>If a contraceptive method was provided after treatment of incomplete abortion, the followup visit should:</td>
</tr>
<tr>
<td></td>
<td>• assess whether the client is in good health and satisfied with the method she is using,</td>
</tr>
<tr>
<td></td>
<td>• address side effects that may have occurred,</td>
</tr>
<tr>
<td></td>
<td>• provide support and encouragement to help the client continue using contraception effectively, and</td>
</tr>
<tr>
<td></td>
<td>• help the client change or stop a method when appropriate.</td>
</tr>
<tr>
<td></td>
<td>If free, informed choice was not possible at the time of treatment, the followup visit should include full family planning counseling. All of the steps in GATHER should be followed.</td>
</tr>
<tr>
<td></td>
<td>Always ask the woman if she has any questions or concerns and provide answers.</td>
</tr>
<tr>
<td></td>
<td>Always assess if the woman needs other reproductive health care and provide care or referral as appropriate.</td>
</tr>
</tbody>
</table>

Adapted from: Lettenmaier and Gallen, 1987.5

### POSTABORTION CONTRACEPTION

A woman's fertility generally returns within 2 weeks after an incomplete abortion in the first trimester. Unfortunately, many women are not aware of this because it differs from the postpartum period where the return of fertility is delayed. Because of the subsequent risk of repeat pregnancy, use of postabortion family planning should be initiated as soon as possible.

In general, all modern methods can be used immediately after emergency postabortion care, provided:

- there are no severe complications requiring further treatment,
- the client receives adequate counseling, and
- the provider screens for any precautions for using a particular contraceptive method.
In addition, it is recommended that women not have sexual intercourse until postabortal bleeding stops (usually 5 to 7 days) and any complications are resolved. Finally, natural family planning is not recommended until a regular menstrual pattern returns.

Table 9-3
Guidelines for Contraceptive Use by Clinical Condition

<table>
<thead>
<tr>
<th>Clinical Condition</th>
<th>Precautions</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| No complications after treatment of incomplete abortion | **Natural family planning:** do not recommend until a regular menstrual pattern returns.  
**Female voluntary sterilization:** the time of treatment for incomplete abortion usually is not the best time for clients to make decisions about methods that are permanent.  
**Diaphragm or cervical cap:** should be refit after a second-trimester incomplete abortion. | Consider all temporary methods.  
Norplant implants: can begin use immediately.  
Injectables (DMPA, NET-EN): can begin use immediately.  
IUD: can begin use immediately.  
Oral contraceptives (combined or progestin-only): can begin use immediately.  
Condoms (male/female): can be used when sexual activity is resumed.  
Spermicidal foams, jellies, tablets, sponge or film: can be used when sexual activity is resumed.  
Diaphragm or cervical cap: can be used when sexual activity is resumed. |
| Confirmed or presumptive diagnosis of infection  | **Female voluntary sterilization:** do not perform procedure until risk of infection is ruled out or infection is fully resolved (approximately 3 months).  
IUD: do not insert until risk of infection ruled out or infection fully resolved (approximately 3 months). | Norplant implants: can begin use immediately.  
Injectables (DMPA, NET-EN): can begin use immediately.  
Oral contraceptives (combined or progestin-only): can begin use immediately.  
Condoms (male/female): can be used when sexual activity is resumed.  
Spermicidal foams, jellies, tablets, sponge or film: can be used when sexual activity is resumed.  
Diaphragm or cervical cap: can be used when sexual activity is resumed. |
| Signs and symptoms of sepsis/infection     |                                                                              |                                                                                  |
| Signs of unsafe or unclean induced abortion |                                                                              |                                                                                  |
| Unable to rule out infection               |                                                                              |                                                                                  |
### Table 9-3
Guidelines for Contraceptive Use by Clinical Condition (continued)

<table>
<thead>
<tr>
<th>Clinical Condition</th>
<th>Precautions</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injury to genital tract</td>
<td>Female voluntary sterilization: do not perform procedure until serious injury healed.</td>
<td>Norplant implants: can begin use immediately.</td>
</tr>
<tr>
<td>Uterine perforation (with or without bowel injury)</td>
<td>IUD: do not insert until serious injury healed.</td>
<td>Injectable (DMPA, NL-EN): can begin use immediately.</td>
</tr>
<tr>
<td>Serious vaginal or cervical injury, including chemical burns</td>
<td>Spermicidal foams, jellies, tablets, sponge or film: do not begin use until vaginal or cervical injury healed.</td>
<td>Oral contraceptives (combined or progestin-only): can begin use immediately.</td>
</tr>
<tr>
<td></td>
<td>Diaphragm or cervical cap: do not begin use until vaginal or cervical injury healed.</td>
<td>Condoms (male/female): can be used when sexual activity is resumed.</td>
</tr>
<tr>
<td>Severe bleeding (hemorrhage) and related severe anemia (Hb &lt; 7 gm/dl or Hct &lt; 20)</td>
<td>Female voluntary sterilization: do not perform procedure until the cause of hemorrhage or anemia resolved.</td>
<td>IUD (progestin-releasing): can be used with severe anemia (decreases menstrual blood loss).</td>
</tr>
<tr>
<td></td>
<td>Progestin-only pills: use with caution until acute anemia improves.</td>
<td>Combined oral contraceptives: can begin use immediately (beneficial when hemoglobin is low).*</td>
</tr>
<tr>
<td></td>
<td>Norplant implants: delay insertion until acute anemia improves.</td>
<td>Condoms (male/female): can be used when sexual activity is resumed.</td>
</tr>
<tr>
<td></td>
<td>Injectable (DMPA, NET-EN): delay starting until acute anemia improves.</td>
<td>Spermicidal foams, jellies, tablets, sponge or film: can be used when sexual activity is resumed.</td>
</tr>
<tr>
<td></td>
<td>IUD (inert or copper-bearing): delay insertion until acute anemia improves.</td>
<td>Diaphragm or cervical cap: can be used when sexual activity is resumed.</td>
</tr>
</tbody>
</table>

*Some experts recommend starting COCs exactly 1 week postabortion, as there is a suggestion of a slight increase in coagulation factors measurable in the first few days after first trimester abortion, in women starting COCs immediately. If started later than 1 week, COCs may not be immediately effective because the ovary resumes follicular development as soon as 1 week after first trimester abortion."
Table 9-3
Guidelines for Contraceptive Use by Clinical Condition (continued)

<table>
<thead>
<tr>
<th>Clinical Condition</th>
<th>Precautions</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second-trimester incomplete abortion</td>
<td>Female voluntary sterilization: advisable to delay procedure until uterus</td>
<td>Norplant implants: can begin use immediately.</td>
</tr>
<tr>
<td></td>
<td>returns to prepregnancy size (4 to 6 weeks). If this is not possible, use</td>
<td>Injectable (DMPA, NET-EN): can begin use immediately.</td>
</tr>
<tr>
<td></td>
<td>minilap technique.</td>
<td>Oral contraceptives (combined or progestin-only): can begin use immediately.</td>
</tr>
<tr>
<td></td>
<td>IUD: size of uterus requires skilled, experienced provider for high fundal</td>
<td>Condoms (male/female): can be used when sexual activity is resumed.</td>
</tr>
<tr>
<td></td>
<td>placement. If this is not possible, delay insertion for 4 to 6 weeks.</td>
<td>Spermicidal foams, jellies, tablets, sponge or film: can be used when sexual activity is resumed.</td>
</tr>
<tr>
<td></td>
<td>Diaphragm or cervical cap: should be refit when uterus returns to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>prepregnancy size (4 to 6 weeks).</td>
<td></td>
</tr>
</tbody>
</table>

Source: Blumenthal and McIntosh, 1995; Leonard and Ladipo, 1994.12

Because little research exists on contraceptive use following complications such as severe bleeding, infection or uterine perforation, appropriate contraceptive choices will depend largely on the severity and outcome of such complications.

Finally, counseling women about methods of postabortal contraception must include assessment of their risk for contracting sexually transmitted GTIs and other STDs, especially hepatitis B and HIV/AIDS. All women should be advised that the only contraceptive methods that provide protection against GTIs and other STDs are male and female condoms and, to a lesser extent, spermicides. In combination with more effective contraceptive methods, these methods can significantly reduce risk of both unintended pregnancy and STDs.

Contraception After Postabortion Complications

Women who have been treated for postabortal complications may have medical conditions that could affect the selection of a contraceptive method. Table 9-4 presents a number of elements that should be considered in the selection of a contraceptive method.
<table>
<thead>
<tr>
<th>Method</th>
<th>Timing After Incomplete Abortion</th>
<th>Advantages</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Fitted Barriers</td>
<td>May begin use as soon as sexual intercourse is resumed.</td>
<td>• No method-related health risks</td>
<td>• Less effective than IUD or hormonal methods</td>
</tr>
<tr>
<td>(latex and vinyl male/female</td>
<td></td>
<td>• Inexpensive</td>
<td>• Requires use with each episode of intercourse</td>
</tr>
<tr>
<td>condoms; vaginal sponge</td>
<td></td>
<td>• Good interim method if initiation of another method must be postponed</td>
<td>• Requires continued motivation</td>
</tr>
<tr>
<td>and suppositories (foaming</td>
<td></td>
<td>• No medical supervision required</td>
<td>• Resupply must be available</td>
</tr>
<tr>
<td>tablets, jelly or film)</td>
<td></td>
<td>• Condoms (latex and vinyl) provide protection against GTIs and other STDs</td>
<td>• May interfere with intercourse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(HBV and HIV/AIDS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Easily discontinued</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Effective immediately</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fitted Barriers Used</td>
<td>Diaphragm can be fitted immediately after first-trimester incomplete</td>
<td>• No method-related health risks</td>
<td>• Less effective than IUD or hormonal methods</td>
</tr>
<tr>
<td>With Spermicides</td>
<td>incomplete abortion; after second-trimester incomplete abortion, fitting</td>
<td>• Inexpensive</td>
<td>• Requires use with each episode of intercourse</td>
</tr>
<tr>
<td>(diaphragm or cervical cap</td>
<td>should be delayed until uterus returns to prepregnancy size (4 to 6</td>
<td>• No medical supervision required</td>
<td>• Requires continued motivation</td>
</tr>
<tr>
<td>with foam or jelly)</td>
<td>weeks). Delay fitting cervical cap until bleeding has stopped and uterus</td>
<td>• Some protection against GTIs and other STDs (HBV and HIV/AIDS)</td>
<td>• Resupply must be available</td>
</tr>
<tr>
<td></td>
<td>has returned to prepregnancy size.</td>
<td>• Easily discontinued</td>
<td>• Associated with urinary tract infections in some users</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Effective immediately</td>
<td>• Requires fitting by trained service provider</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral Contraceptives</td>
<td>May begin pill use immediately, preferably on the day of treatment.</td>
<td>• Highly effective</td>
<td>• Requires continued motivation and daily use</td>
</tr>
<tr>
<td>(combined and progestin-only)</td>
<td></td>
<td>• Can be started immediately even if infection is present</td>
<td>• Resupply must be available</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Can be provided by non-physicians</td>
<td>• Effectiveness may be lowered with long-term use of certain medications</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Do not interfere with intercourse</td>
<td>(e.g., rifampin, dilantin, griseofulvin)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Condoms recommended if at risk for GTIs and other STDs (HBV and HIV/AIDS)</td>
</tr>
<tr>
<td>Method</td>
<td>Timing After Incomplete Abortion</td>
<td>Advantages</td>
<td>Remarks</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Injectables (DMPA, NET-EN) | May be given immediately after incomplete abortion in the first or second trimester. May be appropriate for use if a woman wants to delay choice of long-term method. | • 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 amenorrhea; 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) |
| Progestin-Only Implants (Norplant implants) | May be given immediately after incomplete abortion. If adequate counseling and informed decision-making cannot be guaranteed, insertion must be delayed and an interim method provided. Should not be inserted until hemorrhage is controlled. | • Highly effective  
• Long-term contraception (implants effective for 5 years)  
• Immediate return to fertility on removal  
• Does not interfere with intercourse  
• No supplies needed by client | • May cause irregular bleeding (especially spotting) or amenorrhea  
• Trained provider required to insert and remove  
• Cost-effectiveness depends on long-term use  
• Condoms recommended if at risk for GTIs and other STDs (HBV and HIV/AIDS) |
| IUD                  | Delay insertion until serious injury is healed, hemorrhage is controlled or acute anemia improves. Delay insertion until infection has been resolved (3 months). First Trimester: IUDs can be inserted if the risk or presence of infection can be ruled out. If adequate counseling and decision making cannot be guaranteed, delay insertion and provide an interim temporary method. Second Trimester: Delay for 6 weeks unless equipment and expertise available for immediate postabortal insertion. | • Highly effective  
• Long-term contraception  
• Immediate return to fertility following removal  
• Does not interfere with intercourse  
• No supplies needed by client  
• Requires only monthly checking for strings (by client)  
• Only one followup visit needed unless there are problems | • May increase menstrual bleeding and cramping during the first few months  
• Uterine perforation can occur during insertion  
• May increase risk of PID and subsequent infertility for women at risk for GTIs and other STDs (HBV and HIV/AIDS)  
• Trained provider required to insert and remove |
### Table 9-4
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>
</table>
| Female Voluntary Sterilization (VS)   | VS after a first-trimester abortion is similar to an interval procedure; after a second-trimester abortion it is more similar to a postpartum procedure. Technically, VS procedures usually can be performed immediately after treatment of postabortion complications unless infection or severe blood loss is present. Do not perform until infection is fully resolved (3 months) or injury healed. | • Permanent method  
• Most effective female method  
• Once completed, no further action required  
• Does not interfere with intercourse  
• No change in sexual function  
• No long-term side effects  
• Immediately effective | • Adequate counseling and fully informed consent are required before VS procedures; this is often not possible at the time of emergency care.  
• Slight possibility of surgical complications  
• Requires trained staff and appropriate equipment  
• Condoms recommended if at risk for GTIs and other STDs (HBV and HIV/AIDS) |
| Natural Family Planning                | Not recommended for immediate postabortion use. The first ovulation after an abortion will be difficult to predict and the method is unreliable until after a regular menstrual pattern has returned. | • No cost associated with method | • Unreliable immediately after abortion  
• Alternative methods recommended until resumption of normal cycle  
• Requires extensive instruction and counseling  
• Condoms recommended if at risk for GTIs and other STDs (HBV and HIV/AIDS)  
• Requires continued motivation and a thorough understanding of how to use the method by the woman and her partner |

Adapted from: Blumenthal and McIntosh, 1995; Benson et al, 1992.²⁷

### Service Delivery Capabilities
A woman’s ability to use a method effectively is based in part on the resources of the community where she lives. To ensure continuity of care, health care providers must consider a woman’s family planning needs relative to the overall health care system. If a woman has travelled far from her home for treatment of postabortion complications, family planning providers need to know what services she will have access to when she returns home in order to help her choose an appropriate method. If provision of either counseling or methods is not possible on-site, refer the woman to a provider of these services in her community. **Table 9-5** summarizes
factors to consider in assessing the local capability of delivering family planning services.

<table>
<thead>
<tr>
<th>Facility, Provider and Community Capability</th>
<th>Issues to Consider</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunity, space and private environment for counseling</td>
<td>Emergency care settings may be too crowded and hectic to ensure privacy and informed choice. Do not give permanent or long-acting methods (e.g., Norplant implants or injectables) without adequate counseling, and assurance that the client has been able to make a well considered decision not influenced by stress, pain or other factors.</td>
<td>Arrange space and time for private counseling. If adequate counseling is impossible, offer temporary methods, and provide referrals for further counseling regarding other methods.</td>
</tr>
<tr>
<td>Choice of contraceptive methods</td>
<td>Do not limit the range of methods offered. Limiting the availability of methods will deny some women access to their preferred methods.</td>
<td>Make a range of methods available. Reduce provider bias for or against particular methods by educating providers about appropriate use of all methods.</td>
</tr>
<tr>
<td>Links with family planning resources in the community</td>
<td>Consider the woman's access to followup care and resupply in recommending methods.</td>
<td>Make sure counselors and providers know about family planning resources throughout the area served. Establish referral links among family planning resources or between postabortion care and family planning services.</td>
</tr>
</tbody>
</table>

Source: Leonard and Ladipo, 1994.¹

While provider-dependent methods may not be the best choice for women with little or no access to ongoing care, women with little access to resupply of condoms or pills may find methods that do not require resupply their only workable option. Providers need to help clients think through issues such as convenience or supply and where they would go if they experienced problems after getting long-term or permanent methods.

Providers should be particularly aware of the cost to the woman of a contraceptive method. This is a key principle in limiting use of family planning. High costs of services and methods can prevent women from having access to contraceptives and dramatically influence their ability and willingness to continue to use them.
REFERENCES


ORGANIZING AND MANAGING SERVICES

BACKGROUND

To be effective in preventing postabortion mortality, emergency postabortion care must be widely accessible throughout the existing health system to all women on a 24-hour basis. Health care facilities and trained medical providers, however, usually are concentrated in cities, leaving women in rural and remote areas, where most of the world’s population lives, either unserved or underserved. In order to improve the accessibility of postabortion care, health services should include:

- Provision of care at the lowest level which has the trained staff and appropriate equipment to provide safe care (see Table 1-1)
- Effective referral networks and practices
- Adequate transport between levels of care
- Coordination between the units within larger referral facilities

With the exception of cases of severe complications, most emergency postabortion care can be appropriately provided in existing facilities and with very little specialized equipment.

Offering postabortion care at the lowest level possible provides women with care closer to their homes. Reducing the time spent in seeking and waiting for emergency postabortion care removes a major obstacle many women face in obtaining care.

It is the manager’s responsibility to see that facilities and equipment do not become barriers to provision of the safest possible postabortion care at the lowest feasible level in the health care system. In most cases, minor changes in existing facilities, changes in patient flow or obtaining minimal new equipment can improve the safety and efficiency of postabortion care and will allow for increased service provision. Such minor changes can greatly increase the number of service delivery points available for emergency postabortion care.

---

Organizing and Managing Services

Through the first trimester of pregnancy, emergency care can be provided for uncomplicated incomplete abortions at the primary or first referral level, since sophisticated medical equipment, specialized staff and operating rooms are usually not required. Care can usually be provided in an outpatient area of the emergency room. MVA can be carried out by trained staff in a simple treatment room and the woman usually can be released after a short recovery period.

Care for incomplete abortions beyond the first trimester and serious complications should be provided in a setting with more specialized facilities and skilled personnel. A full-scale operating room is not required unless laparotomy is anticipated or general anesthesia is needed. Hospitalization often is required; however, many services deliver emergency care for uncomplicated second-trimester incomplete abortions on an outpatient basis.

Every effort should be made to provide clinical care and counseling in a private environment. In some facilities, a separate room may be available for treatment or for counseling and recovery but this is not necessary. Privacy can be achieved by placing screens around a bed, cot or couch in an outpatient unit or emergency room.

The facility requirements for postabortion care by level of the health care system, based on the typical staffing pattern and the elements of care that can be provided at each level, are described in Chapter 1 (see Table 1-1).

While the majority of emergency postabortion care activities can be provided at lower levels in any health system, the most severe complications require ready access to pre-arranged referral sites. Prompt communication, decision-making and transfer of patient information between the units involved are important elements of any referral system.

Indications for referral should be clearly stated in written service protocols and should be reviewed regularly to ensure that they remain relevant. Furthermore, referral arrangements for each level of care should be communicated to all relevant staff for implementation as required.

Life-threatening hemorrhage, shock and surgical emergencies can occur anywhere and immediate transport can save many women’s lives, particularly those who have serious complications and live in remote areas. In small clinics without
ready ambulance service, emergency transfer will require ingenuity and planning. It is important for managers to consider all locally available means of transportation. Community resources for transportation may include: police, military, agricultural extension services, government institutions, civil protection organizations, local non-governmental organizations such as churches and missions, and individual residents.

All available local communication channels can be used to call for transportation to transfer women to referral facilities. Community resources such as shortwave radios or telephones can support communication channels available in the facility. When services outside the health system are included in transportation protocols, standing arrangements for the use of these services should be arranged by the program manager to ensure that time is not lost in making arrangements when emergencies occur. These protocols and arrangements should be periodically evaluated and updated by managers. Any changes should be communicated to all staff to avoid unexpected difficulties during emergency situations.

In most cases, emergency postabortion care can and should be delivered in an outpatient setting in the emergency room with minimal use of anesthesia. This will require appropriately trained staff and adequate equipment that can generally be made available at the primary or first referral level. Emergency care must be available 24 hours a day. Shifting care out of operating rooms (theaters) and into treatment rooms at the primary and first referral level is a major benefit for any hospital or clinic and for the women they serve. Some of the benefits in offering postabortion care at lower levels of the health system on an outpatient basis are:

- Improved access to services by provision of postabortion care as an outpatient service and treatment of some women at lower level facilities who would otherwise be referred
- Reduced delay in treatment by reduced use of hospital beds and operating room facilities
- More timely treatment, since transportation and waiting time required for referral and/or inpatient admission procedures are eliminated
- Increased availability of operating room facilities and staff for other procedures
Organizing and Managing Services

Decreased number of cases that must be referred to the secondary and tertiary levels, allowing those centers to focus on care requiring the extra resources available only at the highest level of the health care system.

CASELOAD CONSIDERATIONS

In planning for emergency postabortion care, it is important to know what the current caseload is and what the future caseload is likely to be. Current caseload can be determined by reviewing hospital and clinic records on women treated in the past. Problems stemming from a high caseload may be obvious to the manager. For example, women waiting for treatment may be filling the hallways, there may be a lengthy wait for treatment, or the bed occupancy rate may be too high. These findings could indicate a particularly high caseload or poor patient flow (see below).

Managers should monitor the current caseload frequently and remain alert to developments that could affect the projected caseload. Some of the factors that cause the caseload to vary include changing access to contraception, changes in population distribution, efforts to encourage particular groups (such as adolescents) to seek care, changes in the structure of the health system or the referral network, reassignment of staff, construction of additional health care facilities in the community, introduction of similar services in the same catchment area, and changes in abortion laws.

Patient Flow

Effective systems for managing the flow of patients through a facility ensure that, regardless of fluctuations in caseload, women receive care in a logical sequence and without unnecessary delay. Managers can often improve the quality of care significantly by organizing existing resources more efficiently. Three critical questions that managers can examine to improve patient flow are:

- What activities must be carried out in a particular area and in what order?
- Where and why does crowding occur?
- How could use of space and personnel be modified to increase the efficiency of activities and better serve patients?

Examples of ways to make patient flow more efficient include: performing MVA in the emergency room rather than referring patients to the gynecology service, treating most cases on an...
Organizing and Managing Services

outpatient basis and using treatment rooms rather than operating rooms.

Use of space and staff to encourage smooth patient flow and to minimize delays may be difficult in an emergency room setting. Presentation of patients for emergency postabortion care is unpredictable, so the manager must plan for fluctuations in caseload and maintain service delivery 24 hours a day.

Coordination of services provided within a single facility is an important issue in improving postabortion care. It is the responsibility of facility managers to see that linkages between units providing all elements of postabortion care are made and function smoothly. The “inreach” concept of ensuring that all staff at a facility are oriented to women’s needs and how/where to refer for services can help and support these formal linkages.

Unless units are well coordinated, many women will not receive needed care even if official protocols specify appropriate and complete care. For example, a woman with an incomplete abortion may be treated in the emergency room but never receive family planning services unless linkages between departments either make those services available in the emergency room or referrals to a family planning clinic are made regularly.

Managers of some first referral, secondary and tertiary care centers in particular, must consider the units within the hospital involved in postabortion care and review the linkages and communication among them. Units which need to be coordinated may include:

- Emergency room
- Obstetrics/gynecology and nursing departments
- Operating room or theater
- Family planning clinic
- Outpatient clinic
- Social work unit
- Central equipment sterilization services
- Pharmacy and equipment supply units
Inadequate communication and linkages at individual service points can restrict access to high quality services.

Quality postabortion care for incomplete abortions does not require extensive specialized equipment and drugs (see Appendices F and G). The manager must be concerned with the logistics of obtaining necessary equipment and supplies, seeing that they are available when and where services are delivered, and supervising their maintenance. S/he must consider the initial investment for equipment, the recurring cost of disposable supplies and the cost savings of preventing serious complications. Some important considerations regarding the purchase, supply and maintenance of equipment are listed below:

- What is the current status of emergency postabortion care services and what material resources exist?
- What type of equipment and supplies are needed?
- What quantity of equipment and supplies will be needed?
- What are the inventory control issues?
- What policies and procedures are needed to manage the logistics of obtaining and maintaining equipment?

These questions and some managerial responses to each are grouped for discussion below.

- Medical records unit
- Central laboratory

The equipment needs for treatment of uncomplicated incomplete abortion are not elaborate and most of the items will be part of the existing inventory of primary and first referral-level facilities. Likewise, the equipment needed for treatment of serious complications should be available at institutions that provide general and/or gynecological surgery.

In some cases the manager may wish to adapt current facilities or procedures to deliver more efficient or broader postabortion-related care (e.g., establishing an outpatient treatment room). In this context, additional equipment and supplies may be required to create new treatment areas. In other cases the addition of only a few simple pieces of equipment, such as a light or examining table, is needed.
In any setting, particular care must be taken to ensure that the procedure area is well-stocked with consumable supplies in order to avoid interruptions in care.

Chapter 6 and Appendices F and G list the equipment and drug requirements for postabortion care. All facilities must have supplies for resuscitation as well as drugs to control bleeding readily available. These supplies must be maintained in adequate supply to meet emergency needs and replenished promptly when used.

Where there is a choice, the costs and benefits of disposable supplies (those discarded after use) and nondisposable items (those processed for reuse) must be carefully weighed. Disposable supplies are generally more expensive. Since they must be reordered regularly, these supplies also are subject to shortages in stock and problems with shipment. Furthermore, disposal of such supplies must follow standard infection prevention measures (even disposable items should be decontaminated, if possible, before discarding) (see Chapter 4).

When nondisposable supplies and equipment are used, staff must be trained in how to decontaminate, clean, process and maintain the equipment properly as well as be supervised regularly in these tasks. Costs will be incurred to purchase the reagents needed for sterilization or high-level disinfection. Nondisposable supplies will require particular diligence in the adherence to recommended infection prevention practices (see Chapters 4 and 8) and may be more expensive initially. The manager must balance these factors before making a decision about the use of disposable or nondisposable items.

Some aspects of postabortion care, such as processing instruments or conducting laboratory tests, may be carried out centrally in larger service facilities at the first referral level and above. In these cases, the unit manager may not need to make provisions for equipment and supplies related to these activities.

The type of equipment used can also be influenced by such factors as the availability and dependability of electricity. If electricity is available but not dependable and electric equipment is to be used, a standby generator or manual backup equipment must be purchased and maintained in good working order. In many cases, nonelectric equipment may be preferable for other reasons. The complexity of equipment and the availability of replacement parts and repair services must
Organizing and Managing Services

also be considered when determining the type of equipment to be purchased.

**Quantity of Equipment and Supplies Needed**

Estimates of the projected caseload and regular monitoring of services determine the quantity of equipment and supplies required. An adequate stock of equipment must be on hand in the unit during all hours when services are provided. If equipment and instruments are processed centrally rather than within the unit where they are used, it is especially important to have an adequate supply of equipment and to have sterilized equipment available in the treatment area whenever it is needed.

**Inventory Control and Maintenance**

Inventory control and equipment maintenance are essential to ensure that services will not be disrupted because equipment is missing or broken or supplies are out of stock. In planning an inventory control and maintenance system, some issues that the manager must plan for are:

- The quantity and types of equipment and supplies that must be kept in stock
- Adequate storage facilities
- Monitoring stock levels
- Reordering stock
- Security of stock
- Rotation of stock by "first expired, first out" (i.e., the oldest items or those purchased earliest should be used first)
- Process for supply within the institution for all sites of service delivery (e.g., there may be procedure rooms in both the emergency room and the gynecology department)
- Process for supply between facilities for centrally controlled systems (e.g., instrument processing)
- Routine equipment maintenance
- Equipment repair
- Monitoring equipment maintenance and supply logistics

Location (urban or rural) of the postabortion care facility influences both the ready availability of supplies and equipment and the planning time frame required for ordering and receiving
Policies and Procedures Regarding Equipment and Supplies

Disposable items. For instance, if a hospital is a 2-day journey from the nearest provider of essential supplies and the communications and transportation are unreliable, the manager will need to allow several weeks between the placement of an order and its receipt to be assured of timely delivery. Systems must be developed to monitor the inventory of supplies so that shortages may be avoided.

The manager should also consider the issues involved in the delivery system that will be used for future supplies. If equipment will be delivered by an outside agency or individual, a staff member should be responsible for keeping records of items ordered and received. If supplies must be obtained in person, a staff member should be made responsible and provided with sufficient transportation and capability to pay for supplies.

Attention should be given to the security of supplies and the appropriateness of storage facilities. For example, drug expiration dates must be checked and proper temperature and humidity maintained for storage of sensitive drugs and other supplies, and equipment securely stored to prevent theft.

Program managers must ensure that staff members are designated to be responsible for all of the tasks listed above. Special training may be needed to maintain and repair surgical and other mechanical equipment. In such cases, training should be arranged and the trainees should be monitored regularly to ensure that skills learned are being applied.

Postabortion care service managers must ensure that policies and procedures for storage and handling of all medical equipment and supplies are available and followed. Each institution should develop written protocols for routine maintenance of equipment and criteria for monitoring and evaluating each of the following issues:

- An approved list of medical supplies that may be ordered
- Inventory control, including records of inventory received, distributed or discarded
- Rotation of supplies using the "first expired, first out" system (this is especially important for any material bearing expiration dates)
- Procedure for storage and handling, security and safe discarding of all disposable (single-use) items, such as needles and syringes
Organizing and Managing Services

- Preventive maintenance
- Plans for continued operation in the event of equipment breakdown or malfunction
- Cleaning, sterilization or HLD, and dating of equipment and supplies
- Wrapping and storage instructions for sterilized or high-level disinfected equipment and instruments
- Management of contaminated equipment and supplies

REFERENCES


GENERAL REFERENCES


Centers for Disease Control: Logistics Guidelines for Family Planning Programs. Atlanta, Georgia, Centers for Disease Control, Center for Health Promotion and Education, Division of Reproductive Health, 1987.


APPENDIX A

ASSESSMENT AND TREATMENT OF COMPLICATIONS†

BACKGROUND Any woman who has experienced an incomplete abortion, particularly if it is the result of an unsafe abortion, may also suffer from one or more serious conditions: shock, severe vaginal bleeding, infection/sepsis or intra-abdominal injury including uterine perforation. In addition, these conditions may occur as rare complications of the MVA procedure.

This appendix outlines the steps in treatment of each condition; they are discussed separately for the sake of clarity, even though it may be necessary to initiate treatment for more than one condition at the same time. Moreover, because of the number of issues that need to be considered in providing emergency postabortion care, the general principles of care are described more fully in Appendix B.

SHOCK Shock is a life-threatening condition that requires immediate and intensive treatment to save the patient's life. Shock is the loss of oxygen supply and blood flow to the tissues due to failure of the circulatory system. It may be due to many causes; however, in the case of incomplete abortion, shock usually is caused by blood loss (hemorrhage), infection/sepsis or trauma.

Patients suffering from shock must be treated immediately and watched closely because their condition can worsen quickly. The primary goal in treating shock is to stabilize the patient; that is, to restore the volume and efficiency of the circulatory system as measured by an increase in the blood pressure and decrease in the pulse and breathing rates.

Signs of shock are:

- Fast, weak pulse (rate ≥ 110 per minute)
- Low blood pressure (diastolic < 60)
- Pallor (especially of inner eyelid, palms or around the mouth)

Assessment and Treatment of Complications

Initial Treatment

The first steps in the care of shock can be life-saving.

- Check vital signs. Keep the patient warm because hypothermia is a danger, but do not apply external heat sources. Turn the woman's head to the side so that if she vomits, she is less likely to inhale the vomit. Do not give her anything (fluids, medicine or food) by mouth, as surgery may be needed.

- Make sure the airway is open. If available, give oxygen, 6-8 liters/minute by mask or nasal cannula.

- Raise the patient's legs or the foot of the bed to help blood return to the heart. If this causes difficulty in breathing, she may be experiencing heart failure and pulmonary edema; in this case, lower her legs and raise her head to relieve fluid pressure on the lungs.

Note: At this point if IV fluids and other medications are not available, make arrangements to transfer the patient immediately to a center where they are.

Be sure to:

- Explain everything to the patient's family

- Send a referral note (see Appendix C for an example)

- If possible, send two people to the hospital with the patient to give blood

- To restore fluid volume, give IV fluids immediately (Ringer's lactate or isotonic saline solution at rate of 1 liter in 15 to 20 minutes). It may take 1 to 3 liters of IV fluids to stabilize a patient who has lost a lot of blood or is in shock. Do not give fluids by mouth.

- A hemoglobin of 5 g/100 ml or less or a hematocrit of 15 or less is life-threatening and will require blood transfusion.
Assessment and Treatment of Complications

Definitive Treatment

Once the initial steps have been taken to stabilize the patient, treat the underlying cause of shock promptly while continuing to check her vital signs, urine output and IV fluids closely. Because the cause of shock in patients with incomplete abortion often is retained POC, emptying the uterine cavity by MVA (see Chapter 6) is an essential part of definitive management.

SEVERE VAGINAL BLEEDING

Prompt treatment of excessive blood loss is critical in any health care situation; delays in stopping the bleeding and replacing fluid or blood volume can be fatal. If a woman has prolonged or excessive vaginal bleeding and symptoms of incomplete abortion, the bleeding usually is caused by retained POC or by injury to the vagina, cervix or uterus, including perforation of the uterus (see below). These injuries usually mean that the patient (or someone else) attempted to end the pregnancy. Therefore, she may have an infection (from unsafe methods or contaminated instruments) and need antibiotics. Damage from caustic chemical agents used to cause an abortion also can cause severe bleeding. Severe vaginal bleeding after an MVA procedure is quite rare but also should be managed promptly. During assessment and treatment of severe vaginal bleeding, the blood pressure and heart rate (pulse) should be watched closely, as shock may develop at any time.

Signs of severe vaginal bleeding are:

- Heavy, bright red, vaginal bleeding with or without clots
- Blood-soaked pads, towels or clothing

Postabortion Care

• If there is any indication that infection may be present—including fever, chills or pus—take blood cultures (if available) and give broad spectrum antibiotics (IV or IM).

• Laboratory tests: hemoglobin or hematocrit; complete blood count, including platelet; Rh type and crossmatch blood; draw blood for electrolytes and blood urea nitrogen (BUN) (if available) and measure urine output. Hourly urine output lower than 50 ml is suggestive of decreased circulatory fluid volume (hypovolemia) and may represent acute renal failure.

• Check for and remove any POC present in the vagina.
Assessment and Treatment of Complications

- Pallor (especially of inner eyelids, palms or around the mouth)
- Dizziness, fainting

**Initial Treatment**

- Check vital signs. Raise the woman's legs or the foot of the bed.
- Make sure the woman's airway is open. If available, give oxygen 6-8 liters/minute by mask or nasal cannula.
- To restore fluid volume, give IV fluids immediately (Ringer's lactate or isotonic saline solution at rate of 1 liter in 15 to 20 minutes). It may take 1 to 3 liters of IV fluids to stabilize the patient who has lost a lot of blood or is in shock.
- A hemoglobin of 5 g/100 ml or less or a hematocrit of 15 or less is life-threatening and will require blood transfusion.
- If there is any indication that infection may be present—including fever, chills or pus—give broad spectrum antibiotics (IV or IM) (see Appendix B). If the woman may have been exposed to tetanus and her vaccination history is uncertain, give her a tetanus toxoid. (Exposure to tetanus is possible if the abortion was not performed with sterile instruments or if the wound was contaminated with dirt or other unclean materials.)
- Give IV or IM analgesia for pain management (see Appendix E).
- Laboratory tests: hemoglobin or hematocrit; Rh type and cross-match blood (if available); measure urine output. (Hourly urine output lower than 50 ml is suggestive of hypovolemia and may represent acute renal failure.)

**Definitive Treatment**

Once the initial steps have been taken to stabilize the patient, prompt treatment of the underlying cause of bleeding is necessary. Treatment should be done as follows:

- If there are any signs or symptoms of intra-abdominal injury (distended abdomen, decreased bowel sounds, rebound tenderness, nausea/vomiting, shoulder or abdominal pain, fever) or ectopic pregnancy, further assessment and treatment (surgery) are needed immediately. (See the section on Uterine Perforation in this appendix.)
• If, on vaginal examination, there are any visible vaginal or cervical tears (lacerations), they should be sutured.

• Treat the incomplete abortion according to the duration of pregnancy. If the uterine size is within the first trimester, the uterus should be evacuated using MVA (see Chapter 6).

Continuing Treatment
After treating the cause(s) of bleeding, continue checking the patient’s vital signs, urine output and fluid replacement, adjusting treatment as indicated by her condition.

INFECTION/SEPSIS
Infection is a common complication of incomplete abortion. Retained POC provide an opportunity for bacterial growth. In rare cases, infection may occur after an MVA procedure, especially if the recommended infection prevention practices are not followed (see Chapter 4). Localized pelvic infection can quickly lead to more generalized infection (sepsis) and septic shock, which can be fatal. Therefore, prompt action to stabilize the patient and to treat the source of the infection is needed to save the woman’s life.

The following signs and symptoms indicate that either local or generalized infection is very likely:

Signs
• Fever (temperature > 38°C), chills or sweats
• Foul-smelling vaginal discharge
• Lower abdominal tenderness (with or without rebound tenderness)
• Mucopus from the cervix
• Cervical motion tenderness on bimanual examination

Symptoms
• History of previous unsafe abortion or miscarriage
• Lower abdominal pain
• Prolonged bleeding (> 8 days)
• General discomfort (flu-like symptoms)
Assessment and Treatment of Complications

If infection is suspected, assess the patient's risk for developing septic shock. She is at high risk if:

- the abortion was later than 14 weeks,
- she has a high fever (temperature > 40°C) or subnormal temperature (< 36.5°C),
- she has any evidence of intra-abdominal injury, or
- any evidence of shock (falling blood pressure and rising pulse rate).

Local infection can usually be managed with immediate administration of broad spectrum antibiotics (IV or IM) that are effective against Gram-negative, Gram-positive, anaerobic organisms and chlamydia.

Local infection can usually be managed with immediate administration of broad spectrum antibiotics (IV or IM) that are effective against Gram-negative, Gram-positive, anaerobic organisms and chlamydia.

Note: If the woman has an IUD in place, it should be removed.

If the infection is more generalized, or if the patient is at high risk for septic shock, immediate treatment is necessary to save her life.

Initial Treatment

- Check vital signs. Do not give the patient anything (fluids, medicine or food) by mouth, as surgery may be necessary.
- Make sure the woman's airway is open. If the patient is unstable, give oxygen 6-8 liters/minute by mask or nasal cannulae (if available).
- Begin IV antibiotics immediately, using broad spectrum antibiotics. (If blood cultures are available, take cultures before giving antibiotics.)
- If the woman may have been exposed to tetanus and her vaccination history is uncertain, give her a tetanus toxoid. (Exposure to tetanus is possible if the abortion was performed using unclean instruments or other objects.)
- If she becomes unstable, give IV fluids (Ringer's lactate or isotonic saline solution) at a rate of 1 liter in 15 to 20 minutes or faster. (A patient in septic shock may well require rapid administration of several liters of IV fluids to restore reasonable fluid balance.)
• **Laboratory tests:** If the woman has lost a lot of blood or appears anemic, check hemoglobin or hematocrit, complete blood count, including platelet; type and crossmatch blood; monitor urine output. (Hourly urine output lower than 50 ml is suggestive of hypovolemia and may represent acute renal failure.)

• **Abdominal x-rays:** Flat (horizontal) abdominal x-rays can identify air or fluid levels in the bowel. In the case of clostridial infection, gas may be seen in the tissues. The presence of an IUD may also be confirmed. Upright abdominal x-ray films will show air under the diaphragm if uterine or bowel perforation has occurred.

**Definitive Treatment**

With sepsis, prompt treatment can be life-saving. Because retained POC are most often the source of infection, surgery may be necessary for definitive treatment of intra-abdominal injury, pelvic abscess and peritonitis (see next section in this appendix). Uterine evacuation by MVA is an essential part of the treatment (see Chapter 6). All sources of infection must be treated. Consider the possibility of intra-abdominal injury, pelvic abscess, peritonitis, gas gangrene or tetanus. In addition, if the woman has an IUD in place, it should be removed after starting IV antibiotics. For management of gas gangrene and tetanus, specialized care at a higher level (referral) hospital is required.

**Continuing Treatment**

After treating the cause of infection, continue checking the patient's vital signs, urine output and fluid replacement; adjust supportive treatment (oxygen, antibiotics and other medication) as indicated by her condition.

**INTRA-ABDOMINAL INJURY**

Injury to the internal organs is a life-threatening complication as well as a cause of serious long-term poor health among patients with postabortion complications. The most common injury is uterine perforation; damage can also occur to the ovaries, fallopian tubes, omentum (peritoneal tissue around the stomach and intestine), bowel, bladder and rectum. These injuries indicate that attempts were made to end the pregnancy, and the possibility of infection, including tetanus and peritonitis, is very high.

Any internal injury, if not quickly diagnosed and treated, can lead to serious complications including bleeding, infection and death. Severe bleeding inside the abdomen (intra-abdominal hemorrhage) can occur with little or no visible vaginal bleeding. Therefore, whenever a woman is treated for postabortion complications, she should be checked for signs of intra-abdominal injury. During assessment and treatment of an...
intra-abdominal injury, the patient's blood pressure and heart rate should be watched closely, as shock may develop at any time.

A ruptured ectopic pregnancy or ruptured ovarian cyst also can cause intra-abdominal hemorrhage, and the symptoms will be similar to intra-abdominal injury. The possibility of ectopic pregnancy is greater if the patient has a history of any of the following:

- previous ectopic pregnancy,
- pelvic infection, or
- use of certain contraceptive methods.††

If ectopic pregnancy is suspected, delay in treatment is particularly dangerous, and death can be prevented only by stopping the hemorrhage through the surgical removal of the ectopic pregnancy, stopping bleeding and replacing blood loss, if indicated.

Definitive treatment of abdominal injury ranges from replacement of blood loss and antibiotic therapy to uterine evacuation under direct vision (laparoscopy or laparotomy) and repair or removal of injured tissue. It is important to recognize the signs that may indicate injury, to stabilize the woman's condition if possible, and if abdominal surgery is not available, to refer the woman quickly.

Signs and symptoms of intra-abdominal injury are:

**Signs**

- Distended abdomen
- Decreased bowel sounds
- Rigid (tense and hard) abdomen
- Rebound tenderness

---

†† IUDs and progestin-only contraceptives are highly effective in preventing intrauterine pregnancies, but less so ectopic pregnancies. Thus, if a woman using one of these methods does become pregnant, it is more likely the pregnancy is ectopic (up to 20-30%).
Symptoms

- Nausea/vomiting
- Shoulder pain
- Fever (temperature > 38°C)
- Abdominal pain, cramping

When combined with signs of shock (decreased blood pressure and rapid pulse and breathing), the possibility of major intra-abdominal bleeding (hemorrhage) must be considered.

Initial Treatment

The first steps in managing intra-abdominal injury, especially hemorrhage, can be life saving. (If laparotomy is not available, promptly prepare the woman for transfer after initial treatment.)

- Check vital signs. Raise the woman's legs or the foot of the bed.
- Make sure the woman's airway is open. If available, give oxygen 6-8 liters/minute by mask or nasal cannulae.
- Do not give the patient anything (fluids, medicine or food) by mouth, as surgery may be necessary.
- To restore fluid volume, give IV fluids immediately (Ringer's lactate or isotonic saline solution at rate of 1 liter in 15 to 20 minutes). It may take 1 to 3 liters of IV fluids to stabilize a patient who has lost a lot of blood or is in shock.
- A hemoglobin of 5 g/100 ml or less or a hematocrit of 15 or less is life-threatening and will require blood transfusion.
- If there is any indication that infection may be present—including fever, chills or pus—give broad-spectrum antibiotics (IV or IM).
- If the woman may have been exposed to tetanus and her vaccination history is uncertain, give her a tetanus toxoid. (Exposure to tetanus is possible if the abortion was performed using unclean instruments or other objects.)
- Give IV or IM analgesia for pain management (see Appendix E).
- Laboratory tests: hemoglobin or hematocrit; type and cross-match blood; measure urine output.
Assessment and Treatment of Complications

- Abdominal x-ray: An upright abdominal x-ray will help determine if there is gas in the abdominal cavity (ruptured/perforated uterus, bowel or bladder).

Definitive Treatment

   Any of the following conditions is a surgical emergency, requiring immediate laparotomy:

   - A rigid abdomen
   - A patient with acute abdominal pain and with persistent low blood pressure or shock that fails to stabilize after infusion of up to 3 liters of isotonic solution or Ringer’s lactate
   - An abdominal x-ray showing air or gas in the peritoneal cavity

In these cases, laparotomy is necessary to find and repair the injury. Peritonitis, uterine perforation, bowel injury, intra-abdominal injury and a ruptured ectopic pregnancy must be considered. It may be necessary to drain the abdomen. Repair or removal of injured tissue also may be required. In extreme cases, removal of the uterus may be necessary.

Once the intra-abdominal injury is treated, or if intra-abdominal injury is suspected but the woman is stable, the x-ray is negative, her abdomen is not rigid and there are no signs of ectopic pregnancy, evacuate the uterus according to the guidelines in Chapter 6. If intra-abdominal injury is discovered during the procedure, a laparotomy may be required to repair the injury.

Continuing Treatment

   After treating the cause of intra-abdominal injury and evacuating the uterus, check the patient’s vital signs, urine output and fluids; adjust supportive treatment (oxygen, antibiotics and other medications) as indicated by her condition.

UTERINE PERFORATION

   If uterine perforation occurs during the MVA evacuation procedure, it usually causes a very small tear. When it is recognized promptly and adequate precautions are taken, laparotomy is rarely necessary. Contraction of the uterus after evacuation often closes the opening and stops the bleeding.
Perforation of the uterus as a presenting complication in a woman with incomplete abortion is usually the result of instrumentation by an untrained person in order to induce the abortion. This condition can be life-threatening, and prompt management is indicated because there is a high possibility of infection and damage to other abdominal/pelvic organs.

During the initial assessment, the clinician should suspect a uterine perforation if the woman has a history of unsafe abortion with:

- a fast pulse (rate $\geq 110$ per minute),
- falling blood pressure (diastolic $< 60$), or
- excessive bleeding.

Signs and symptoms of an intra-abdominal injury are: distended abdomen, decreased bowel sounds, rigid abdomen (tense and hard), rebound tenderness, nausea/vomiting, shoulder or abdominal pain, fever and shock. In addition to intra-abdominal injury, if there is a large perforation, it will not close spontaneously, and repair of the defect may be necessary. These tears can bleed profusely and the blood can collect intra-abdominally with little or no bleeding vaginally.

During the procedure, suspect a perforation if:

- an instrument penetrates beyond the expected size of the uterus (based on the bimanual exam),
• the syringe vacuum decreases with the cannula well inside the uterine cavity, or

• the woman continues to bleed excessively after the uterine cavity is empty.

If fat, bowel or omentum is observed in the tissue removed from the uterus, the uterus has been perforated.

The choice of treatment of uterine perforation depends on whether the evacuation is complete when the perforation is discovered and on the health care facility's capabilities. In many instances, prompt referral to a higher level (referral) hospital is the best course of action. A general plan for treatment is outlined below.

If a perforation is found and the evacuation is complete:

1. Begin IV fluids and antibiotics.

2. Give ergometrine (0.2 mg IM), repeat as needed up to 3 doses.

3. Observe for 2 hours; check vital signs frequently; make arrangements for possible referral.

   • If the patient remains stable and bleeding slows, give ergometrine (0.2 mg) and continue observation overnight.

   • If the patient's condition worsens and the bleeding does not stop with an increased dose of either oxytocin or ergometrine, a laparoscopy or laparotomy may be necessary to locate and repair the source of the bleeding. If surgery is not available, refer patient to higher level of care.

If a perforation is found and the evacuation is not complete:

1. Begin IV fluids and antibiotics. Check the woman's hematocrit, and make arrangements for blood transfusion or plasma volume expander if indicated (and available).

2. Complete the evacuation under direct visual control (laparoscopy or laparotomy) to assess damage to the uterus and to prevent injury to abdominal organs, such as
the bowel. If direct visual examination is not available, refer the patient to a higher level hospital.

3. Repair the damage as necessary at minilaparotomy by either coagulating the bleeder or suturing the defect. Make sure the bowel is intact and there is no injury to other abdominal organs. (If the cervix is torn or cut beyond repair or there is extensive uterine perforation, a hysterectomy may be necessary.)

4. After surgery, give oxytocics (if uterus has not been removed) and observe vital signs every 15 minutes for 2 hours.

- If the patient becomes stable and bleeding slows or stops, give ergometrine (0.2-0.5 mg IM) and continue observation overnight.

- If the patient's condition gets worse, prepare her for transfer to a specialized care (referral) hospital.
APPENDIX B

GENERAL PRINCIPLES OF EMERGENCY POSTABORTION CARE

BACKGROUND
A number of issues must be considered in providing emergency postabortion care. Treatment may include stabilization and referral, oxygen, intravenous (IV) fluid replacement, blood transfusion or medicines (e.g., antibiotics, management of pain and tetanus toxoid). These topics are discussed below.

STABILIZATION AND REFERRAL
Stabilization and appropriate and timely referral are essential to help women reach life-saving care. Whether a woman is referred from the primary to the first referral level, or from the first referral to a secondary or tertiary care hospital, the referring site must do what it can to stabilize and treat the woman. The ability of a referring site to promptly transport the patient to the referral center can be life-saving. Standing arrangements for transport should exist at all health delivery sites. These may require coordination with community resources such as police, military, agricultural extension services, other health care facilities, governmental institutions and churches. If possible, the referring site should alert the referral center that the patient is coming and send a referral note with the patient (see Appendix C).

The central elements in stabilizing the patient for referral are:

- Management of the airway, respiration and circulation
- Control of bleeding
- Intravenous fluid replacement
- Management of pain

In general, in an emergency referral, the patient should be accompanied by trained staff to the referral center. If she is accompanied, then IV therapy and oxygen (if equipment is available) can be continued during transport. If the patient cannot be accompanied by trained staff, others, including family members, can be shown how to manage IV therapy during transport. Whether or not the woman is accompanied, she should be kept warm and her feet should be elevated in cases of shock or hemorrhage. Do not use external sources of heat as skin can be easily burned; use blankets or extra clothing instead.
A summary of the case should be sent with the woman to the referral center. (See Appendix C for an example of a referral form.) This should include:

- immediate and past history of the presenting problem;
- assessment of the patient's condition made at the referring site;
- actions taken at the referring site (for instance, morphine 10 mg IM at 1600 hours); and
- other relevant information obtained by the referring site (for example, patient has a seizure disorder).

**INTRAVENOUS (IV) FLUID REPLACEMENT**

In many instances of postabortion complications, women will require IV fluids for volume replacement. Generally, isotonic solution (0.9% sodium chloride, also known as normal saline) or Ringer's lactate is preferred. Saline with or without glucose can be used, depending upon the availability. Glucose solutions without saline do not provide the salt required to restore fluid balance.

A large bore needle, preferably 16-18-gauge, is best for starting IV fluids so that fluids may be given rapidly and blood can be given later, if needed. A 20-gauge needle is acceptable, however, if a larger size is not available.

Any necessary blood samples for laboratory tests should be drawn when the IV needle is being inserted. Blood drawing at a later point could be more difficult as veins tend to collapse and are found deeper from the surface when shock or other life-threatening complications are present. In addition, this minimizes the woman's discomfort and is a more efficient use of sterile supplies.

Rapid infusion of fluids can be life-saving in the case of shock from reduced blood/fluid volume. Fluids can be infused, at 500 ml to 1 liter per 15 to 20 minutes, while the woman's condition is being assessed and monitored. Normally it takes 1 to 3 liters of IV fluids, infused at this rate or faster, to stabilize a patient in shock. Once the woman's low fluid volume and the cause of shock have been corrected, fluids should be infused at a maintenance rate of 1 liter per 6 to 8 hours as shown in Table B-1.
To infuse fluids at different rates consider the:

- amount of fluid to be given,
- time period over which the fluid is to be given, and
- size of tubing and drop size. (Each size of tubing has a slightly different drop size. For example, some tubing has 20 drops [gtt] per ml, while another size may have only 10 drops per ml.)

Table B-1 shows how many drops per minute must be given in order to provide a certain amount of fluid over a fixed period of time. To use the table, you must know the number of drops per ml (that is, which size tubing is being used).

<table>
<thead>
<tr>
<th>Amount of Fluid</th>
<th>Infusion Time</th>
<th>Drops per ml (size of tubing)</th>
<th>Drops per Minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 liter</td>
<td>20 minutes</td>
<td>10</td>
<td>Too fast to count</td>
</tr>
<tr>
<td>1 liter</td>
<td>20 minutes</td>
<td>20</td>
<td>Too fast to count</td>
</tr>
<tr>
<td>1 liter</td>
<td>4 hours</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>1 liter</td>
<td>4 hours</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>1 liter</td>
<td>6 hours</td>
<td>10</td>
<td>28</td>
</tr>
<tr>
<td>1 liter</td>
<td>6 hours</td>
<td>20</td>
<td>56</td>
</tr>
<tr>
<td>1 liter</td>
<td>8 hours</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>1 liter</td>
<td>8 hours</td>
<td>20</td>
<td>40</td>
</tr>
</tbody>
</table>

The general formula to figure out any IV infusion rate is as follows:

\[
\text{Amount of fluid to be given (milliliters)} / \text{Infusion time (minutes)} \times \text{Number of drops per ml} = \text{Number of drops per minute}
\]

\[
\text{Example: } \frac{1000 \text{ ml}}{4 \text{ hours} \times 60 \text{ minutes}} \times 10 \text{ drops per ml} = 41.67 = 40 \text{ drops per minute}
\]

(In order to convert the infusion time from hours to minutes, multiply the number of hours by 60.)

When the patient has recovered sufficiently to take fluids by mouth, the IV may be discontinued unless it is required for...
giving medicine. If the IV is only being used to give medicines, infuse slowly (about 1 liter per 10 to 12 hours).

It is important to monitor the amount of fluids given. As the patient recovers, take care not to overload her with fluid. Any evidence of swelling (feet and hands), shortness of breath or puffiness may indicate fluid overload. If this happens, discontinue fluids. Diuretics may be necessary if fluid overload has caused severe shortness of breath (pulmonary edema).

**BLOOD TRANSFUSION**

Blood transfusions may be life-saving in cases of extreme blood loss and shock from incomplete abortion. Nevertheless, they carry risk and may do harm rather than good in certain cases. Therefore, the decision to transfuse a patient should be made very carefully. Facilities for blood replacement should be available at the first referral level. They can be performed by any medical officer, medical assistant, clinical officer, midwife or laboratory worker with suitable training.

The serious risks associated with blood transfusion include the possibility of:

- transmission of diseases such as hepatitis B and AIDS,
- immune-related problems such as rapid breakdown of red cells (intravascular hemolysis), and
- circulatory overload.

Moreover, blood transfusions are expensive and use a scarce human resource. "The decision to transfuse blood or blood products must be based on a careful assessment which indicates that they are necessary for saving life or for preventing major illness. Blood which has not been obtained from appropriately selected donors and/or which has not been appropriately screened for infectious agents should not be transfused, other than in the most exceptional life-threatening situations."\(^2\)

Recommendations for use of blood transfusions in cases of hemorrhage and shock are outlined by the WHO in *Essential Elements of Obstetric Care at First Referral Level.*\(^1\) To quote:

"Blood transfusion is often indicated for volume replacement in the treatment of hemorrhage and shock. Whether or not blood transfusion is required for this purpose depends not only on the volume of blood lost, but also on the speed of..."
the loss and the physical condition of the woman. Women in good physical condition can tolerate blood loss to a greater degree than women in poor health. For example, a loss of one liter may be tolerated quite well by a healthy woman, whereas a loss of as little as 200 ml of blood may easily be fatal to an anaemic woman.

Replacement by blood transfusion is not necessary in every case of blood loss; plasma volume expanders, solutions of dried plasma and even [isotonic] saline are useful alternatives.

Clinical guidelines specific to the use of blood transfusions and alternatives to their use in the treatment of hemorrhage are described in Global Blood Safety Initiative: Guidelines for the Appropriate Use of Blood. Regarding alternatives to blood use, this reference states:

The amount of blood lost and the patient’s clinical condition, assessed by measuring the blood pressure, pulse rate, central venous pressure [if available] and urine flow, will determine the need for and urgency of blood volume replacement. Generally, a previously healthy adult can tolerate a loss of up to 20% of the circulating blood volume [about 1.0 to 1.5 liters] without transfusion. Volume replacement with plasma substitutes will be necessary for a loss of between 20% and 30% [about 1.5 to 2.0 liters]. Blood transfusion will be required, in addition, when the loss exceeds 30%, particularly in patients with massive hemorrhage (more than 50% of blood lost in less than three hours).

Initial volume replacement (50 ml/kg or three times the estimated blood loss) should be with solutions such as [isotonic] saline (0.156 mol/L or 9 g/L). Dextrose solutions are not recommended.

Synthetic colloids may be necessary for the management of continuing hemorrhage, particularly if there are signs of hypotensive shock. Gelatins may be used in doses up to 50 ml/kg, or hydroxyethyl starch or dextran 70 in doses up to 20 ml/kg, during the first 24 hours. Albumin or plasma protein fraction may also be used, but are more expensive.

Plasma is not the first choice for volume replacement because of the risk of transmitting infection. Red cells are not indicated for volume replacement, but (as red cell concentrate or in whole blood) solely for improving oxygen delivery capacity.
Blood components may be required for restoration of hemostasis [clotting] in patients who have massive hemorrhage.

**ADMINISTRATION OF MEDICINES**

Safety, need and route of administration are important issues to consider in deciding **when, what and how** to use medicines to treat a patient.

Before giving medicine it is always important to ask if the patient has ever had an allergic reaction to that medicine. If yes, choose a medicine less likely to cause an allergic reaction.

The **route of administration** is an important decision for reasons of safety and for choosing the best possible way to treat the condition. The choice of routes:

- intravenous (IV),
- intramuscular (IM), or
- by mouth (oral)

must be made before choosing the specific medicines because not all medicines can be given by all 3 routes.

**Intravenous (IV)** This route is preferred in the following situations: shock, any life-threatening complication that may require urgent surgery, and any serious infection (including sepsis and septic shock) resulting from an incomplete abortion.

**Intramuscular (IM)** This route is acceptable when the IV route is not available and if the required medicine only can be given this way; some medicines, however, are not effective when given IM.

**By mouth (oral)** Do **not** give any medicines by mouth to a woman in shock or if the woman has an intra-abdominal injury (e.g., uterine perforation, ectopic pregnancy) or other serious condition possibly requiring immediate surgery because she may vomit and inhale (aspirate) the vomit. This route is acceptable only in the following situations:

- In cases of referral (even with the above conditions), if transport will take several hours **and** if there are **no** IV or IM medicines available to administer before transfer, then oral antibiotics and pain medicines can be given to a woman, as long as she is **not** in shock. Give just enough water to swallow the medicine.
If the patient is stable and able to take fluids by mouth.

ANTIBIOTICS

Antibiotics should be used whenever an infection is present. Antibiotics can be life-saving in cases of sepsis, septic shock, intra-abdominal injury and uterine perforation. When there are no complications of the incomplete abortion, no signs of infection and the woman is stable, antibiotics are not necessary. It is very important to start antibiotics early whenever infection is suspected or present; they should be started before surgery.

Intravenous administration of antibiotics is preferred because it helps to speed delivery of the drug to the infected tissues. When IV fluids are not available, IM administration of antibiotics is acceptable. Giving antibiotics by mouth is acceptable if IV or IM antibiotics are not available and the woman is not in shock, if the infection is minor, or in an attempt to prevent an infection (prophylaxis).

In most cases, broad spectrum antibiotics effective against Gram-negative, Gram-positive, anaerobic organisms and chlamydia are preferable because identification of the particular pathogen is not possible in many situations and because multiple pathogens may be present. Antibiotics should be given in combination to achieve the broadest coverage. The recommended antibiotics and their dosages are listed in Tables B-2, B-3 and B-4. More than one choice of antibiotic combination is listed, in order of preference. If a particular antibiotic is not available or the patient is allergic to it, then one of the other recommended combinations can be used.
### Table B-2
Antibiotic Therapy for Infected Abortion

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>Dosage</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ampicillin</td>
<td>1 g IV every 4 hours or 500 mg oral every 6 hours</td>
<td>Good broad spectrum antibiotic; inexpensive</td>
</tr>
<tr>
<td>Benzympenicillin</td>
<td>10 million units IV every 4 hours</td>
<td>Few serious side effects; effect limited to Gram (+) cocci and gonorrhea (if not resistant)</td>
</tr>
<tr>
<td>Chloramphenicol</td>
<td>1 g IV every 6 hours</td>
<td>Useful when sepsis is present; must be able to monitor blood count to watch for anemia</td>
</tr>
<tr>
<td>Gentamicin</td>
<td>1.5 mg/Kg/dose IV or IM every 8 hours</td>
<td>Effective against Gram (-) organisms such as GI tract flora (e.g., E. coli)</td>
</tr>
<tr>
<td>Doxycycline or Tetracycline</td>
<td>100 mg every 12 hours (Do not take with milk products or antacids.)</td>
<td>Adequate for both Gram (+) and Gram (-) organisms, including chlamydia; can replace or be used along with ampicillin; good in combination with metronidazole</td>
</tr>
<tr>
<td>Metronidazole</td>
<td>1 g IV every 12 hours or 500 mg oral every 6 hours</td>
<td>Good Gram (-) and anaerobic coverage; can be used in combination with ampicillin, doxycycline; an alternative to clindamycin; inexpensive and generally available; oral administration achieves serum levels equivalent to IV administration</td>
</tr>
</tbody>
</table>

**Notes:**

- Penicillin (or ampicillin), gentamicin and metronidazole are most commonly used together as the broadest spectrum treatment of patients with severe infectious sepsis of pelvic origin.
- Chloramphenicol quite often is available when other drugs are not. It is effective in combination with penicillin or ampicillin.
- Once started, intravenous therapy should be continued until the patient is afebrile for at least 24 hours, preferably 48 hours. If there is no response in 48 hours, the antibiotic(s) should be changed.
- When recovery is underway, IV therapy should be followed by oral medication. Generally, tetracycline (500 mg by mouth 4 times daily) or doxycycline (100 mg by mouth 2 times daily) for 10 to 14 days is advisable. Allergic reactions to tetracycline are very rare. Some patients on tetracycline may develop a rash when their skin is exposed to the sun.

### Table B-3
Inpatient Antibiotic Combination Regimens
(In order of preference)

<table>
<thead>
<tr>
<th>Ceftriaxone</th>
<th>with</th>
<th>Gentamicin or Metronidazole</th>
</tr>
</thead>
<tbody>
<tr>
<td>or</td>
<td></td>
<td>Spectinomycin</td>
</tr>
<tr>
<td>Ciprofloxacin</td>
<td></td>
<td>Doxycycline with Metronidazole</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td>Penicillin with Chloramphenicol</td>
</tr>
</tbody>
</table>

Postabortion Care
**Outpatient Antibiotic Therapy**

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>Oral Dose</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceftriaxone</td>
<td>250 mg - single oral dose</td>
<td>Coverage for gonorrhea &amp; general broad spectrum coverage</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ciprofloxacin</td>
<td>500 mg - single oral dose</td>
<td>Coverage for gonorrhea and gram (+) cocci</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spectinomycin</td>
<td>2 g - single oral dose</td>
<td></td>
</tr>
</tbody>
</table>

PLUS one of these:

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>Oral Dose</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doxycycline</td>
<td>100 mg oral twice daily for 10 to 14 days</td>
<td>Good chlamydia coverage; inexpensive</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetracycline</td>
<td>500 mg oral 4 times daily for 10 to 14 days</td>
<td>Good chlamydia coverage; inexpensive</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cotrimoxazole</td>
<td>2 tablets oral twice daily for 10 days</td>
<td>Good broad spectrum coverage; inexpensive</td>
</tr>
</tbody>
</table>

**PAIN MANAGEMENT**

Many women with postabortion complications suffer pain and need prompt and effective medication for their pain. To select appropriate pain management medications, one must consider the conditions present, the timing and route of administration and the precautions for each type of medication.

Assess the woman's condition before choosing and giving analgesics. These medications, if given before the examination, can hide symptoms (pain, fever) that are essential to an accurate diagnosis.

Avoid over-sedation because it can cause the patient to be unable to answer questions well. In addition, over-sedation can hide symptoms that are essential to diagnosis. Any narcotic can depress breathing, which can be fatal; therefore, patients receiving narcotics must be under reasonably close observation so that slow or interrupted breathing will be noticed. This is particularly true of patients who are already sick and may be in early shock. It is essential to consider the transit time and transfer conditions for referral patients. Avoid the use of narcotics if the transfer will be without adequate medical supervision and ability to respond to respiratory depression. The dose should be selected to provide adequate pain...
management during transfer, but should not interfere with the 
woman’s ability to answer questions. It also should not mask 
symptoms which may be needed to accurately diagnose the 
woman upon arrival at the referral center.

Nonsteroidal anti-inflammatory drugs (NSAIDs), which include 
ibuprofen and aspirin, often are used to treat pain. Avoid using 
NSAIDs until a diagnosis is certain because these drugs may 
interfere with blood clotting ability. It also is important to 
consider the precautions to giving oral medicines and to 
measure and record the woman’s temperature before giving 
these medicines. In cases that require only MVA, NSAIDs are 
recommended to relieve the pain of uterine cramping without 
making the bleeding worse.

Pain medication often is accompanied by the use of a sedative such as diazepam. While such combinations provide both 
sedation and analgesia (pain relief), they also may increase 
the risk of respiratory depression. Therefore, such 
combinations should be used only when necessary, and 
avoided if the patient will be transferred.

For a detailed discussion of anesthetics, analgesics and 
sedatives and their recommended use in MVA, dosage and 
route of administration, see Appendix E.

TETANUS

Women who present with postabortion complications may be 
at risk of developing tetanus. Few women are fully immunized 
against tetanus; in 1986 only 16% of the pregnant women in 
the developing world were adequately protected.

Any evidence that the patient has trauma to the genital tract 
(vulva, vagina or uterus) which may have been contaminated 
with dirt or feces, or has received an abortion in which dirty 
instrument were used, requires careful attention to the issue 
of tetanus. Although the woman’s report of an unsafe abortion 
is important, initially she may not be able to talk about this (see 
Chapter 2).

A first step in preventing the onset of tetanus is careful 
cleansing of the wound, drainage of pus and meticulous 
removal of foreign material and dead or damaged tissue. This 
reduces the likelihood that C.Tetani, which is the bacteria 
causing tetanus, will be able to grow. Starting antibiotics also 
is essential to minimize bacterial growth. Either penicillin or 
metronidazole can be used.
Specific recommendations for preventing tetanus depend upon the patient's history of immunizations and the severity of the wound. The following are general guidelines:

- If the patient has received a full immunization series within the last 10 years and has a clean, minor wound, no further treatment is needed. If the wound is tetanus-prone (i.e., contaminated with dirt or feces, caused by puncture wounds or burns), a dose of tetanus toxoid should be given (0.5 ml IM) and human tetanus immune globulin (TIG) or antitoxin also should be given, if available.

- If the patient has not received a full immunization series in the last 10 years or is unsure of her immunization status, tetanus toxoid should be given for any wound and TIG should be given for tetanus prone wounds if it is available. When tetanus toxoid and TIG or antitoxin are given at the same time, it is important to use separate syringes and separate sites of administration.

**DIURETICS**

Give diuretics only if there is evidence of heart failure and pulmonary edema, only if administered by an experienced provider and only with very careful monitoring of the patient's condition. The patient must have a catheter in place, hourly urine output must be measured and recorded, and care must be taken to balance the use of diuretics with continued administration of IV fluids. The diagnosis can be confirmed with a chest x-ray, and progress can be confirmed with further chest x-rays.

**REFERENCES**


SAMPLE REFERRAL FORM:
POSTABORTION COMPLICATIONS†

The responsible health professional (service provider) should complete this form for any patient who is referred for treatment of postabortion complications. The form should accompany the patient to the referral center.

Patient Information

Name:  
Date of Admission:  
Time of Admission:  
Diagnosis:

History (Describe the patient's relevant reproductive history including number of pregnancies, births, etc.)

Clinical Condition (vital signs, physical/pelvic exam findings)

Initial Treatment (fluids, drugs given, action to control bleeding, any other medical steps taken)

Assessment of Patient's Condition/Other Information

Health Professional (print name)  
Location (hospital, clinic)

Signature  
Date

APPENDIX D

PROCESSING SURGICAL GLOVES†

The risk in reusing surgical gloves is that processed gloves contain more invisible tears than new ones and therefore provide less protection to the wearer. Autoclaving (sterilization) and high-level disinfection (steaming or boiling) of gloves, when correctly performed, can provide a high quality product; and double-gloving for high-risk procedures can be done. Therefore, processing of gloves constitutes an appropriate reuse of disposable items.

HOW TO DECONTAMinate AND CLEAN SURGICAL GLOVES BEFORE STERILIZATION OR HIGH-LEVEL DISINFECTION (HLD)

STEP 1: Before removing soiled gloves, immerse hands briefly in a container filled with 0.5% chlorine solution (or other locally available disinfectant).

STEP 2: Remove gloves by turning inside out and soak in the chlorine solution for 10 minutes. (Performing Steps 1 and 2 insures that both surfaces of the gloves are decontaminated.)

STEP 3: Wash gloves in soapy water, cleaning inside and out.

STEP 4: Rinse gloves in clean water until no soap or detergent remains. (Residual soap or detergent can interfere with subsequent sterilization or HLD.)

STEP 5: Test gloves for holes by inflating them by hand and holding them under water. (Air bubbles will appear if there are holes.)

STEP 6: Gently dry gloves inside and out before proceeding with sterilization or HLD. (Gloves which remain wet for long periods of time will absorb water and become tacky.)

STEP 7: For gloves which are to be steam sterilized, package before further processing.

Note: Gloves should be discarded after processing three times because invisible tears may occur with use and reprocessing.¹,²

HOW TO STERILIZE SURGICAL GLOVES

After decontamination, cleaning and drying, gloves must be packaged prior to sterilizing by autoclaving. First, the cuffs should be folded up, so that after sterilization the gloves can be put on easily without contaminating them. Next, put gauze or paper inside each glove and under the fold of the cuff and wrap them as shown in Figure D-1. (Do not tie tightly or wrap glove packs with rubber bands.) Finally, place the glove packs in a wire basket on their sides to allow optimum steam penetration. (If gloves are stacked in piles, penetration of steam under the cuffs may be poor.) Autoclave at 121°C (250°F) for 30 minutes and at a pressure of 106 kPa (15 lb/in²).

Remember: Higher temperatures and pressures are destructive to gloves.

Figure D-1. Preparing Gloves for Autoclaving (steam sterilization)

Immediately after autoclaving, gloves are extremely friable and tear easily. Gloves should not be used for 24 to 48 hours to allow the elasticity to be restored and to prevent tackiness/stickiness (Table D-1).
### Table D-1
Tips to Help Avoid Glove Problems

#### PROBLEM: TACKY OR STICKY GLOVES

<table>
<thead>
<tr>
<th>Probable Cause</th>
<th>Recommended Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual liquid soap or detergent</td>
<td>Reduce amount of liquid soap or detergent used when washing gloves.</td>
</tr>
<tr>
<td></td>
<td>Rinse gloves at least three times in clean water.</td>
</tr>
<tr>
<td>Heated to high temperature for too long</td>
<td>Use 30 minutes sterilizing exposure at 121°C (250°F) and remove gloves from sterilizer as soon as cycle is completed.</td>
</tr>
<tr>
<td>Gloves sterilized with other goods</td>
<td>Sterilize gloves separately.</td>
</tr>
<tr>
<td>Gloves not allowed to dry completely after steaming</td>
<td>Wear &quot;wet&quot; within 30 minutes or allow to dry for 4 to 6 hours before using.</td>
</tr>
<tr>
<td>Poor powdering</td>
<td>Use absorbable glove powder and follow manufacturer's instructions to insure a film of powder on all surfaces.</td>
</tr>
<tr>
<td>Surfaces of gloves touching each other</td>
<td>Gauze or paper wicks should be inserted between the palm and back of hand of each glove and between the hand of the glove and the turned-back cuff. This allows steam to contact all surfaces during sterilization and prevents surfaces from adhering to each other.</td>
</tr>
<tr>
<td>Breakdown (deterioration) of rubber (latex)</td>
<td>Store in a dry, cool area.</td>
</tr>
<tr>
<td>(Rubber gloves deteriorate while stored even though they have not been used. They become soft, sticky and unusable.)</td>
<td>Do not store in direct sunlight.</td>
</tr>
</tbody>
</table>

#### PROBLEM: EXCESSIVE TEARING OR RUPTURING

<table>
<thead>
<tr>
<th>Probable Cause</th>
<th>Recommended Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gloves used too soon following sterilization</td>
<td>Do not use gloves for 24 to 48 hours after sterilization. This allows gloves to regain their elasticity before use.</td>
</tr>
</tbody>
</table>


### HOW TO HIGH-LEVEL DISINFECT SURGICAL GLOVES BY STEAMING

After gloves have been decontaminated and thoroughly washed, they are ready for HLD by steaming.

**STEP 1:** Fold up the cuffs of the gloves so that they can be put on easily and without contamination after HLD.

**STEP 2:** Place gloves into one of the pans with holes in its bottom. To make removal from the pan easier, the cuffs should be facing outward toward the edge of the pan (Figure D-2).
Processing Surgical Gloves

Five to fifteen pairs can be put in each pan depending on the size (diameter) of the pans.

Figure D-2. Gloves in Steamer Pan


STEP 3: Repeat this process until up to three steamer pans have been filled with gloves. Stack the filled steamer pans on top of a pan containing water for boiling. A second (empty) pan without holes should be placed on the counter next to the heat source (see Step 9).

STEP 4: Place lid on top pan and bring water to a full rolling boil. (When water only simmers, very little steam is formed and the temperature may not get high enough to kill microorganisms.)

Remember: Be sure there is sufficient water in the bottom pan for the entire 20 minutes of steaming.

STEP 5: Reduce heat so that water continues to boil at a rolling boil. (When water boils too violently, it evaporates quickly and wastes fuel.)

STEP 6: When steam begins coming out between pans, start timer or note time on clock and record time in the HLD log.

STEP 7: Steam gloves for 20 minutes.

STEP 8: Remove top steamer pan and place cover on top pan remaining on the stack. Gently shake excess water from the gloves in the pan just removed.
STEP 9: Place pan containing gloves on the second (empty) pan (see Step 3). Repeat until all pans containing gloves are restacked on this empty pan. (This step allows the gloves to cool and dry without becoming contaminated.)

Remember: Do not place pans containing gloves down on a table top, counter or other surface as gloves will be contaminated.

STEP 10: Allow gloves to air dry in the steamer pans (4 to 6 hours) before using. Gloves which were removed from the steamer pan(s) to be used "wet" or "damp," but were not used during the clinic session, should be reprocessed before use.

STEP 11: Using a high-level disinfected forceps, transfer the dry gloves to a dry, high-level disinfected container with a tight-fitting lid. Store for up to 1 week. (Gloves also can be stored in the stacked and covered steamer pans).

HOW TO HIGH-LEVEL DISINFECT SURGICAL GLOVES BY BOILING

Although boiling effectively high-level disinfects gloves, it is difficult to dry them without contaminating them. Therefore, boiling surgical gloves should be done only if the gloves are to be used immediately (i.e., worn "wet" after boiled and cooled).

After surgical gloves have been decontaminated and thoroughly washed they are ready for HLD by boiling for 20 minutes.

STEP 1: Place gloves in a bag made of plastic or nylon netting.

STEP 2: Place a weight in the bag so that all gloves and the bag will be at least 2.5 cm (1 inch) below the surface of the water.

STEP 3: Close lid over pan and bring water to a full, rolling boil. (When water only simmers, the temperature at the surface may never get high enough to kill microorganisms.)

11 Alternatively, allow gloves to cool for 5 to 10 minutes before wearing "wet." Gloves should be used within 30 minutes, if possible. After this time, the fingers of the gloves stick together and the gloves are hard to put on despite being damp. Gloves which have been removed from the steamer pan(s) to be worn "wet" but were not used during the clinic session should be reprocessed.

111 To prepare a high-level disinfected container, boil (if small) or fill a plastic container with 0.5% chlorine solution and soak for 20 minutes. (The chlorine solution can then be transferred to another container and reused.) Rinse the inside thoroughly with boiled water and allow to air dry.
Processing Surgical Gloves

STEP 4: Reduce heat so that water continues to boil at a rolling boil. (When water boils too violently, it evaporates quickly and wastes fuel.)

Remember: Be sure there is sufficient water in the pan to cover items for the entire 20 minutes of boiling.

STEP 5: When rolling boil begins, start timer or note time on clock and record in HLD log. (No objects or water should be added after timing starts.)

STEP 6: Boil gloves for 20 minutes.

STEP 7: After boiling for 20 minutes, remove bag of gloves with high-level disinfected, dry forceps. (Never leave boiled objects in water which has stopped boiling. As the water cools and steam condenses, air and dust particles are drawn down into the container and may contaminate the gloves.)

STEP 8: Allow excess water to drip off gloves (shake the bag gently). Place the bag in a high-level disinfected container, cover and allow to cool (about 5 to 10 minutes) before use.

STEP 9: Wear high-level disinfected gloves to untie the bag. Remove gloves from the container using high-level disinfected forceps. Gloves which are worn “wet” may be weakened and less stretchy (elastic). Therefore, put on “wet” gloves very carefully.

Note: After boiling, gloves should be used within 30 minutes, if possible. After this time, the fingers of the gloves stick together and the gloves are hard to put on despite being damp.

STEP 10: Gloves remaining in the bag (not used) at the end of the clinic session should be reprocessed. They will not dry completely (inside and outside).
ACCIDENTAL CONTAMINATION OF STERILE OR HIGH-LEVEL DISINFECTED GLOVES

There are several ways to contaminate sterile or high-level disinfected surgical gloves:

- tearing or puncturing the glove,
- touching any nonsterile object with the sterile glove, or
- touching the outside of a sterile glove with an ungloved hand.

Service providers wearing sterile or high-level disinfected gloves should be careful not to contaminate gloved hands inadvertently by touching nonsterile objects, unprepped skin or mucous membranes.

REGLOVING AFTER CONTAMINATION

To reglove after contaminating a glove during a procedure:

- Remove contaminated glove by the cuff, and place in chlorine solution for decontamination (if reusing) or in waste container.

Sterile Glove

- Have circulating nurse or technician open sterile glove pack, laying the glove package on a clean surface.
- Put on replacement glove in the usual manner.

Alternatively:

- Have scrub nurse or technician open the sterile glove package, remove a sterile glove and hold the glove open by the cuff. Put hand into the glove without touching the outside of the glove.
- Adjust the glove after the scrub nurse or technician lets go of the cuff.
- Remove contaminated glove by the cuff, and place in chlorine solution for decontamination (if reusing) or in waste container.
High-Level Disinfected Glove

- Have circulating nurse or technician pick up replacement glove with high-level disinfected forceps.
- Grasp replacement glove by turned-down cuff and put on glove in the usual manner.

Alternatively:
- Have scrub nurse or technician remove a replacement glove from the high-level disinfected container with forceps and hold the glove open by the cuff. Put hand into the glove without touching the outside of the glove.

REFERENCES


### APPENDIX E

**USE OF MEDICATIONS FOR PAIN**

<table>
<thead>
<tr>
<th>TYPES OF MEDICATION</th>
<th>Details</th>
</tr>
</thead>
</table>
| **Anesthetics**     | Numb all physical sensation. General anesthetics cause the patient to become completely unconscious. Examples include halothane and ether. Regional anesthetics (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. Local anesthetics 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 chloroprocaine. (See Chapter 5 for use of paracervical block for MVA.) Non-narcotic analgesics reduce the sensation of pain in the spinal cord and brain. Narcotics, one type of analgesic, induce stupor as well as block the transmission of pain. Analgesics can be used for mild to severe pain and can be administered orally or by intramuscular (IM) or intravenous (IV) injection. Examples include morphine, meperidine and Paracetamol®. Sedatives depress the functions 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 ease both cervical and pelvic discomfort associated with treatment of incomplete abortion using MVA. Analgesics are used in combination with local anesthesia 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 uterine cramping; analgesics reduce this pain. The most appropriate analgesic and route of administration to use will depend upon the severity of the pain anticipated and the facilities available. In many situations oral or IM administration is appropriate; however, IV administration may be more appropriate, particularly if the patient is on IV fluids because of an existing condition, or is experiencing significant pain. Intravenous administration requires closer
monitoring for adverse reactions than do other routes (see Appendix B).

Oral analgesics such as ibuprofen or acetaminophen (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 this takes at least 30 to 60 minutes.

A nonsteroidal anti-inflammatory drug (NSAID) such as ibuprofen may be effective in diminishing the sensation of uterine spasms. NSAIDs have been shown to reduce the sensation of pain during and immediately after the MVA procedure.¹ NSAIDs may be combined with narcotics to produce an additive analgesic effect, thus allowing for the use of a lower dose of narcotics to achieve similar alleviation of pain.²

Narcotics such as meperidine or codeine are helpful for moderate to severe pain.³ When a patient is given a narcotic, however, her recovery must be carefully monitored because of the risk of respiratory depression.⁴ 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 cervical dilation is anticipated, parenteral analgesia may be indicated. Other agents such as local anesthesia or sedatives may be used in combination with IV or IM analgesia.⁵

An IM injection should be given approximately 30 minutes before the procedure to allow the drug to take effect; IV infusion is effective almost immediately. (See Table E-1 for dosage and administration information.) Trained staff and emergency backup should be available with use of IV or IM analgesia.

† Oral morphine is not recommended here because it is too long-acting for the short MVA procedure.

¹ Health facilities providing narcotics must be prepared to manage respiratory arrest. Providers trained in cardiopulmonary resuscitation (CPR), and use of appropriate antagonist drugs (Naloxone* and flumazenil) and resuscitative equipment must be available.

³³ Both sedatives and narcotics have an additive effect and may increase the risk of respiratory depression. When a sedative is combined with a narcotic, respiratory arrest may occur at lower doses than if each medication were used alone. Therefore, when combining these medications, the clinician must choose doses carefully and watch closely for any signs of respiratory depression.
Complications of Analgesia

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

### Table E-1
Analgesic Drugs for MVA

<table>
<thead>
<tr>
<th>Type of Analgesia</th>
<th>Drug Name (generic)</th>
<th>Usual Dose and Timing</th>
<th>Duration of Effect</th>
<th>Common Side Effects</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narcotic</td>
<td>Demerol® (meperidine)</td>
<td>25-50 mg IV† 50-100 mg IM 30 minutes before procedure</td>
<td>2 hours</td>
<td>Drowsiness, light-headedness, weakness, euphoria, dry mouth.</td>
<td>Reverse with naloxone‡ 0.4 mg IV. Oral dose of meperidine much less effective than IM or IV.</td>
</tr>
<tr>
<td></td>
<td>Pethidine® (meperidine)</td>
<td>100-150 mg orally 30 to 60 minutes before procedure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Narcotic</td>
<td>Sublimaze® (fentanyl)</td>
<td>0.05-0.06 mg IV†</td>
<td>30 to 60 minutes</td>
<td>Drowsiness, light-headedness, weakness, euphoria, dry mouth.</td>
<td>Reverse with naloxone‡ as above</td>
</tr>
<tr>
<td>Narcotic combination</td>
<td>Paracetamol (acetaminophen) with codeine</td>
<td>300/30 mg orally 1 hour before procedure</td>
<td>3 to 6 hours</td>
<td>Drowsiness, light-headedness, weakness, dry mouth.</td>
<td></td>
</tr>
<tr>
<td>Non-narcotic (NSAID)</td>
<td>(ibuprofen)†</td>
<td>400-800 mg orally 30 to 60 minutes before procedure</td>
<td>Up to 5 hours</td>
<td>Possible gastrointestinal upset</td>
<td>Antiprostaglandin effect</td>
</tr>
<tr>
<td>Non-narcotic</td>
<td>Paracetamol (acetaminophen)†</td>
<td>500-1000 mg orally 30 to 60 minutes before procedure</td>
<td>Up to 4 hours</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

† Appears in the World Health Organization's list of essential drugs.

‡ 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 that their effects, while rapid in onset, are not immediate and in combination they are more likely to produce side effects (respiratory depression). Repeated addition of small doses is a safe way to administer these potent drugs to obtain their important effects without encountering problematic side effects.
Use of Medications for Pain

**SEDATIVES**

Light to moderate doses of sedatives, such as diazepam, will induce relaxation, reduce fear and decrease memory of the procedure. (See Table E-2 for specific dosages.) 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 may be administered by oral or parenteral routes. It is important not to oversedate the patient as 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 use. If women must wait some time before treatment, diazepam may be a good choice.

**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 0.2 mg flumazenil (Mazicon or Reversed) given intravenously. Repeat in 1 minute if necessary. Respiratory support (oxygen, airway and resuscitation equipment) must be available and provided when necessary.
### Table E-2

**Sedatives for Use with Analgesics and/or Anesthesia in MVA**

<table>
<thead>
<tr>
<th>Type of Sedative</th>
<th>Drug Name (Generic)</th>
<th>Usual Dose and Timing</th>
<th>Duration of Effect</th>
<th>Common Side Effects</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central nervous system depressant; benzodiazepine</td>
<td>Valium® (diazepam)¹</td>
<td>5-10 mg IV ¹¹</td>
<td>2 hours</td>
<td>Blurred vision, dizziness, headache, nausea, redness/pain at injection site, numbness/tingling/pain of hands or feet</td>
<td>Reversal of benzodiazepines can be accomplished by flumazenil (Mazicon® or Reversed) 0.2 mg IV. Repeat in 1 minute if necessary. Diazepam has a slight amnesic effect.</td>
</tr>
<tr>
<td></td>
<td>Versed® (midazolam)</td>
<td>0.5-1.0 mg IV ¹¹</td>
<td>30 to 60 minutes</td>
<td>Blurred vision, dizziness, headache, nausea, redness/pain at injection site, numbness/tingling/pain of hands or feet</td>
<td>Same as above. Midazolam has a moderate amnesic effect.</td>
</tr>
</tbody>
</table>

¹ Appears in the list of essential drugs published by the World Health Organization.³

¹¹ All analgesic and sedative drugs given intravenously should be administered slowly and intermittently. They should be given just before starting the procedure, keeping in mind that their effects, while rapid in onset, are not instantaneous and in combination they are more likely to produce side effects. Repeated titration of small doses is a safe way to administer these potent drugs to obtain their important effects without encountering problematic side effects.

**REFERENCES**


APPENDIX F

EQUIPMENT AND SUPPLIES NEEDED FOR MVA

Basic instruments and consumable supplies needed to perform MVA include:

- Bivalve speculum (small, medium or large)
- Uterine tenaculum or vulsellum forceps
- Sponge or ring forceps (2)
- 10-20 ml syringe and 22-gauge needle (for paracervical block)
- MVA instruments
  - MVA vacuum syringes, single or double valve
  - flexible cannulae of different sizes
  - adapters (if double valve syringe)
  - silicone for lubricating MVA syringe o-ring
- Light source (to see cervix and inspect tissue)
- Swabs/gauze
- Antiseptic solution (preferably an iodophor such as povidone iodine)
- Gloves, sterile or high-level disinfected surgical gloves or new examination gloves
- Gloves, utility
- Strainer (for tissue inspection)
- Simple magnifying glass (x 4-6 power) (optional)
- Clear container or basin (for tissue inspection)

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

- Local anesthetic (e.g., 1% lidocaine without epinephrine)
- Curettes, sharp
- Tapered mechanical dilators (Pratt [metal] or Denniston [plastic])
The essential drugs needed for emergency postabortion care that should be available at the primary and referral levels are listed in Appendix G.

**Furniture and Equipment**

Before beginning the MVA procedure, make sure that the following equipment and supplies are in the treatment room and in working order:

- Examination table with stirrups
- Strong light (e.g., gooseneck lamp)
- Seat or stool for clinician (optional)
- Plastic buckets for decontamination solution (0.5% chlorine)
- Puncture-proof container for disposal of sharps (needles)
- Leak-proof container for disposal of infectious waste

**For High-Level Disinfection or Sterilization of Instruments**

These items should be available for processing instruments:

- Nonmetal (plastic) containers
- Detergent
- Clean water
- Chlorine solution (concentrated solution or dry powder)
- High-level disinfectant or sterilization agent (optional)
- Large pot for boiling cannulae (optional)
- Steamer for steaming surgical gloves, cannulae and surgical instruments
- Autoclave (steam) or convection oven (dry heat)
For Emergency Resuscitation

These items are seldom required in uterine evacuation cases but are needed for possible emergency use:

- Spirits of ammonia (ampules)
- Atropine
- IV infusion equipment and fluid (DSW or D/S)
- Ambu bag with oxygen (tank with flowmeter)
- Oral airways
### APPENDIX G

**ESSENTIAL DRUGS FOR EMERGENCY POSTABORTION CARE†**

<table>
<thead>
<tr>
<th>ANESTHETICS, LOCAL††</th>
<th>ANTISEPTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atropine</td>
<td>Chlorhexidine, ††† 4% (Hibitane, Hibiscrub)</td>
</tr>
<tr>
<td>Diazepam</td>
<td>Iodine preparations, 1-3%</td>
</tr>
<tr>
<td>Lignocaine, 1% without epinephrine</td>
<td>Iodophors (Betadine)</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% (commercial chlorine bleach solution)</td>
</tr>
<tr>
<td>Ibuprofen</td>
<td>Formaldehyde, 8% (Formalin)</td>
</tr>
<tr>
<td>Pethidine (or suitable substitute)</td>
<td>Glutaraldehyde, 2% (Cidex)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANTIBIOTICS</th>
<th>TETANUS TOXOID†††</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broad spectrum antibiotics such as:</td>
<td></td>
</tr>
<tr>
<td>Ampicillin</td>
<td></td>
</tr>
<tr>
<td>Benzylpenicillin</td>
<td></td>
</tr>
<tr>
<td>Crystalline penicillin</td>
<td></td>
</tr>
<tr>
<td>Chloramphenicol</td>
<td></td>
</tr>
<tr>
<td>Metronidazole</td>
<td></td>
</tr>
<tr>
<td>Sulfamethoxazole</td>
<td></td>
</tr>
<tr>
<td>Sulfamethoxazole-trimethoprim</td>
<td></td>
</tr>
<tr>
<td>Tetracycline</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BLOOD PRODUCTS††</th>
<th>OXYTOCICS††</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dried human plasma</td>
<td>Ergometrine injection</td>
</tr>
<tr>
<td></td>
<td>Ergometrine tablets</td>
</tr>
<tr>
<td></td>
<td>Oxytocin injection</td>
</tr>
</tbody>
</table>

| INTRAVENOUS SOLUTIONS†† | |
|-------------------------| |
| Water for injections    | |
| Sodium lactate (Ringer's) | |
| Glucose 5% and 50%      | |
| Glucose with isotonic saline | |
| Potassium chloride      | |
| Sodium chloride         | |

---


†† Should be available at all secondary or referral facilities.

††† Savlon, which contains chlorhexidine, is not listed because the concentration of chlorhexidine varies from country to country from as little as 1% to 4%. (Check local products for approximate concentration before using.)

†††† Anti-D tetanus immunoglobulin (human), or antitoxin, if available, should be provided when indicated.
APPENDIX H

PRECAUTIONS FOR PERFORMING MVA

In the course of the initial assessment, conditions may be discovered that indicate the need to delay the MVA procedure, initiate other treatment before beginning the MVA or the need to use a different technique for emptying the uterine cavity. The precautions and rationale for each of these conditions is outlined below.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Precaution/Management</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shock (due to hemorrhage or sepsis)</td>
<td>Stabilize the patient: • oxygen • IV fluids • antibiotics (if there are signs of septic shock) • blood transfusion if needed</td>
<td>Shock is a life-threatening condition. It should be managed and the patient stabilized before the MVA is performed.</td>
</tr>
<tr>
<td></td>
<td>Delay MVA until shock management has begun.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perform MVA without delay after the patient's condition has stabilized.</td>
<td></td>
</tr>
<tr>
<td>Severe vaginal bleeding</td>
<td>Assess all causes of bleeding.</td>
<td>Severe bleeding may also be due to intra-abdominal injury, cervical or vaginal laceration, or uterine perforation, and may be life-threatening.</td>
</tr>
<tr>
<td></td>
<td>Sources of bleeding other than retained POC (e.g., vaginal/cervical laceration, genital trauma, intra-abdominal injury, uterine perforation) should be managed first.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If tissue can be seen in the cervical os, remove it.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evacuate the POC using MVA after patient's condition has been stabilized.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sometimes the simple act of removing tissue will allow the uterus to contract and slow the bleeding.</td>
</tr>
<tr>
<td>Intra-abdominal injury</td>
<td>Assess and manage potential intra-abdominal injury immediately (IV fluids, antibiotics and blood transfusion if signs of shock).</td>
<td>A rigid abdomen or severe acute abdominal pain indicate the possibility of a serious intra-abdominal injury and the need for immediate surgical assessment.</td>
</tr>
<tr>
<td>(including suspicion of ectopic pregnancy or existing uterine perforation)</td>
<td>Perform surgery (laparoscopy or laparotomy as required).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evacuate the POC using MVA after patient's condition has been stabilized.</td>
<td></td>
</tr>
</tbody>
</table>
### Precautions for Performing MVA

<table>
<thead>
<tr>
<th>Condition</th>
<th>Precaution/Management</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Septic abortion (local or generalized infection from the abortion) • chills or sweats • fever (&gt; 38°C) • foul-smelling or purulent (pus-like) vaginal discharge • distended abdomen • rebound tenderness • history of unsafe abortion • abdominal pain • prolonged bleeding • general discomfort; flu-like symptoms</td>
<td>Give antibiotics (preferably intravenously) and IV fluids. If exposure to tetanus possible and if uncertain about patient's vaccination history, give tetanus toxoid or tetanus antitoxin. Evacuate POC using MVA as soon as antibiotic cover is established.</td>
<td>Infection/sepsis (tetanus and gangrene), septic shock, septicemia and peritonitis can develop due to retained POC. Such infections can be life-threatening and must be treated immediately. Performing MVA without first initiating antibiotic treatment can worsen the infection.</td>
</tr>
</tbody>
</table>

### Medical History

<table>
<thead>
<tr>
<th>Condition</th>
<th>Precaution/Management</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of blood disorder that could lead to coagulopathy (excessive bleeding)</td>
<td>MVA should be performed with extreme caution and where full emergency backup facilities are available, including fresh blood and clotting factor products.</td>
<td>The potential for excessive bleeding during and after MVA requires that full emergency backup facilities must be immediately available.</td>
</tr>
<tr>
<td>Severe anemia (Hb &lt; 7 gm/dl)</td>
<td>Perform MVA with extreme caution where full emergency backup facilities are available, especially IV fluids and possibly plasma expanders.</td>
<td>The bleeding resulting from MVA potentially could further worsen the anemia, leading to shock.</td>
</tr>
</tbody>
</table>

### Physical/Pelvic Examination

<table>
<thead>
<tr>
<th>Condition</th>
<th>Precaution/Management</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uterine size larger than LMP history</td>
<td>Review history for possible causes of size discrepancy. Repeat pelvic exam after patient has emptied her bladder. Be sure enlargement is not due to adnexal or rectal mass. Have more experienced provider examine the patient. Proceed with caution and where full emergency backup facilities are available.</td>
<td>May indicate pregnancy is more advanced than LMP history, multiple pregnancies, molar pregnancy (trophoblast disease), uterine cavity filled with blood clots (postabortal syndrome) or uterine fibroids.</td>
</tr>
</tbody>
</table>
## Precautions for Performing MVA

<table>
<thead>
<tr>
<th>Condition</th>
<th>Precaution/Management</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| Uterine size uncertain                        | If there is uncertainty about the uterine size, proceed as if the uterus is larger than the history indicates.  
Suggestions for getting a better assessment of uterine size:  
- A retroverted uterus may be more accurately assessed by rectovaginal exam.  
- A more experienced provider may give a more accurate sizing.  
- Ultrasound, if available, can give an accurate assessment of uterine size. | The potential for excessive bleeding and the clinical skill required increase with uterine size. It is imperative that the clinician who performs the MVA be as certain as possible about the size of the uterus before beginning the procedure. |
| Uterine fibroids                               | If uterine fibroids make it impossible to assess uterine size, perform MVA with extreme caution. Full emergency backup facilities should be available.  
See "Uterine size uncertain" above. | When fibroids are present the risk of incomplete evacuation is increased. It is important that full emergency backup be available. |
| Uterine size by pelvic examination beyond the first trimester (based on weeks from LMP) | Insure that instruments and personnel capable of evacuating a large uterus are present. This may require large bore canulae or large curettes/forceps capable of removing retained placental/fetal fragments. | When gestations greater than the first trimester are present, simple vacuum aspiration equipment may not be sufficient to safely and effectively remove retained POC. |

---

**Postabortal Care**

H-3
APPENDIX I

PREPARING INSTRUMENTS FOR MVA

Place on a sterile or HLD tray several appropriately sized cannulae. In order to effectively transfer the vacuum from the syringe to the uterus, the cannula should fit snugly in the cervix. Estimation of the most appropriate cannula size is based on the actual size of the uterus and the cervical dilation present as determined by pelvic examination. It is advisable to have cannulae of several sizes on hand.

Table I-1. Appropriate Cannula by Uterine Size

<table>
<thead>
<tr>
<th>Approximate Uterine Size (Weeks LMP)</th>
<th>Approximate Cannula Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-8</td>
<td>6 mm</td>
</tr>
<tr>
<td>&gt;8</td>
<td>size equal to weeks LMP</td>
</tr>
</tbody>
</table>


Prepare MVA syringes and adapters (if needed), referring to the following table. It is helpful to have two MVA syringes available before beginning a procedure because it is difficult to predict how much blood and tissue will be remaining in the uterus. Note that the colored dots on the cannulae match the color of the appropriate adapter.

Table I-2. Compatible Instrument Parts

<table>
<thead>
<tr>
<th>Cannula Size</th>
<th>Adapter Color</th>
<th>Syringe Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>4, 5, 6 mm</td>
<td>No adapter needed</td>
<td>Single</td>
</tr>
<tr>
<td>4, 5, 6 mm</td>
<td>blue</td>
<td>Double</td>
</tr>
<tr>
<td>7 mm</td>
<td>tan</td>
<td>Double</td>
</tr>
<tr>
<td>8 mm</td>
<td>ivory</td>
<td>Double</td>
</tr>
<tr>
<td>9 mm</td>
<td>dark brown</td>
<td>Double</td>
</tr>
<tr>
<td>10 mm</td>
<td>dark green</td>
<td>Double</td>
</tr>
<tr>
<td>12 mm</td>
<td>No adapter needed</td>
<td>Double</td>
</tr>
</tbody>
</table>


Inspect the syringes and cannulae. In order to be effective, a syringe must be able to maintain a vacuum. Discard any syringes with visible cracks or defects, or syringes that do not hold a vacuum. Discard any cannulae with cracks or other signs of wear.
Attach the adapter (if required) to the end of the syringe or cannula. Once the tip of the cannula has been inserted through the cervix, it will be attached to the syringe using the adapter.

Check the plunger and valve. The plunger should be positioned all the way into the barrel and the pinch valve should be open with the valve button(s) out.

Close the pinch valve by pushing the button(s) down and forward toward the syringe tip. The valve can be felt locking into place.

Figure I-1. Closing the Pinch Valve


Prepare the syringe by grasping the barrel and pulling back on the plunger until the arms of the plunger snap outward at the end of the syringe barrel, holding the plunger in place. Check that the plunger arms are in a stable position, fully extended to the sides and secured over the edge of the barrel. With the arms snapped in this position, the plunger will not move forward and the vacuum will be maintained. Incorrect positioning of the arms could allow them to slip back inside the barrel, possibly pushing the contents of the syringe or air into the uterus. Never grasp the syringe by the plunger arms.
Figure I-2. Preparing the Syringe


Check the syringe for vacuum tightness before use. Leave the syringe for several minutes with the vacuum established. Open the pinch valve by releasing the button(s). Air can be heard rushing into the syringe, indicating that there was a vacuum in the syringe. If a rush of air is not heard, follow the instructions in Chapter 8 to lubricate the o-ring with silicone and test the vacuum again. Replace the o-ring or use another syringe if the syringe still will not hold a vacuum.

Re-establish the vacuum at the time of the procedure.
EVALUATION OF POSTABORTION CARE
REFERENCE MANUAL

Please indicate on a 1-5 scale your opinion of the following chapters

5-Excellent 4-Very Good 3-Satisfactory 2-Needs Improvement†1- Unsatisfactory†

<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>Easy to read</th>
<th>Contains need to know information</th>
<th>Figures and tables helpful</th>
<th>Useful in problem solving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Evaluation of Manual: Postabortion Care</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHAPTER</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduction to Postabortion Care</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Talking with Patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial Assessment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infection Prevention</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment of Incomplete Abortion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management of Problems and Complications During MVA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processing MVA Equipment and Other Items</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postabortion Family Planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management of Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please comment on the back if you rated any chapters less than satisfactory (2 or 1).

ADDITIONAL COMMENTS

1. What topics (if any) should be included in more detail to improve the manual?

2. What topics (if any) should be reduced in detail to improve the manual?

3. What topics (if any) should be added (and why) to improve the manual?

4. What topics (if any) should be deleted (and why) to improve the manual?

5. Did you receive this manual by attending a training course? If not, how?