REFERENCE MANUAL FOR ABDOMINAL TUBECTOMY

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SIFPSA

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ENGENDERHEALTH
Improving Women's Health Worldwide

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As part of their work in strengthening training, SIFPSA and the Department of Health and Family Welfare of UP have collaborated with EngenderHealth to prepare this manual. The *Reproductive Health Resource Document for UP* (SIFPSA and the Department of Health and Family Welfare, GOUP) and the *Standards for Male and Female Sterilisation* (GOI) served as resources for the preparation of the initial draft. The manual was adapted by the participants at a workshop on the Standardization of Abdominal Tubectomy at Women's Hospital, Jhansi, held from July 17th –19th, 2000.

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PREFACE

The Government of India, the Government of Uttar Pradesh (UP) and the United States Agency for International Development (USAID) have embarked upon the Innovations in Family Planning Services (IFPS) project in Uttar Pradesh for the improvement and expansion of family planning and related reproductive health services in the public and private sectors. To undertake this project, the State Innovations in Family Planning Services Agency (SIFPSA) has been created as an autonomous society.

As part of their work in strengthening training, SIFPSA and the Department of Health and Family Welfare of Uttar Pradesh have collaborated with EngenderHealth to strengthen the service delivery skills of family planning service providers.

Female sterilization remains a commonly used method for a large number of family planning acceptors. Abdominal Tubectomy is a popular method of sterilization in U.P. The twelve-days Abdominal Tubectomy Induction Training Course aims to induct additional doctors in providing Abdominal Tubectomy.

The curriculum is designed to provide participants introduction in theory as well as skill practice, so that by the end of twelve days the doctors are competent to perform Abdominal Tubectomy The curriculum consists of a facilitator's guide and a reference Manual for the trainers and for the participants. The curriculum covers counseling, informed consent, indications and precautions, client assessment, infection prevention, anaesthesia, surgical procedure, post-operative recovery, discharge and follow-up, management of complications, practice on ZOE models, Abdominal Tubectomy demonstration on clients, provision of quality services, emergency preparedness and Cardio Pulmonary Resuscitation (CPR)

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INTRODUCTION

BACKGROUND

Worldwide Voluntary sterilisation (VS) is the most popular and effective method of contraception. Currently, female voluntary sterilisation is three times more common than male sterilisation (Ross, 1992). In addition to being permanent, VS is safe and relatively free of side effects. The most important aspect of the procedure, however, relates to its permanence. Clients must understand that sterilisation is permanent contraception and counsellors must be able to communicate this concept effectively.

Over the years, programme have evolved to the point that services are provided safely, efficiently and in a manner convenient to clients. The mortality rates for female voluntary sterilisation fell from 7.1 per 100,000 procedures for the period 1973-1981 to 3.7 per 100,000 for those done between 1982-1988, largely because of improved anaesthesia and infection prevention (Khairullah, Huber and Gonzales, 1992). Furthermore, procedures as they are performed today are truly minor operations, with small incisions and involving only a short stay at a surgical facility (i.e., only a few hours).

In India, acceptance of voluntary sterilisation has grown rapidly over the past decade. As many as 5–6 million VS procedures are now done annually in India. To ensure the quality of these services, the Ministry of Health and Family Welfare has established regional training centres and revised the VS standards. The standards address issues of informed consent, counselling, the surgical procedure, pre- and post-operative activities, follow-up and treatment of side effects and complications.

POTENTIAL CLIENTS

The following criteria for VS acceptors are required in the Government of India Guidelines (Ministry of Health and Family Welfare, Government of India, 1999):

- The client must have been married.
- Male clients should preferably be below the age of 60 years.
- Female clients should be below the age of 45 years and above 22 years.
- Although the number of children is not a necessary criterion, the couple should have at least one child whose age is above one year.
- Client or their spouse must not have undergone sterilisation in the past (not applicable in cases of failure of previous sterilisations).
- Clients must be in a perfectly normal state of mind so as to understand the full implications of sterilisation.
- Mentally ill clients must be certified by a psychiatrist and consent in such cases, should be given by the legal guardian/spouse.

DESCRIPTION

Female voluntary sterilisation (VS) is called **tubal occlusion.** One method of tubal occlusion is Abdominal Tubectomy, which permits the operating doctor to see and manipulate the fallopian tubes directly.

Abdominal Tubectomy under local anaesthesia is both safe and effective.

Major advantages of Abdominal Tubectomy under local anaesthesia are :

- Equipment and instruments are simple, inexpensive and easily maintained.
- Doctors who have little surgical training can learn to perform the procedure competently in a short time.
- It is particularly well-suited for rural areas where support staff, equipment and supplies are limited and the volume of procedures is low.
- It can be performed on an outpatient basis with a stay for a few hours.
- It may be used for both interval and postpartum tubal occlusion.

MECHANISM OF ACTION

In the female reproductive system, an egg (ovum) is produced in the ovary every month from menarche until menopause. The fallopian tubes provide a passage from the ovary to the womb (uterus). The egg travels from the ovary through the fallopian tube where it meets the sperm from the male partner. During an Abdominal Tubectomy procedure, both fallopian tubes are occluded, generally by ligating and cutting. After the procedure, the egg cannot travel beyond the occluded area and so cannot be fertilised by the sperm. After a tubal occlusion, the woman will still menstruate just as before the operation.

SURGICAL APPROACH

Abdominal Tubectomy under local anaesthesia can be performed on an outpatient basis and requires simple, inexpensive and easily maintained equipment. For both interval and post-operative procedures, the incision can be either transverse or longitudinal; for postpartum procedures, a curved incision is made just below the umbilicus. Once the abdomen is opened, the fallopian tubes are identified and occluded by ligating with suture material and then cutting out a small piece of tube. The modified Pomeroy technique is the most widely used method of tubal ligation. With this technique, a segment of the tube is tied in a loop and the top portion of the loop is cut and removed. The resected segment should be in the isthmic portion of the tube where the diameter of each stump will be the same. Following this, the abdomen is closed; a dry, sterile dressing applied and the client usually can be discharged within two to four hours after the procedure, provided there are no problems.

TIMING OF PROCEDURE

Abdominal Tubectomy can be performed in the immediate postpartum period provided there are no complications during labour and delivery, post-abortion or in the 'interval' period (6 weeks after delivery or any time when the woman is not pregnant). For **interval** procedures, Abdominal Tubectomy may be performed at any time in the menstrual cycle, although it is

preferable to do it at the end of the menstrual period or shortly thereafter to ensure that the client is not pregnant.

Immediate **post-abortion** or **postpartum** procedures should be performed within 48 hours if there are no complications. Within 48 hours after delivery, the fundus is near the umbilicus, permitting a small subumbilical incision and ready access to the fallopian tubes. In some situations, a delay of 12 hours may be justified to permit a more accurate assessment of the baby's chances for survival. The likelihood of postpartum haemorrhage is much reduced after 12–24 hours as well.

After 48 hours, a lower and larger incision may be needed and the tubes are not easily accessible. Bacteria are present more often in the tubes and endometrial cavity at this time.

After 7 days postpartum, the uterus descends into the hollow of the pelvis, further increasing surgical difficulty; therefore, the procedure generally should be delayed for 6 weeks (42 days) or later when the uterus is fully involuted. For clients who will not have tubal occlusion within the immediate postpartum period and are not breastfeeding, temporary contraception should be stressed.

In many countries, immediate postpartum (within 48 hours of delivery) tubal occlusion services are an integral part of maternity services. The major medical advantages of postpartum VS include:

- A woman generally has been admitted to the facility and her current health status usually can be established from delivery and prenatal records.
- The uterus is high in the abdomen and a small incision (1.5-3.0 cm) just below the umbilicus is usually sufficient to complete the procedure.
- The fallopian tubes are easier to reach with the uterus in this position.
- Local anaesthesia with light sedation/analgesia is usually sufficient.
- Hospital stay beyond that of a normal delivery (often 24 hours or less) is not required.

At the same time, special steps must be taken to ensure the safety of immediate postpartum VS. These include:

- Postpartum women should be carefully screened. Special problems include postpartum haemorrhage or any condition that would lead to increased risk of infection.
- Entry into the abdominal cavity must be cautious to avoid injuring the intestine.
- Special care must be taken when exposing the tubes since the engorged postpartum vessels can bleed vigorously if injured.
- The provider must ensure that ligatures on the tubes are secure to prevent slipping and haemorrhage after the procedure is completed.
- The procedure should be performed within 48 hours of delivery before involution progresses and to reduce the chances of infection.

FACILITIES AND PERSONNEL

Abdominal Tubectomy under local anaesthesia can be performed in any hospital, including community health centre, primary health centre and maternity hospital. There are certain minimum requirements, including running or potable water; electricity or other light source; toilet facilities; separate reception, counselling, examination and post-operative areas; and a clean surgical area, isolated from the other facilities. In addition, certain equipment, instruments and drugs should be available for use in the operation theatre and recovery areas and staff should be trained in its use (see **Appendix A** for more information on emergency preparedness).

The Abdominal Tubectomy procedure may be performed by doctors with basic surgical ability and skills.

PERMANENCY

Abdominal Tubectomy should be considered permanent. In India, where a few microsurgical facilities are available, it is possible in some cases to reverse the procedure, that is, rejoin the ligated fallopian tubes. Even when such services are available, however, the client may not be able to afford it, may not be a proper surgical candidate (this is a major surgical procedure) or a reversal attempt may not be successful. Therefore, couples who are considering Abdominal Tubectomy should be certain that they do not wish to have any more children.

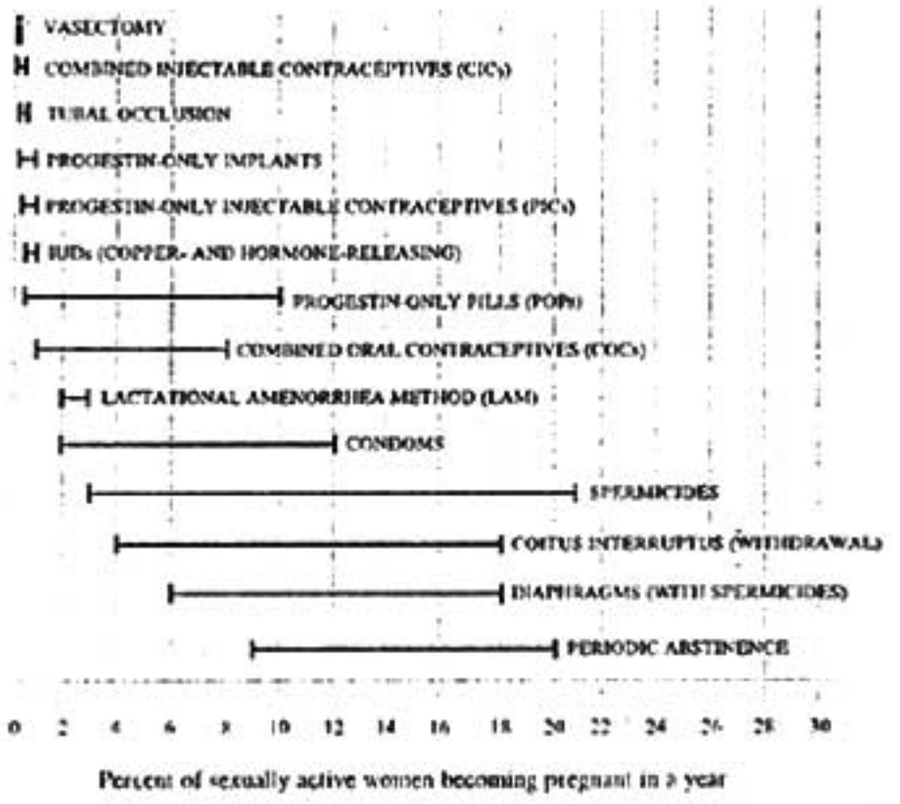
Because Abdominal Tubectomy should be considered a permanent procedure, women requesting it should be well counselled and have plenty of time to think about their decision. Some requests will come from highly motivated clients (e.g., from women with multiple pregnancies, those with medical problems, those who are older, those who have had repeated cesarian sections). Generally, these self-motivated clients need little more than a review of the information and verification that the decision was made after careful thought. Other requests may come from younger women, those with lower parity or women who have been advised not to have any more pregnancies because of medical problems. In these situations, great care should be taken with counselling, including exploring the client's feelings which may not be clear at first. All clients should give their informed consent only after careful exploration of the matter so that no person makes the decision for voluntary sterilisation without fully understanding that it is permanent.

Remember: People are less likely to change their minds after Abdominal Tubectomy when the decision has been made after much thought over a period of time.

EFFECTIVENESS

The **effectiveness** of a contraceptive method usually is the most important factor, both for the individual (or couple) trying to choose a method and for the service provider. For valid comparisons of effectiveness to be made among the most commonly used methods, failure rates must be presented not only for individuals using the method **consistently** and **correctly**, but also for **typical users**. Data presented in this way, showing the range of failure rates for the first year of use for most contraceptive methods, are illustrated in **Figure 1-1**.

Figure 1-1. Range of Theoretical and Typical Use Pregnancy Rates per 100 Women During First Year of Use



Adapted from: Labbok, Cooney and Coly, 1994; Population Action International, 1991; Trussell et al, 1990; WHO, 1993.

SAFETY

Abdominal Tubectomy under local anaesthesia in the hands of a well-trained clinician is a safe, highly effective approach for performing tubal occlusion. In many countries the mortality risk associated with an unwanted pregnancy is 50–80 times the risk of death for female voluntary sterilisation (Khairullah, Huber and Gonzales, 1992). Fewer than 1 percent of women suffer major complications as result of female voluntary sterilisation and less than 5% have even minor complications (Church and Geller, 1990).

Client assessment before the procedure also reduces the likelihood of complications. Factors that may complicate Abdominal Tubectomy include obesity, previous pelvic or abdominal surgery and previous pelvic or abdominal infection.

FAILURE

Although failure rates for Abdominal Tubectomy are very low, failure can occur. Causes of failure include abnormalities of the fallopian tubes, procedural errors and opening of the tube (recanalisation) during the healing process (Soderstrom, 1986). The presence of early, undetected pregnancy at the time of the procedure may be perceived as a failure and must be avoided. Most cases of failure occur within two years of the procedure (Pollack, 1993).

Abdominal Tubectomy does not increase the frequency of ectopic pregnancy. If a woman does become pregnant after Abdominal Tubectomy, however, she is more likely to have an ectopic pregnancy. Among women who become pregnant after voluntary sterilisation, more than one half of all pregnancies are ectopic (Pollack, 1993). Therefore, all women who have had a Abdominal Tubectomy and present with symptoms of pregnancy should be carefully evaluated.

POST-OPERATIVE PROBLEMS

There also are few side effects associated with Abdominal Tubectomy. Initial pain or discomfort associated with the surgery generally ends within a few days. While it has been suggested that "post-tubal sterilisation syndrome" (e.g. increased menstrual bleeding, dysmenorrhoea) may occur, studies have not led to conclusive evidence. Some studies suggest that menstrual bleeding changes may be caused instead by switching from another method to VS, by the normal aging process or by gynaecological abnormalities (Pollack, 1993; Post-tubal sterilisation syndrome: Does it exist? 1993).

POST-OPERATIVE BENEFITS

A beneficial effect of Abdominal Tubectomy may be a reduction in the risk for ovarian cancer. Some studies suggest that the risk may be as much as 70 per cent lower in women who have been sterilised (Edwards, 1994; Hankinson et al., 1993). Another theory is that blockage of the fallopian tubes prevents contamination of the ovaries with possible carcinogens (e.g., talcum powder). Further studies of the mechanism of action need to be conducted (Pollack, 1993).

SATISFACTION AND DISSATISFACTION AFTER ABDOMINAL TUBECTOMY

Most clients choosing Abdominal Tubectomy are happy with their decision. As with any major life choice, however, some individuals will later have a change of mind about the decision to end their fertility. In general, age at the time of sterilisation has proven to be the best predictor of regret; in one study 4.3 per cent of women between the ages of 20 - 24 regretted the surgery while only 2.4 per cent of those aged 30-34 had similar regret (Very few Women found to Regret Sterilisation 1992, OBGyn News Jan 1:24: 1992).

When this happens, it is often the result of their having experienced an unanticipated change of circumstances, such as a new spouse or loss of a child, which may lead them to want more children. It is not possible to prevent all dissatisfaction, but if programme s take measures to assure voluntary, informed choice and if they assist clients before surgery to consider the implications of ending fertility, post-operative dissatisfaction and regret will be kept to a minimum. For those clients who do adjust poorly after Abdominal Tubectomy the programme should offer Counselling to help them come to terms with the effect of their decisions. Finally, if reversal services are available and realistic for the individual client, they should be presented as an option.

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TWO

COUNSELLING

BACKGROUND

Counselling is of particular importance in programme providing voluntary sterilisation services because the method involves surgery and is intended to be permanent. Voluntary sterilisation involves consequences, risks and fears that need to be discussed with each client. Providers have an obligation to ensure that the client understands the benefits, risks, implications of and alternatives to voluntary sterilisation, and that those who choose it do so voluntarily. The service provider should discuss each client's feelings about ending fertility and assess the client's psychological readiness for the procedure and its consequences.

Remember: *Counselling is a critical checkpoint between the client's intention to seek* voluntary sterilisation and the steps that follow, leading to surgery.

Service providers should listen to clients carefully to determine if there are signs of doubt, conflict, misunderstanding or unrealistic expectations about the procedure. In view of the critical and sensitive nature of this decision, it is essential that the counsellor collects information from the client about her personal circumstances and feelings about voluntary sterilisation (World Federation, 1988).

One of the principal aims of counselling is to identify clients who are likely to adjust poorly or change their minds after undergoing a procedure. If proper counselling is provided, regret is uncommon among clients. Regret is often triggered by major changes in circumstance, such as the loss of child or partner or remarriage. It is sometimes strong enough to lead clients to seek reversal. Since reversal is usually not a realistic option, it is important to help clients avoid regret.

A few characteristics have been identified which, if not addressed during counselling, may increase the likelihood of regret following surgery (Table 2-1). These factors should not be used as arbitrary ground for denying sterilisation to a client. Rather, they are signals to the service provider to devote special time and care to ensure that the client carefully weighs the choice of voluntary sterilisation and its alternatives. In such cases, it may be appropriate to encourage these individuals to take more time to consider their request for voluntary sterilisation and to accept a temporary method in the interim.

In addition, counselling helps potential clients for sterilisation by preparing them psychologically, both for what it will mean not to be able to have any more children and for the experience of surgery. By guiding clients to consider the implications of their choice and helping them address whatever doubts or anxieties they may have before surgery, service providers enhance the chances that those who choose voluntary sterilisation will be satisfied with their decision. In general, **clients are likely to adjust well and be satisfied with their decision after surgery if service providers have told them what to expect and if they take responsibility for the decision to end their fertility.**

Finally, counselling is an ongoing process that is integrated into all aspects of family planning service provision, enabling clients to make a voluntary, informed choice. Every person working in a family planning service centre contributes to this process. Therefore, it is important that all of them are oriented to family planning counselling in order to provide quality service.

If more people have accurate information about family planning methods, it is less likely that false rumours will develop and spread. Counselling of potential clients helps to ensure that clients will be satisfied and also reduces return visits to the clinic or discontinuation due to misunderstanding of the method.

Table 2-1. Some Warning Signs, which If Not Addressed During Counselling, Could Increase Regret after Voluntary Sterilisation

- Young age
- Children are few in number or of the same sex or in poor health
- Pressure from someone else
- Marital instability
- Partner not in agreement
- Temporary stress
- Lack of access to other methods of contraception
- Unresolved doubt
- Economic inducement
- Incomplete or incorrect information about voluntary sterilisation
- Sterilisation is medically indicated
- Excessive interest in reversal
- History of psychological problems, including sexual problems

Adapted from: Neamatalla and Harper, 1990.

PERMANENCY

Voluntary sterilisation procedures should be considered permanent. During counselling it is important to identify clients who are indecisive about undergoing surgery or concerned about reversal and to help such clients to consider their decision further. In India, reversal of ligation is available at limited clinical sites where microsurgical facilities are present. The counsellor should explain, however, the following points:

- Reversal involves complicated and difficult surgery, requiring great skill.
- Some individuals who request reversal may be inappropriate because of age, fertility impairments or insufficient length of tube for reversal.
- Even for clients who are suitable candidates for reversal and even when a highly skilled doctor using the most advanced surgical techniques performs the reversal procedure, functional success (term pregnancy) cannot be assured.
- Reversal procedures are costly and the client is usually responsible for the expense.

Women who are advised sterilisation for medical reasons are at high-risk for regret. These women may not have chosen to end their fertility under other circumstances; thus, they need help to understand and accept why an end to childbearing is recommended. They must understand the dangers that pregnancy poses to them. Barring medical contraindications, effective, long-acting contraceptives (e.g., IUCDs) should be presented. As an alternative, vasectomy can be presented as a choice to women who do not want to undergo sterilisation.

A client's concept of acceptability and appropriateness changes with circumstances. Therefore, the client has the right to decide when to start or switch methods.

CLIENT RIGHTS

There are various reasons why individuals and couples decide to start, continue or stop practicing family planning. Some people may wish to delay the birth of their first child. Others may want to space the births of their children and some may want to ensure that only a desired number of children are born. There is another group of people who may wish to use family planning services not so much for protection from unplanned or unwanted pregnancy, but for other reasons, including achieving pregnancy or for the protection of their reproductive and sexual health.

Any member of the community who is of reproductive age should be considered a potential client of family planning services. Moreover, all individuals in the community have a right to information about family planning for themselves and their families, regardless of their ethnic origin, socioeconomic status, religion, marital status or political beliefs. Finally, all persons have a right to decide freely whether or not to practice family planning.

Family planning programmes should assist people in the practice of informed, free choice by providing unbiased information, education and counselling, as well as a range of contraceptive methods. Clients should be able to obtain the method they have decided to use.

Clients also have the right to discuss their concerns in an environment in which they feel comfortable and confident. The client should be aware that her/his conversation with the service provider will not be listened to by other people.

When a client is undergoing a physical examination or surgical procedure it, should be carried out in an environment in which her right to bodily privacy is respected. The client's right to privacy also includes the following aspects related to quality of services:

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[1] *Adapted from:* Huezo and Briggs, 1992.

- When receiving counselling or undergoing a physical examination, the client should be informed about the role of each person in the room (e.g., service providers, individuals undergoing training, supervisors, instructors, researchers, etc).
- A client should know in advance the type of physical examination that is going to be done.

A client should feel comfortable when receiving family planning services. To a certain extent this is related to the adequacy of service delivery facilities (e.g., proper ventilation, lighting, seating and toilet facilities). During the Abdominal Tubectomy procedure, however, comfort is directly related to the provision of gentle, supportive care. Moreover, the time the client spends at the premises to receive requested services should be reasonable.

The services provided to a client should not be discontinued unless a decision to do so is made jointly between the provider and the client. In particular, a client's access to other services should not depend on the continuation or refusal of contraceptive services. Additionally, referral and follow-up are two important aspects of a client's right to continuity of services.

Finally, the client 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 programme's ongoing effort to monitor, evaluate and improve its services.

BENEFITS OF COUNSELLING

For the woman

- Counselling results in the woman arriving at a voluntary and informed decision. She feels in control of her choice of Abdominal Tubectomy and does not feel she has been pressurised into accepting a method of contraception with which she does not feel happy.
- The woman knows exactly what to expect with Abdominal Tubectomy. She understands all the benefits it will offer and will also be prepared for any side effects that may develop.
- She knows whom to ask for advice if she feels concerned about anything at any time.
- She knows that the surgery is permanent.

For the clinician

- Although counselling may appear to be time-consuming, it is cost-effective and saves time in the long run. Satisfied clients spread positive messages regarding the contraceptive method they are happy with.

COUNSELLING PROCESS

Counselling focuses on the individual woman's needs and situation and service providers are willing to listen to the woman's questions and concerns. Counselling must be based on trust and respect between the client and the service provider. Staff must provide a prospective Abdominal Tubectomy client with all the information necessary to make a reasoned, non-coerced decision to terminate her fertility. The information must be in the language and terminology that the woman best understands.

Remember: All information exchanged in the counselling session should be treated as confidential.

Family planning counselling should enable a client to:

- Consider her reproductive goals;
- Make free, informed and voluntary decisions about fertility and contraception; and
- Understand how to use her method of choice safely and effectively.

The elements of the counselling process have been organised into a system called **GATHER** (Gallen, Lettenmaier and Green, 1987; Lettenmaier and Gallen, 1987). This acronym is designed to help service providers remember important points in an effective counselling session. **GATHER is one approach to counselling; in practice, counselling should be tailored to the individual circumstances and may follow a different sequence.**

GATHER means:

G	—	Greet
A	—	Ask
T	—	Tell
H	—	Help
E	—	Explain
R	—	Return visit / Refer

Stages in Counselling

The counselling process for clients considering Abdominal Tubectomy goes through three stages with the second stage having several steps.

Stage I. General Counselling

This is the first stage and is carried out during the initial contact with the family planning client. During this session, family planning needs are discussed; information on various contraceptive options is provided; client concerns, myths, questions are addressed; and decision-making and method choice begin.

Stage II. Method-Specific Counselling

This is the second stage. In this stage, decision-making and method choice occur; more specific information on the chosen method is provided; the screening process and procedures are explained; instructions regarding use is given; verification is done, by having the client repeat back key instructions; what to do if problems arise is discussed; and when to return is discussed.

In the case of clients opting for voluntary sterilisation, the following steps are carried out:

Step 1

Method characteristics (benefits and limitations) and potential risks/complications are explained:

- How the method prevents pregnancy is explained;
- The client is told that sterilisation is permanent;
- How the procedure is performed, how long it takes and what discomfort, if any, to expect are explained;
- The client is made aware that sterilisation does not affect normal sexual functioning, physical or mental health;
- The consequence of failure is explained;
- Warning signs or regret are addressed **(Table 2-1, pg. 10)** and the service provider is confident that the client's decision is informed, voluntary and well considered; and
- The client is screened (history and physical examination by a doctor) to ensure that she has no contraindications for the surgical procedure.

Step 2 (Pre-procedure counselling)

Though the client has been made to understand how the procedure is performed and how long it will take in the previous step, the client may still have last minute doubts that must be addressed:

- Any questions that the woman may have regarding the procedure and what she can expect (e.g., how long it will last, recovery period, pain at the incision site for a few days, etc.) should be answered.
- The request form is reviewed with the client to ensure that she has indeed given an informed voluntary consent for the permanent surgical method of contraception.
- The woman is given clear instructions on how to prepare herself for surgery.

Step 3 (Post-procedure counselling)

This is usually given immediately after surgery. Some elements of this type of counselling, however, should be given earlier and reinforced at this time (e.g., pain at the incision site for a few days). Post-procedure counselling should focus on those warning signs (e.g., fever, persistent abdominal pain, bleeding or pus at the incision site) which indicates the need for a quick return to the clinic. In addition, she should be:

- Told whom to contact if she develops any problems or has any concerns, and
- Given written information telling her the date of her follow-up visit.

Stage III. Follow-up Counselling

Information given post-procedure is reinforced. Service providers need to listen attentively and be prepared to answer questions about problems the client has had. Answering questions helps a client cope with problems or side effects. At each follow-up visit the following should be addressed gently and patiently:

- Problems encountered since the last visit, and
- Concerns about side effects and/or problems.

The key points and steps in providing counselling for Abdominal Tubectomy are summarised in Figure **2-1, below.**

COUNSELLING POST-ABORTION CLIENTS

Precautions must be taken with respect to the timing of counselling for sterilisation after abortion to assure that the stress of termination or related complications do not influence the client's decision. The possibility of the post-abortion client making a hasty decision may result in a high level of regret.

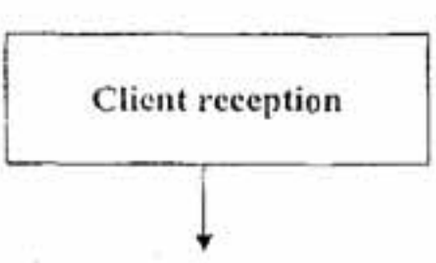
Clients may be informed about their contraceptive options at any time before or after the abortion, but the decision to undergo sterilisation and the documentation of the informed consent must not take place until the client is free from stress of the abortion and her judgement is unimpaired.

Acceptance of contraception must not be a prerequisite for abortion services or treatment of abortion complications. Depending on the receptivity of the woman, counselling about family planning can be offered to the client before the abortion, while she is in the health facility after abortion or at the follow-up visit.

Remember: When considerable time has passed between signing the form and the delivery or abortion, the provider must confirm the client's decision to undergo sterilisation and remind her that she has the right to change her mind.

Figure 2-1. The Counselling Process for Abdominal Tubectomy

Stage 1. General Counselling



- Greet the client by introducing yourself and warmly welcoming her to the clinic.
- Ask the client why she has come to see you. For information? For a method? Because of a problem with a method?
- Explain the purpose of the counselling session.

Client counselling

- Gather information from the client:
  - Personal data (age, number and sex of children, marital status).
  - Previous contraceptive experience, if any.
  - Health status.
- Assess what the client knows about the following:
  - Human reproductive system.
  - Benefits, risks, side effects of temporary and permanent methods.
- Provide information to the client.
  - Tailor information depending upon client's knowledge about family planning goals.
  - Provide accurate, unbiased information.
  - Correct misunderstanding and fill gaps in knowledge.
- Help the client choose a method that suits her health and reproductive needs.

Stage II. Method-Specific Counselling (If she chooses Abdominal Tubectomy)

Client counselling Step 1

- Explain in detail the following:
  - How the method prevents pregnancy (use an anatomic diagram or model to explain).
  - How the procedure is performed, how long it takes and what discomfort if any, to expect (use an anatomic diagram or model to explain).
  - Sterilisation does not affect normal sexual functioning or physical or mental health.
  - Method characteristics (benefits and limitations) and potential risks/complications.
  - Consequence of failure.
  - Abdominal Tubectomy does not protect the woman from RTIs and other STIs, including HIV/AIDS.
- Ensure that the client understands that the method involves surgery and is intended to be permanent. Explain that reversal involves complicated and difficult surgery, requiring great skill, and even then functional success (term pregnancy) cannot be assured.
- Assess the client's decision and feelings:
  - Why does the client want to end fertility (completed family size, economic reasons, health reasons, etc.)?
  - How long has the client been considering sterilisation ?
  - What does the partner think?

- How would the client feel if circumstances changed after the sterilisation (death of child or partner, divorce, remarriage)?

- Ask yourself: Is the client making a well-considered decision? (See Table 2-1, pg 11 for warning signs).
  Carry out a physical examination of the client to rule out contraindications for the surgical procedure.
- If there are no contraindications for Abdominal Tubectomy, ask her to sign the consent form.

Pre-procedure Counselling

Step 2

- Review the consent form with the client to ensure that she has indeed given an informed, voluntary consent to have a permanent method of contraception. Abdominal Tubectomy.
- Ask the woman if she has any questions regarding the procedure.
- Explain to her what she can expect (e.g., how long it will last, recovery period, pain at the incision site, etc).
- Give her clear instructions on how to prepare for surgery.
- Give her clear instructions on post-operative care.

Post-procedure Counselling

Step 3

- After sedation has worn off, give post-operative instructions, orally and in writing including how she should care for the surgical site and what to do if she experiences any problem or side effects.
- Provide information on warning signs for medical problems and the need to return to the clinic immediately should any occur.
- Schedule a return visit within 7 days.
- Discuss arrangements for discharge.
- Assure the client she can return to the same clinic at any time to receive advice and medical attention.
- Answer any remaining client questions.
- Complete the client record.

Stage III. Follow-up Counselling

Client counselling

- Inquire about problems and respond to concerns about side effects.

RUMOURS AND FACTS

Correcting rumours and misinformation is an important job of family planning providers. When talking to the client about rumours and misinformation, do not just say that what they have heard is not true. Always explain politely or show why it is not true, and explain what is true. Be careful not to embarrass the client because s/he has a mistaken idea or belief.

The following are some of the more common mistaken ideas:

Rumour: After an Abdominal Tubectomy, a woman becomes weak and sick and can no longer do heavy work.

Response: Explain that Abdominal Tubectomy has no long-term effect on a woman's ability to work, on her strength or energy. A woman can resume her normal activities after the Abdominal Tubectomy procedure (after a short period of rest to recover from the surgery). If the woman knows of someone who had health problems after an Abdominal Tubectomy, these were most probably due to the woman's poor health prior to the surgery.

Rumour: Abdominal Tubectomy can lead to premature menopause.

Response: Explain that the procedure does not alter in any way a woman's menstrual cycle. She will have regular periods just as before the procedure. Abdominal Tubectomy is not a hysterectomy, her uterus and ovaries are intact and she will continue to produce eggs and menstruate.

Rumour: Abdominal Tubectomy lessens a woman's satisfaction during sexual intercourse.

Response: Explain that a woman's sexual desire and physical response to sexual stimulation do not change after Abdominal Tubectomy. Indeed, sexual satisfaction is often enhanced because she and her husband will not have to worry about pregnancy.

To help the client understand better and remember the most important facts about voluntary sterilisation, be sure to explain them to her clearly and in simple terms, and repeat them several times. Important facts about Abdominal Tubectomy are summarized in Table 2-2.

Table 2-2. Important Facts About Abdominal Tubectomy

WHO CAN HAVE AN ABDOMINAL TUBECTOMY?	
Abdominal Tubectomy is appropriate for women who: • Want a convenient, reliable and permanent method of contraception. • Are certain they want no more children. • Might have a high-risk pregnancy due to their age or health problems.	***Abdominal Tubectomy is not appropriate for women who:*** • Are considering having more children • Are at high-risk for surgical complications.
BENEFITS AND LIMITATIONS OF ABDOMINAL TUBECTOMY	
Benefits: • Reliable, permanent method of contraception. • Does not interfere with sexual intercourse. • Very effective. • No daily action required. • Easy to use and requires no further action other than follow-up visit; does not interfere with normal daily activities. • Comfortable once the incision site has fully healed (about 1 week). • Few side effects.	***Limitations:*** • Abdominal Tubectomy is a surgical procedure and, therefore, may be associated with infection, bleeding or bruising. • The woman cannot discontinue the method (counselling should make her understand that the method is permanent). • Abdominal Tubectomy does not protect the woman from RTIs and other STIs, including HIV/AIDS.

TIPS ON COUNSELLING

- Listen attentively.
- Answer questions objectively.
- Reinforce important information on side effects, warning signs, etc.

Remember: Counselling should be part of every interaction with the client.

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THREE

INFORMED CONSENT[1]

BACKGROUND

The process that leads to informed consent is important to clients because it ensures that they receive the information they need to make informed, well-considered decisions regarding their fertility. In addition, the process lessens the possibility of regret after Abdominal Tubectomy, which is more likely to occur when clients are not fully informed or when they do not request the procedure voluntarily. Furthermore, the act of signing an informed consent document in the presence of a witness may impress upon clients that they are making an important and, in most cases, irrevocable decision.

Properly administered, informed consent procedures are important to service providers for three reasons:

- They help to assure that Abdominal Tubectomy clients are satisfied and well informed, a goal of all family planning programmes.
- They are likely to reduce the incidence of regret, thus enhancing the programme's acceptability.
- The signed consent document serves as evidence of the client's request and can provide protection against charges of performing a sterilisation procedure against the client's wishes.

INFORMED CONSENT FOR ABDOMINAL TUBECTOMY: WHAT IT IS

Informed consent is a client's agreement to undergo an Abdominal Tubectomy voluntarily, in full possession and understanding of the relevant facts. Consent is voluntary when the client gives it of her own free will and not because of any special inducement (e.g., a cash payment), force, fraud, deceit, duress, bias or other form of coercion or misrepresentation.

Before a client can make an informed choice regarding Abdominal Tubectomy, a staff member must explain to her and she must understand, the following facts:

- Temporary methods of contraception are available to her and her husband.
- Abdominal Tubectomy under local anaesthesia is a surgical procedure.
- The effect of this procedure is permanent.
- If successful, the operation will prevent her from having any more children.
- Certain risks and benefits are associated with the procedure.
- There is a very small chance of failure (0.1-0.5% in the first year of use).
- She can decide against the procedure without sacrificing the right to other services.

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[1] *Adapted from:* Philippine Family Planning Programme. 1993. *Guidelines: Minilaparotomy with Local Anesthesia.* Family Planning Service, Department of Health: Manila, The Philippines.

INFORMED CONSENT: WHAT IT IS NOT

Documenting informed consent is not a guarantee of voluntarism. A client who signs an informed consent form under duress or without fully understanding the nature of the procedure and its effects has not given informed consent. The fact that the client signs the form does not necessarily mean that she requests the operation willingly or in full knowledge of the facts and options available.

Reconfirm informed consent through counselling procedure. Counselling is the process by which the clinic staff helps to ensure that clients make free, informed and well-considered decisions about their fertility (see **Chapter 2** for more detailed information about counselling). Through counselling, the staff:

- Provides any information the client needs to make a fully informed decision about fertility, including information about Abdominal Tubectomy, other sterilisation or anaesthesia techniques and other contraceptive methods.
- Determines whether the client understands the consequences of and is comfortable with her decision.
- Determines whether the client's choice is voluntary. Counselling is a process - an informed decision is the intended outcome of counselling. Informed consent for Abdominal Tubectomy is one of several informed decisions the client may make.
- Explores the client's feelings about ending fertility and the reasons for adopting Abdominal Tubectomy, in order to reduce the likelihood of regret later.

Documenting informed consent is one component of the Counselling process designed to safeguard the client's right to make a voluntary, informed choice. It also satisfies legal requirements and safeguards the service provider against possible lawsuits. Documentation takes place after counselling, once the client has made a firm decision to undergo surgery.

DOCUMENTATION OF INFORMED CONSENT

In India, the client's signature on an informed consent form is the legal authorisation for the Abdominal Tubectomy to be performed.

The client must always sign or mark the informed consent form (see **Appendix B** for a sample consent form used in India). Since voluntarism is ultimately the responsibility of the operating doctor (see below), the doctor or his authorized representative may be the individual with primary responsibility for counselling the client.

Illiterate clients should mark the informed consent form with a thumb impression. A witness chosen by the client must also sign or mark the form (can be any person not associated with the service centre). Because voluntary sterilisation involves sensitive personal issues related to sexuality, it is preferable that the witness be someone with whom the client is comfortable discussing such issues.

Consent for Abdominal Tubectomy should not be obtained when physical or emotional factors may compromise a client's ability to make a carefully considered decision about contraception. Special care needs to be taken when a woman is pregnant; specifically, consent

should not be obtained when a woman is in labour, when a woman is sedated or when a woman is experiencing stress before, during or after a pregnancy-related event.

SPOUSAL CONSENT

There is no requirement for spousal consent, but because Abdominal Tubectomy is a permanent procedure, a joint decision usually will mean more satisfied clients and fewer complaints to health workers following the surgery. It may be advisable to find out how the spouse feels about adopting the method. If the spouse is not in favour of it, the provider should caution the client about going ahead with the procedure.

DOCUMENTING DENIAL OF ABDOMINAL TUBECTOMY

When a client is evaluated to be unsuitable for Abdominal Tubectomy for either medical or non-medical reasons, the client record should specify the reasons (e.g., the client has a condition that precludes surgery, client is uncertain about her choice, etc). The action taken by the provider should be described (e.g., referral, treatment, etc). These records should be kept at the service facility where the client was judged unsuitable for Abdominal Tubectomy.

RESPONSIBILITY OF THE OPERATING DOCTOR

By the time the client meets the doctor who will perform the surgery (if she was counselled by a counsellor who was not a doctor), she should have:

- Been counselled about her contraceptive options.
- Made an informed decision to undergo Abdominal Tubectomy.
- Signed a consent form.

It is the responsibility of the operating doctor to verify informed consent by talking with the client before the procedure. Before starting any part of the surgery, including administration of sedative drugs, the doctor must assure that the client has made a free, informed and well-considered decision in order to minimise the possibility of regret in the future.

The doctor may use a card printed with guidelines for assessing a client's decision to undergo Abdominal Tubectomy as shown in **Figure 3-1.**

Figure 3-1. Operating Doctor's Guidelines for Assessing Client's Decision for Abdominal Tubectomy

How to Assess a Client's Decision for Abdominal Tubectomy under Local Anaesthesia:
A Doctor's Guide for Final Assessment

Has the client signed an informed consent form? YES NO

	STOP Should not have surgery now	**CAUTION** Needs more counselling •	**GO** Signs of a sound decision •
If the answer is yes, ask the client these questions:			
WHO made the decision for sterilisation ?	Someone else	Client decided, but partner objects	Client and partner (or client, if single)
WHEN did the client decide to have no more children?	Now	Recently	Some time ago
WHY did the client choose Abdominal Tubectomy under local anaesthesia?	Pressure from someone else	Has heard procedure can be reversed	Wants no more children
HOW did the client decide?	While upset or under stress	Without enough consideration or information	After consideration and with full information
WHAT does the client know about: • Abdominal Tubectomy under local anaesthesia	Does not know that: • The method is permanent • The method involves surgery • She will be awake during the procedure • If the surgery is successful, she will not be able to have any more children	Has some understanding about the method	Understands that: • The method is permanent • The method involves surgery • She will be awake during the procedure • If the surgery is successful, she will not be able to have any more children
• Other contraceptive methods	Would prefer other method if available	Has little knowledge of other methods or their availability	Knows of other methods, but prefers permanent contraception

Source: Association for Voluntary Surgical Contraception, 1989.

The doctor should ask the client the questions listed in the left-hand column, rephrasing them as necessary to be sure the client understands.

- If any of the woman's responses fall under the STOP category, the doctor should resolve the problem or cancel surgery and offer the woman an alternative contraceptive method.
- If any of the woman's answers fall into the CAUTION column, she needs further counselling. The doctor or another clinic staff member should correct misunderstandings the client has, provide her with additional information she needs, explore her reason for choosing permanent contraception and determine if she is still interested in having the surgery. If the woman needs more time to think over the decision, the surgery should be postponed.
- If all of the woman's answers fall in the GO column, she probably is an appropriate candidate for permanent contraception, unless the doctor finds other evidence to the contrary.

Using such a guide does **not** substitute for client counselling which should occur much earlier. Furthermore, this guide should not serve as an inflexible screening instrument. The doctor must exercise good judgement when using this or any other guide and interpreting the results. For example, if all of a woman's answers fall into the GO category, but she is unduly nervous and her agitation does not appear to be related to the fear of surgery, the doctor or other staff member should take time to determine what is causing her anxiety. If only one of the woman's responses falls into the CAUTION column, the doctor should take some time to counsel the woman and examine her reason for requesting Abdominal Tubectomy, rather than cancelling surgery solely on the basis of that response. After counselling, the doctor may conclude that the woman is well informed and has made a voluntary, carefully considered choice. The surgery may then proceed as planned.

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FOUR

INDICATIONS AND PRECAUTIONS

BACKGROUND

A **contraindication** is a condition or a disease that makes a drug or treatment **unsafe** or **inadvisable** for a client. In the past, to protect clients from contraceptive complications, lists of contraindications have been developed for each contraceptive method. Although such lists are produced with the best interest of the client in mind, potentially serious, but often rare, complications are over emphasised. As a consequence, clients sometimes are prevented from choosing their preferred contraceptive method rather than guided in their decision-making.

Another disadvantage is that while **contraindications** change over time, the lists tend to become permanent. (The same is true to a certain extent for lists of indications). Moreover, what may be an appropriate contraindication in one country, when applied to another setting with different reproductive health characteristics, may not be appropriate. Finally, in many countries, new information is slow in arriving and the **contraindication** list remains standard for many years.

A partial solution to this problem is to require that every list of indications and contraindications be dated and state clearly the country or setting for which the list was intended. Beyond this, one could consider alternatives to the use of the word contraindication, which carries such dire implications.

In the manual, we have chosen to replace **contraindications** with **precautions.** Making this change, however, does not solve the problem entirely. Therefore, in addition to listing the **indications** and those **conditions** requiring **precautions,** a brief statement is included explaining the **rationale** for categorising the condition as such.

WHO CLASSIFICATION SYSTEM

There is no medical condition that would make a client ineligible for voluntary sterilisation (VS). There are, however, conditions or circumstances which require precaution either for the timing of the procedure or selecting the facility where the procedure should be performed. At the World Health Organization (WHO) meeting in 1995, a separate system was developed for assessing **how, when** and **where** VS procedures should be performed. While some conditions (e.g., severe haemorrhage following delivery) may necessitate delaying the VS procedure, others which are listed in the WHO document do not require any action.

This chapter describes a number of conditions for which there are precautions. As in the WHO guidelines, where delay is recommended, the VS procedure should not be performed until the condition is evaluated and/or corrected. In addition, those conditions that preclude performing the procedure in the outpatient setting are listed. **For these conditions, referral to an appropriate facility where full backup and/or a more experienced doctor is available may be necessary.**

CONTRACEPTIVE CHOICE AND WOMEN'S REPRODUCTIVE HEALTH CARE

When a woman selects a contraceptive method, she and the health care workers should consider the degree to which the client values her future fertility as well as the degree to which she is willing to risk a potential health problem (e.g., use of a progestin-only contraceptive with active liver disease).

Under most circumstances, a woman's risk of dying from pregnancy is many times greater than her risk of dying from Abdominal Tubectomy or any other modern contraceptive method. In fact, the higher a country's maternal mortality rate, the more important it is to offer women the widest choice of effective methods.

As a consequence, protocols that list the indications and precautions for Abdominal Tubectomy should be flexible in order to maximise the client's access to quality family planning services. To achieve this objective, they should be designed to help the service provider consider not only the woman's individual history and living conditions but also the local maternal morbidity and mortality.

INDICATIONS FOR USE

Abdominal Tubectomy is an appropriate method for a woman:

CONDITION	RATIONALE
Who is certain that she wants no more children.	Abdominal Tubectomy should be considered permanent (irreversible). Even where microsurgical facilities for a reversal procedure are available, the client may not be able to afford it, may not be a proper surgical candidate or a reversal attempt may not be successful. Therefore, couples who are considering Abdominal Tubectomy should be certain they do not wish to have any more children.
Whose age or health problems might cause high-risk pregnancy.	The risk of dying from Abdominal Tubectomy is less than that for pregnancy complicated by age or health problems.
Who understands and voluntarily gives informed consent for the procedure	A client who understands and voluntarily gives informed consent for the procedure is less likely to regret the decision and will be more satisfied after the procedure.
Who prefers a method which does not require taking contraceptive action daily or before sexual intercourse.	After the procedure, only a follow-up visit is required. Contraceptive effect is immediate and permanent.

PRECAUTIONS FOR USE

The rationale for the precautions listed in this section is based on the most recent epidemiologic and clinical data regarding medical and surgical criteria for Abdominal Tubectomy. For women with any of the following conditions, health care workers need to assess the appropriateness of Abdominal Tubectomy for **each client,** not only in terms of her special needs but also in relation to the health care conditions in which she lives.

CONDITIONS REQUIRING PRECAUTIONS

CONDITION	PRECAUTION	RATIONALE
Pregnancy/Suspected pregnancy	If pregnancy is suspected, it should be ruled out before performing a VS procedure. If the client is pregnant, counsel regarding options and risks.	Procedure performed early in pregnancy may be confused with failure. Also, use of uterine elevator may cause disruption of pregnancy and possible miscarriage (spontaneous abortion).
Postpartum		
7–42 days (6 weeks)	Delay procedure until after 6 weeks.	Increased risk of complications when not done during first few days postpartum or before uterus has fully returned to pre-pregnancy size.
Preeclampsia (severe) or *Eclampsia*	Delay procedure until recovered (>6 weeks).	Increased risk of anaesthesia-related problems if general anaesthesia used.
Prolonged-rupture membranes (> 24 hours)	Delay procedure until > 6 weeks.	Increased risk of serious post-operative infection.
Intrapartum or *postpartum sepsis*	Delay procedure until infection is treated (>6 weeks).	Increased risk of serious post-operative infection.
Severe haemorrhage (> 500 ml) Resulting in HB < 8 gm%	Delay procedure until anaemia improved (>6 weeks).	Client may have been anaemic before delivery and may be unable to tolerate risk of further blood loss.
Trauma to genital tract (cervical or vaginal tears)	Delay procedure until recovered (> 6 weeks).	Because client may have been anaemic before delivery, she may not be able to tolerate the risk of further blood loss and is at increased risk of infection.
Uterine perforation	Delay procedure only if serious problem is suspected.	May have significant blood loss or other intra-abdominal trauma. If emergency surgery (laparoscopy or laparotomy) is required, tubal occlusion may be performed only if there is no additional risk.

CONDITIONS REQUIRING PRECAUTIONS

CONDITION	PRECAUTION	RATIONALE
Delivery at home, tetanus immunisation status not known.	Provide tetanus toxoid and delay procedure for 6 weeks.	Delivery at home may result in unintentional exposure to tetanus. If client is incubating this organism and develops tetanus post-operatively, the operative procedure may be blamed, affecting the reputation of the voluntary sterilisation programme.
Unexplained vaginal bleeding	Delay procedure only if serious problem is suspected.	If serious problem suspected, evaluate (and treat) before surgery.
Active pelvic infection (PID including purulent cervicitis)	Delay procedure until infection treated and resolved. Provide client with a temporary method.	If procedure is performed in presence of uterine, tubal or peritoneal infection, abscess formation or increased severity of infection may result.
Acute systemic infection (e.g., cold, flu, gastroenteritis, viral hepatitis)	Delay procedure until infection treated and resolved. Provide client with a temporary method.	Although tubal occlusion is a minor surgical procedure, it should not be performed when the client is sick.
Anaemia (Hb <8 g/dl)	Delay procedure until anaemia improved.	Client may be unable to tolerate stress of surgery or further blood loss.
Abdominal skin infection	Delay procedure until treated.	Increased risk of post-operative infection.
Cancer of the genital tract (cervix, endometrium or ovaries)	Do not perform.	In general, treatment for these cancers results in sterility. Refer client for treatment.
Deep veins thrombosis/pulmonary embolism (current)	Delay procedure until fully recovered.	Increased risk of recurrence or embolism.
Tuberculosis	Delay procedure until appropriate Anti-TB treatment received.	Procedure could cause flare-up or spread of disease. The coughing associated with tuberculosis may cause herniation at the site of the incision.
Asthma (acute)	Delay procedure until acute asthma attack resolved.	Client with compromised respiratory functions may not tolerate the sedation and/or a Trendelenburg position. In addition, higher expiratory pressure will cause abdominal straining and complicate procedure.
Post-abortion		
Puerperal sepsis or fever (> 38°C)	Delay procedure until infection resolved.	Determine cause and treat before performing VS.
Severe haemorrhage (> 500 ml)	Delay procedure until anaemia improved.	Client may have been anaemic before procedure and may not be able to tolerate further blood loss.

CONDITIONS REQUIRING PRECAUTIONS

CONDITION	PRECAUTION	RATIONALE
Trauma to genital tract (cervical or vaginal)	Delay procedure until anaemia improved and injury healed.	Because client may have been anaemic before abortion, she may not be able to tolerate further blood loss and is at increased risk of infection.
Uterine perforation	Delay procedure until recovered.	May have significant blood loss or intra-abdominal trauma. If emergency surgery (laparoscopy or laparotomy) is required, tubal occlusion may be performed only if there is no additional risk.
Acute haematometra (postabortion syndrome)	Delay procedure until recovered.	Evacuate uterus (vacuum aspiration) and assess anaemia before performing tubal occlusion.

Women with the following conditions may require additional counselling or special surgical and follow-up management:

PROBLEMS REQUIRING ACTION

PROBLEM	ACTION	RATIONALE
Client has: • Diabetes • Symptomatic heart disease • High BP (>160/100) or with vascular disease • Coagulation (clotting) disorders (rare) • Is overweight (over 75 kg/165 lb if not normal Ht/Wt ratio) • Abdominal or umbilical hernia • Multiple lower abdominal incisions/scars	Should only be performed by experienced clinician in a facility with full backup. **Note: Diabetes should be under control before surgery.**	Clients with significant medical problems may need special surgical and follow-up management (e.g., general anaesthesia) for voluntary sterilisation. Only those clients who meet the acceptable criteria should have their surgery in ambulatory facilities. Attempting to perform the procedure in women who do not meet these criteria (e.g., overweight women or those with extensive pelvic adhesions) invariably necessitates: • more sedation/analgesia for client comfort, • larger incision, • longer operating time, and • prolonged recovery. As a consequence, there is an increased risk of complications, especially infections, in this high-risk group.
Desire for more children	Further assess concerns and, if appropriate, help client choose another method.	Tubal occlusion is permanent. Help couples considering more children choose another method.
Excessive interest in reversal	Further assess concerns and, if appropriate, help client choose another method.	Tubal occlusion is permanent. Help couples who might be interested in more children choose another method.

PROBLEMS REQUIRING ACTION

PROBLEM	ACTION	RATIONALE
Disagrees with or does not want to sign informed consent form	Determine if concerns represent is understanding about method (e.g., rumour, myth). If so, provide additional counselling. If client still does not wish to sign, help her choose another method.	Clients often have misconceptions about a procedure, even after counselling. Informed consent must be obtained before performing surgical procedures.
Pressure from someone else	Further assess concerns and, if appropriate, help client choose another method.	Voluntary sterilisation regret is higher when the decision was made as a result of undue pressure.
Depression	Further assess concerns and, if appropriate, help client choose another method.	Tubal occlusion is permanent. If emotional instability is present, the decision should be postponed.
Marital problems	Further assess concerns and, if appropriate, help client choose another method.	Because tubal occlusion is permanent, the decision to have the procedure should be delayed until marital problems are resolved.
Client states **religious beliefs would be violated**	Help client choose another method.	The likelihood of regret is reduced and satisfaction is increased if the client is emotionally comfortable with the method.

PROBLEMS REQUIRING ACTION (POSTPARTUM)

PROBLEM	ACTION	RATIONALE
Umbilical hernia	Defer procedure for interval.	Incision is usually made in area of hernia.
Intrapartum or postpartum fever	If client is afebrile for 24 hours prior to procedure, surgery may be performed.	Surgery could spread infection and lead to septicaemia.
Antepartum or postpartum haemorrhage	If haemoglobin and cardiovascular status are stable, procedure may be performed.	Low haemoglobin (< 8 g/dl) may increase risk; premedication relaxes the uterus, increases bleeding.

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FIVE

CLIENT ASSESSMENT

BACKGROUND

Abdominal Tubectomy under local anaesthesia is intended for use on healthy women and can be performed in surgical facilities with limited resources and equipment. This surgical approach has proven to be an extremely safe, low-risk procedure.

Selecting clients who are acceptable for having Abdominal Tubectomy performed in an outpatient setting is a key factor in minimizing the risk of complications. Guidelines for selecting acceptable clients are presented in **Table 5-1**.

Table 5-1. Sample Guidelines for Screening Clients for Abdominal Tubectomy in Ambulatory Health Care Facilities

SELECTION CRITERIA		
CATEGORY	**Acceptable**	**Not Acceptable**
General health (assessed by history and limited physical examination)	Negative history and no current symptomatic heart, lung or kidney disease	Uncontrolled diabetes or history of bleeding disorder; current symptomatic heart, lung or kidney disease
Emotional state	Calm	Unresolved fear and anxiety
Blood pressure	< 160/100 mm/Hg	> 160/100 mm/Hg
Height/weight (H/W)	Normal H/W ratio Maximum weight: 75 kg (165 lbs) Minimum weight: 35 kg (77 lbs)	> 75 kg < 35 kg
Previous abdominal/pelvic surgery	C-sections only with mobile abdominal scar and normal pelvic examination	Other abdominal surgery, fixed scar or abnormal pelvic examination
Previous pelvic disease (PID, ectopic pregnancy) or ruptured appendix	Negative history and normal abdominal and pelvic examination	Abnormal abdominal/pelvic examination
Anaemia	Hb > 8 g/dl	Hb < 8 g/dl

Only those clients who meet the **acceptable** criteria should have their surgery in outpatient or mobile outreach facilities. Attempting to perform Abdominal Tubectomy in women who do not meet these criteria (e.g., obese women or those with extensive pelvic adhesions) invariably requires:

- Longer operating time.
- Increased risk of complications.
- Prolonged recovery.

Women who have conditions that make these operations difficult or increase the risks should have their surgery in a well-equipped facility, where the availability of general anaesthesia and other special requirements are available.

MEDICAL ASSESSMENT

Medical assessment of potential Abdominal Tubectomy clients should include demographic information, a brief medical history, physical examination and a complete pelvic examination. When evaluating women in a rural or mobile outreach service, the pre-operative assessment must be rigorous. At these sites, it is essential to identify clients who have conditions that may increase the risks associated with surgery, as described above.

A doctor must conduct or supervise all pre-operative medical evaluation. A trained person who is not a doctor may carry out preliminary screening (in particular, the medical history) using a checklist prepared by a doctor. The paramedical must be able to detect abnormalities or conditions requiring precautions and report them to a doctor for evaluation and assessment. **The final decision to offer Abdominal Tubectomy to the client is the responsibility of the operating doctor.**

DEMOGRAPHIC INFORMATION

This basic identifying information should include the client's name, address, age, marital status, religion, education, husband's name and occupation.

MEDICAL HISTORY

Specific information which should be obtained as part of the medical history includes:

- Number of pregnancies, living children and age of youngest child and immunisation status.
- Date of last menstrual period (LMP).
- Current/last contraceptive method used.
- PID or ectopic pregnancies.
- Past severe illnesses and other medical conditions, including symptomatic or chronic respiratory problems, heart or kidney disease, diabetes, anaemia, bleeding disorders (haemophilia), active tuberculosis, sexually transmitted infections (especially RTIs), psychiatric conditions.
- Previous abdominal or pelvic surgery.

- Allergies (especially to local anaesthetics and pain medications).
- Current medications (e.g., those taken chronically for blood pressure control or diabetes, etc.).
- High blood pressure.
- Convulsions.
- Abnormal vaginal discharge.
- Urinary tract infections.

PHYSICAL EXAMINATION

General examination:

- General condition and nutritional status:

If severe anaemia (Hb < 8 g/dl) is suspected and haemoglobin (Hb) is not available, check for:

  - pallor of the skin or eyes (conjunctiva)
  - rapid pulse (> 100)
  - heart murmurs (auscultation)

  - Weight
  - Pulse and blood pressure
  - Auscultation of heart and lungs

Abdominal examination. Check for:

  - suprapubic or pelvic tenderness
  - masses or gross abnormalities
  - surgical scars

Pelvic examination (make sure the client has voided before performing the exam):

- External genitalia
- Inspect external genitalia for abnormalities and lesions (enlarged groin nodes)
- Speculum examination
  - check for abnormal vaginal discharge
  - check cervix for purulent cervicitis
  - if indicated by history and physical findings and if microscope is available, obtain specimens of vaginal and cervical discharges for diagnostic studies
- Bimanual
  - check for cervical motion tenderness
  - determine size, shape and position and mobility of uterus
  - check for enlargement or tenderness of the adnexa, active PID, etc.
  - check for pregnancy signs
  - check for uterine abnormalities

- Rectovaginal (perform only if findings on bimanual examination are suspicious, for example, if mass in cul de sac is suspected)
  - check for pouch of Douglas mass or tenderness

Pregnancy testing is usually not necessary except in cases where it is difficult to confirm pregnancy by pelvic exam (i.e., 6 weeks or less from the LMP) or the results of the pelvic examination are equivocal (e.g., the size and consistency of the uterus are difficult to determine because the client is overweight or has a retroverted uterus). In these situations, a highly sensitive pregnancy test (positive within 10 days after conception) may be helpful, if readily available and not expensive. If **pregnancy testing** is not available, counsel the client to use a barrier method until her menses occur or the possibility of pregnancy is confirmed.

How To Be Reasonably Sure the Client Is Not Pregnant

You can be reasonably sure the client is not pregnant if she has no signs or symptoms of pregnancy (e.g., breast tenderness or nausea) and:

- Has not had intercourse since her last menses; or
- Has been correctly and consistently using a reliable contraceptive method; or
- Is within the first 7 days after the start of her menses (days 1 to 7); or
- Is within 4 weeks postpartum (for women who are not breastfeeding); or
- Is within the first 7 days post-abortion; or
- Is fully breastfeeding, is less than 6 months postpartum and has had no menstrual bleeding (see below).

Source: Technical Guidance Working Group, 1994.

RELYING ON THE LACTATIONAL AMENORRHOEA METHOD (LAM)

The lactational amenorrhoea method (LAM) is highly effective (98% protection during the first 6 months postpartum) (Labbok, Cooney and Coly, 1994). A service provider can be reasonably sure that a fully or nearly fully breastfeeding woman is not pregnant if she is still within the first 6 months postpartum and has remained amenorrhoeic. When a woman is more than 6 months postpartum, you still can be **reasonably** sure that she is not pregnant if she has kept her breastfeeding frequency high, she is still amenorrhoeic and has no clinical signs or symptoms of pregnancy (Labbok, Cooney and Coly, 1994; Technical Guidance Working Group, 1994).

LABORATORY INVESTIGATIONS

Extensive, routine laboratory investigations are unnecessary as long as the staff performs a careful clinical assessment of the client. For procedures using local anaesthesia, haemoglobin and urine examination is necessary. Other appropriate investigations may be conducted as necessary (e.g., a pregnancy test).

SCREENING FOR CONDITIONS THAT MIGHT INCREASE RISK

If the medical examination reveals conditions that are likely to increase the risks associated with surgery, the doctor may need to consider a more advanced facility or consult with another practitioner before deciding to operate. If the clinic staff judges the client unsuitable for surgery for medical reasons, she should be referred for a complete evaluation of the condition identified in the examination. She should also be offered alternative contraceptive methods. If staff judges a client unsuitable for the type of tubal occlusion service available at that clinic, she should be referred to a facility capable of providing appropriate services.

Medically high-risk clients, after being informed of the risks and benefits of the procedure, should receive services from providers with the highest level of medical expertise and at the most fully equipped medical facility available.

FINAL MEDICAL ASSESSMENT

After reviewing the client's history, the physical findings and the client's suitability for Abdominal Tubectomy, the doctor who will perform the operation should conduct a final medical assessment immediately before surgery.

The pelvic examination done for a pre-operative assessment does not remove the need for the doctor to conduct a pelvic examination on the day of surgery to ensure the absence of other gynaecologic disorders, including infection and to determine the position, flexion, mobility, size, shape and condition of the uterus.

This final evaluation should take place at the facility where the procedure is to be performed.

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SIX

INFECTION PREVENTION[1]

BACKGROUND

Thousands of Abdominal Tubectomy procedures are performed safely throughout the world each year without serious complications due to infection. Occasionally, however, life-threatening infections, including tetanus, gangrene and abdominal sepsis are associated with this surgical procedure. Other more common, but less serious, infectious complications include minor surgical wound infections. In order to prevent problems caused by infection, aseptic technique, including good surgical technique, must be followed during each procedure.

Another concern is the increasing danger of transmission of Hepatitis B or HIV to clients, health care providers or clinic staff.[2] **Using disposable items to reduce this risk often is unnecessary.** Most of these disposables are expensive, difficult to dispose of safely and create environmental pollution problems. Furthermore, adequate supplies of disposable items, such as surgical gloves, are often not available in many countries.

To reduce the risk of infection as well as allow safe reuse of instruments and other items, contaminated waste must be properly disposed of and instruments and other items should be decontaminated, cleaned and sterilised or high-level disinfected after completing each procedure, because tetanus and gangrene are caused by spore-forming bacteria. Equipment should be **sterilised** whenever possible. Sterilisation is the only method that reliably destroys bacterial endospores. When sterilisation facilities are not available, **high-level disinfection** (HLD) is the only acceptable alternative. (See **Appendix C** for information on processing surgical instruments and other items). The emphasis in this chapter is on the use of infection prevention practices that are practical and feasible in any country and setting.

Remember: Regardless of whether sterilisation or high-level disinfection is used, thorough cleaning to remove soil and organic material is the most effective way to reduce the risk of tetanus and gangrene from instruments and other items.

DEFINITIONS

Micro-organisms 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), which are the most difficult to kill.

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[1] *Adopted from*: Tietjen L., W. Cronin and N. McIntosh. 1992. *Infection Prevention for Family Planning Service Programs: A Problem-Solving Reference Manual*. Essential Medical Information Systems, Inc.: Durant, Oklahoma.

[2] Throughout this manual, when Hepatitis B virus (HBV) is mentioned, Hepatitis C virus (HCV) and Delta Hepatitis virus (HDV) also are referred to because their occurrence is worldwide and their modes of transmission/prevention are similar.

Infection prevention often relies on placing barriers between the host and microorganisms. **Protective barriers** are physical, mechanical or chemical processes which help prevent the spread of infectious microorganisms from client to client, clinic staff to client and client to staff.

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

- **Asepsis** and **aseptic technique** are general terms used 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).
- **Antisepsis** is the prevention of infection by killing or inhibiting the growth of 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 **before** cleaning (i.e., reduces, but does not eliminate, the number of microorganisms on instruments and other items). Objects to be decontaminated include large surfaces (e.g., pelvic examination or operating tables) and surgical instruments, gloves and other items contaminated with blood or body fluids.
- **Cleaning** is the process that physically removes all visible blood, body fluids or any other foreign material such as dust or dirt from skin or inanimate objects.
- **Disinfection** is the process that eliminates most, but not all, disease-causing microorganisms from inanimate objects.
- **High-level disinfection** (HLD) by boiling, steaming or the use of chemicals, eliminates **all** microorganisms except **some** bacterial endospores from inanimate objects.
- **Sterilisation** is the process that eliminates **all** microorganisms (bacteria, viruses, fungi and parasites) **including** bacterial endospores from inanimate objects.

WHICH PROCESS TO USE

As summarised in **Figure 6-1, decontamination** is the first step in processing **soiled** (contaminated) surgical instruments, gloves and other items. For example, soaking contaminated items for 10 minutes in 0.5% chlorine solution rapidly kills HBV and HIV, thereby making instruments and other items safer to be handled during cleaning (American Association of Operating Room Nurses, 1990). Larger surfaces such as examination and operating tables, laboratory bench tops and other equipment which may have come in contact with blood or other body fluids also should be decontaminated. Wiping them down with a suitable disinfectant (e.g., 0.5% chlorine) is a practical, inexpensive way to decontaminate these items.

After instruments and other items have been decontaminated, they need to be cleaned and then finally processed by either sterilisation or HLD (Tietjen and McIntosh, 1989). As outlined in **Table 6-1**, which method is used for final processing (i.e., sterilisation or HLD) depends on whether the instruments will touch only intact (unbroken) skin, intact mucous membranes or broken skin or tissue beneath the skin which normally is sterile (Spaulding et al, 1968).

Table 6-1. Final Processing (High-Level Disinfection and Sterilisation) for Surgical Instruments, Gloves and Other Items

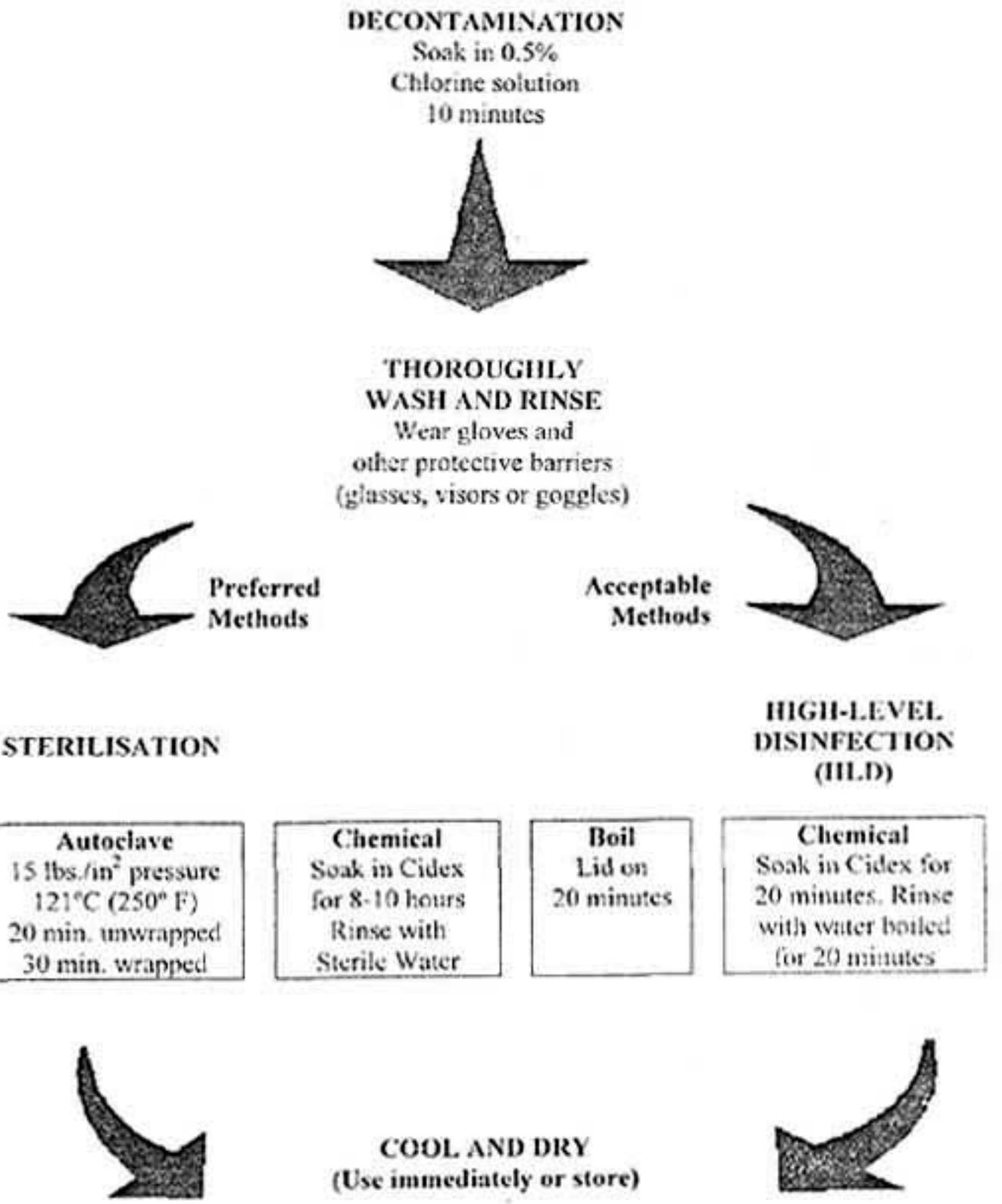
Tissue	Final Processing	Examples
Intact mucous membranes or broken skin	**High-level disinfection** (HLD) destroys all microorganisms except some endospores.[a] HLD should be preceded by decontamination and cleaning.	Uterine sounds and vaginal specula.
Tissue beneath the skin which normally is sterile	**Sterilisation** destroys all microorganisms, including endospores. Sterilisation should be preceded by decontamination and cleaning.[b]	Surgical instruments such as needles and syringes, scalpels and trocars for insertion/ removal of implants and surgical gloves.

[a] Bacterial endospores are forms of bacteria which are very difficult to kill because of their coating; types of bacteria which can produce endospores include the bacteria causing tetanus (*Clostridia tetani*) and gangrene (*Clostridia sp.*). Bacterial endospores can be killed reliably **only** by sterilisation.

[b] If sterilisation is not available, HLD is the **only acceptable** alternative (see **Figure 6-1**).

Adapted from: Spaulding et al, 1968.

Figure 6-1. Processing Surgical Instruments, Gloves and Other Items



WHEN IS STERILISATION ABSOLUTELY ESSENTIAL? WHEN IS HLD AN ACCEPTABLE ALTERNATIVE?

Most authorities recommend that the final step in processing instruments and other items used for surgical contraceptive procedures, such as voluntary sterilisation, should be sterilisation. While sterilisation, when correctly performed, clearly is the safest and most effective method for processing instruments, if it is neither available nor suitable (e.g., for laparoscopes), then HLD is the **only acceptable** alternative (see **Table 6-1**).

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

PROTECTIVE BARRIERS

Placing a physical, mechanical or chemical **"barrier"** between micro-organisms and an individual, whether a client or health worker, is an effective means of preventing the spread of disease (i.e., the barrier serves to break the disease transmission cycle). The following actions create protective barriers for infection prevention:

- Handwashing;
- Wearing gloves (both hands), either for surgery or when handling contaminated waste materials or soiled instruments;
- Using antiseptic solutions for preparing the skin, cervix and vagina prior to surgery;
- Using drapes during surgical procedures;
- Wearing appropriate attire (e.g., goggles, mask or apron) when contact with blood or body fluids is possible (e.g., cleaning instruments and other items); and
- Decontaminating, cleaning and either sterilising or high-level disinfecting surgical instruments, gloves and other items after use.

HANDWASHING, SURGICAL SCRUB AND GLOVES

Thorough handwashing coupled with the use of protective gloves, when performing Abdominal Tubectomy or handling contaminated waste materials, are key components in minimising the spread of disease and maintaining an infection-free environment (Garner and Favero, 1986). In addition, understanding when sterile or high-level disinfected gloves are required and, equally important, **when they are not**, can reduce costs while maintaining safety for both clients and staff.

Handwashing may be the single most important procedure in preventing infection. The vigorous rubbing together of all surfaces of lathered hands mechanically removes and often inactivates most organisms. To encourage handwashing, programme managers should make every effort to provide soap and a continuous supply of fresh water, either from a tap or bucket.

For most activities, a brief handwashing with plain soap (an antiseptic is not necessary) for about 10–15 seconds followed by rinsing in a stream of water is sufficient.

Handwashing is indicated **before**:

- Examining (direct contact with) a client, and
- Putting on **sterile** or **high-level disinfected** surgical gloves.

Handwashing is **indicated after**:

- Any situation in which hands may be contaminated, such as:
- Handling soiled instruments and other items, or
- Touching mucous membranes, blood or other body fluids (secretions or excretions), and
- Removing gloves.

Remember: Wash hands after removing gloves because they may have invisible holes or tears (Bagg, Jenkins and Barker, 1990; Martin et al ,1988).

Micro-organisms grow and multiply in moisture and in standing water. Therefore:

- If bar soap is used, provide small bars and soap racks which drain.
- Avoid dipping hands repeatedly into basins containing standing water. Even with the addition of an antiseptic agent, such as Dettol or Savlon, microorganisms can survive and multiply in these solutions.
- Choose from several options when running water is not 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 alcoholic handrub which does not require water.

Note: A non-irritating alcohol solution can be made by adding either glycerine, propylene glycol or Sorbitol to the alcohol (2 ml in 100 ml 60-90% alcohol solution) (Garner and Favero, 1986). Use 3–5 ml for each application and rub the solution over the hands for about 2 minutes, using a total of 6–10 ml per scrub (Larson et al, 1990; Rotter, Koller and Wewalka, 1980).

- Dry hands with a clean towel or air dry; shared towels quickly become contaminated. (carrying one's own small towel or handkerchief is a good way to avoid using dirty towels).
- Collect used water in a basin and discard in a latrine if a drain is not available.

SURGICAL HANDSCRUB

The surgical team (doctor and O.T. nurse/technician) should perform a **3–5 minute surgical handscrub** prior to performing Abdominal Tubectomy using antiseptic soap and water.

The surgical handscrub is performed before gowning (if used) and putting on sterile or high-level disinfected gloves. Ideally, the operating doctor and attendant should scrub thoroughly between each procedure. In high-volume settings, this may not be feasible because the skin cannot tolerate the irritation caused by frequent scrubbings. **In such settings, surgical staff should do a 3-minute scrub every hour or after every four cases (whichever comes first), to minimise recolonisation of the skin by microorganisms.** They should also scrub if they leave the operation theatre for any reason and after every case where glove(s) are torn. In between these procedures alcohol handscrub should be done.

WHEN TO WEAR GLOVES

Gloves should be worn by all staff prior to contact with blood and body fluids from any client. **A separate pair of gloves must be used for each client to avoid cross contamination.** Using **disposable gloves** is preferable; however, surgical gloves can be decontaminated, washed, dried and either sterilised by autoclaving or high-level disinfected by boiling before reuse.

WHICH GLOVES TO USE

- **Clinicians: Sterile** surgical gloves should be worn when performing the Abdominal Tubectomy. **High-level disinfected** gloves may be worn when performing a Pelvic Examination. When sterilisation equipment is not available, surgical gloves can be **high-level disinfected** by boiling.
- **Clinic Staff: Clean utility gloves** should be worn when processing instruments, equipment and linen; for handling contaminated wastes and when cleaning contaminated surfaces.

Do not use gloves which are cracked, peeling or have detectable holes or tears.

Instructions are provided in **Appendix F** for how to process surgical gloves, by sterilisation and HLD, and store them safely.

ANTISEPSIS

Infection following surgical procedures, such as Abdominal Tubectomy, may be caused by micro-organisms from the skin of the client or from the hands of the health care worker (Larson et al, 1990). Washing hands before and after each case and cleaning the client's skin, cervix and vagina with antiseptic solution help prevent infection at the operative site.

SELECTION OF ANTISEPTICS

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 objects such as instruments or surgical gloves.

Many chemicals qualify as safe antiseptics. The following antiseptics are commonly available in UP:

- Alcohols (60–90% ethyl, isopropyl or 'methylated spirit')
- Chlorhexidine gluconate (4%) (e.g., Hibiclens, Hibiscrub, Hibitane)
- Chlorhexidine gluconate and cetrimide, various concentrations (e.g., Savlon)
- Iodine (1–3%); aqueous iodine and alcohol-containing (tincture of iodine) products
- Iodophors, various concentrations (e.g., Betadine)
- Parachlorometaxylenol (PCMX or chloroxylenol), various concentrations (e.g., Dettol).

PROCESSING INSTRUMENTS, GLOVES AND OTHER ITEMS

In working to create an infection-free environment, it is important that the rationale for each of the recommended infection prevention processes (and their limitations) be clearly understood by clinic staff at all levels from service providers to cleaning and maintenance staff.

For Abdominal Tubectomy, the infection prevention processes which should be used to reduce disease transmission from contaminated instruments, gloves and other items are:

- Decontamination,
- Cleaning and rinsing,
- Sterilisation , or
- High-level disinfection (HLD) and
- Waste disposal

The sequence and details for performing each of these processes are summarised in **Tables 6-2** and **6-3**.

After completing surgery and while still wearing gloves, dispose of contaminated objects (gauze, cotton and other waste items) in a leakproof container or plastic bag. **Following this**, surgical instruments, reusable needles and syringes and gloves which were in contact with blood or body fluids should be **decontaminated** by soaking for 10 minutes in a disinfectant (0.5% chlorine solution). The surface of procedure tables, instrument stands and lamps should be decontaminated before reuse by wiping with a cloth soaked in a 0.5% chlorine solution. **Next**, instruments and reusable items such as surgical gloves should be thoroughly **cleaned** with liquid soap or detergent and water and **completely** rinsed before further treatment. **Finally**, instruments, gloves and surgical drapes should be **sterilised**. If sterilisation is not possible, **HLD** is the only acceptable alternative. (See **Appendix C** for details on processing surgical instruments and other items and **Appendix H** for needles and syringes).

Table 6-2. Infection Prevention Guidelines for Abdominal Tubectomy

WASTE DISPOSAL AND DECONTAMINATION

STEP 1: After completing the Abdominal Tubectomy and while still wearing gloves, dispose of contaminated objects (gauze, cotton and other waste items) in a properly marked leakproof container (with a tight-fitting lid) or plastic bag.

STEP 2: Fully immerse all metal instruments in a plastic container filled with a 0.5% chlorine solution for 10 minutes before allowing staff and cleaning personnel to handle or clean them.

STEP 3: If using disposable needles and syringes, place in puncture-proof container. If reprocessing needle and syringe, fill it with 0.5% chlorine solution and decontaminate by soaking for 10 minutes in 0.5% chlorine solution.

STEP 4: All surfaces (such as the O.T. table, instrument stands and O.T. lamps) that could have been contaminated by blood and mucus also should be decontaminated by wiping down with chlorine solution.

STEP 5: Briefly immerse both gloved hands in the bucket containing the chlorine solution and then carefully remove by turning them inside out. If disposing of gloves, place in the leakproof container. If the gloves are reusable, deposit the gloves in the 0.5% chlorine solution and soak for 10 minutes.

CLEANING AND RINSING

STEP 6: After decontamination, thoroughly clean instruments with water, detergent and a soft tooth brush, taking care to clean all teeth, joints and surfaces. Rinse well after cleaning to remove all soap or detergent (some detergent can render chemical disinfectants inert). Dry instruments before further processing. Surgical drapes should be washed with liquid soap or detergent and water and air or machine dried.

STEP 7: Wash syringe and needle in soapy water and rinse (thrice) with clean water. (If processing needle, be sure to clean hub area of needle. Put syringe and needle back together and rinse by flushing (thrice) with clean water. Detach needle from syringe and examine for damage. Dispose of damaged needles in puncture-proof container).

Table 6-2. Infection Prevention Guidelines for Abdominal Tubectomy *(continued)*

STERILISATION

Instruments, surgical gloves, syringes (and needles if reused) and surgical drapes should be sterilised by autoclaving.

Steam sterilisation : 121°C (250°F) at 106 kPa (15 lbs/in^2) pressure for 20 minutes for unwrapped items; 30 minutes for wrapped items. Allow all items to dry thoroughly before removing.

Storage: Unwrapped instruments must be used immediately or stored in dry sterile containers (1 week only). Wrapped instruments, gloves and drapes can be stored for up to 1 week if the package remains dry and intact.

HIGH-LEVEL DISINFECTION

High-level disinfection by boiling, or the use of chemicals is recommended if sterilisation is not possible. Surgical (metal) instruments, surgical gloves and syringes (and needles if reused) should be boiled for 20 minutes and allowed to dry. Alternatively, the surgical instruments can be soaked for 20 minutes in a glutaraldehyde, thoroughly rinsed with water boiled for 20 minutes and air dried. Use immediately or store for up to 1 week in a clean, dry high-level disinfected container with a tight-fitting lid.

Table 6-3. Steps in Processing Surgical Instruments, Gloves and Other Items

Process	**Decontamination** is the first step in handling used items; reduces risk of HBV or HIV/AIDS.	**Cleaning** removes all visible blood, body fluids and dirt.	**Sterilisation** destroys all microorganisms, including endospores.	***High-Level disinfection*** destroys all viruses, bacteria, parasites, fungi and **some** endospores.
INSTRUMENTS /ITEMS	**DECONTAMINATION**	**CLEANING**	**STERILISATION** [a]	**HIGH-LEVEL DISINFECTION**
Procedure table top, or other large surface areas	Wipe off with 0.5% chlorine solution.	Wash with liquid soap or detergent and water if organic material remains after decontamination.	Not necessary	Not necessary
Surgical drapes	Not necessary (Laundry staff should wear protective gowns, gloves and eyewear when handling soiled linens.)	Wash with liquid soap or detergent and water. Rinse with clean water; air or machine dry.	Autoclave at 121°C (250°F) and 106 kPa (15 lb/in^2) for 30 minutes.	Not practical
Surgical gloves	Soak in 0.5% chlorine solution for 10 minutes prior to cleaning. Rinse or wash immediately.[b]	Wash with liquid soap or detergent and water. Rinse with clean water and check for holes. If they are to be sterilised, dry inside and out (air or towel dry) and package (see **Appendix F**).	**Preferable:** Autoclave at 121°C (250°F) and 106 kPa (15 lb/in^2) for 30 minutes. *Do not use for 24 to 48 hours.*	**Acceptable:** Boil in water for 20 minutes. (After cooling, gloves should be worn 'wet' as drying and storing without contaminating them is difficult.)
Metal instruments for pelvic exam (e.g., specula, forceps and uterine elevator)	Soak in 0.5% chlorine solution for 10 minutes prior to cleaning. Rinse or wash immediately.	Using a toothbrush, wash with detergent and water. Rinse with clean water. If to be sterilised, air or towel dry.	• Autoclave at 121°C (250°F) and 106 kPa (15 lbs/in^2) for 20 minutes (30 minutes if wrapped).	• **Boil** or chemically HLD for 20 minutes (see above). • **Boil** for 20 minutes and allow to dry in a high-level disinfected container.
Metal instruments for voluntary sterilisation	Soak in 0.5% chlorine solution for 10 minutes prior to cleaning. Rinse or wash immediately.	Using a toothbrush, wash with liquid soap or detergent and water. Rinse with clean water. If to be sterilised, air or towel dry.	**Preferable:** • Autoclave at 121°C (250°F) and 106 kPa (15 lbs/in^2) for 20 minutes (30 minutes if wrapped).	**Acceptable:** • **Boil** or chemically HLD for 20 minutes (see above). • **Boil** for 20 minutes and allow to dry in a high-level disinfected container.

Table 6-3. Steps in Processing Surgical Instruments, Gloves and Other Items *(continued)*

INSTRUMENTS/ ITEMS	DECONTAMINATION	CLEANING	STERILISATION [a]	HIGH-LEVEL DISINFECTION
Hypodermic needles and syringes	Fills assembled needle and syringe with 0.5% chlorine solution. Flush (thrice) and soak for 10 minutes prior to cleaning. Rinse by flushing (thrice) with clean water.	Disassemble, and wash with liquid soap or detergent, and water. Rinse with clean water, air or towel dry syringes (only air dry needles).	**Preferable**: Autoclave at 121°C (250°F) and 106 kPa (15 lb/in^2) for 20 minutes if unwrapped, 30 minutes if wrapped.	**Acceptable**: Boil as for surgical gloves. (Chemical HLD is not recommended because chemical residues may remain even after repeated rinsing with boiled water. These residues may interfere with the action of drugs being injected.)
Storage containers for instruments	Soak in 0.5% chlorine solution for 10 minutes prior to cleaning. Rinse or wash immediately.	Wash with liquid soap or detergent and water. Rinse with clean water, air or towel dry.	Autoclave at 121°C (250°F) and 106 kPa (15 lb/in^2) for 20 minutes if unwrapped, 30 minutes if wrapped. Sterilise when empty or contaminated, or weekly.	Boil container and lid (see Appendix C). If container is too large: Fill container with 0.5% chlorine solution and soak for 20 minutes [b]. Rinse with water which has been boiled for 20 minutes and air dry before use. High-level disinfect when empty or contaminated, or weekly.

[a] Avoid prolonged exposure (> 20 minutes) to chlorine solution to minimize discoloration and corrosion of instruments and deterioration of rubber or cloth products.

Adapted from: Perkins, 1983.

OPERATION THEATRE

The OT should be an enclosed area with doors that can be locked and should be located away from heavily used areas of the clinic or hospital. The O.T. should:

- Have adequate lighting.
- Have tile or concrete floors to facilitate cleaning.
- Be kept free of dust and insects.

There should be adequate handwashing facilities, including a supply of clean, running water (i.e., clear, not cloudy with sediment) nearby and a clothes changing room for staff. This area should be positioned so that staff can enter directly into the O.T. area without passing through high-traffic areas (e.g., client waiting area) or high-risk (contaminated) areas such as hospital wards or treatment rooms. Suitable containers, with tight-fitting lids or plastic bags for disposal of waste items also should be available.

TRAFFIC FLOW

The number of microorganisms in a designated area tends to be related to the number of people present and their activity. To help reduce the level of microbial contamination in the O.T.:

- Keep the number of people and movement to a minimum during surgery.
- Keep doors closed to discourage entrance of unauthorised persons and to reduce movement and air flow.
- Separate clean and soiled items.
- Finally, clients should enter the O.T. and go to the O.T. table without crossing through areas where sterile or high-level disinfected instruments are set up and stored.

PREPARATION OF CLIENTS

Although skin cannot be sterilised, pre-operative washing of the surgical site and antiseptic preparation minimises the number of microorganisms on the client's skin. Both are important in reducing the risk of surgical wound infection following Abdominal Tubectomy.

- Clients selected for surgery should bathe prior to surgery (if this is not possible, staff should thoroughly clean the operative site with soap and water before entering the O.T.).
- Pubic and abdominal hair **should not be shaved** (if the hair must be cut, trim it close to the skin surface immediately before the procedure).
- Liberally apply a locally available antiseptic, such as an iodophor (Betadine), to the operative site.
- Allow the antiseptic enough time to be effective before beginning the procedure. For example, when iodophors are used, allow 1–2 minutes before proceeding.

For a listing of antiseptic solutions, their use and relative advantages and disadvantages, **Appendix E.**

SURGICAL ATTIRE FOR CLIENTS AND OPERATION THEATRE STAFF

The O.T. is designated as a clean area; therefore, clients and staff (who are to scrub) should be attired appropriately:

- Clients should change into a clean gown before the procedure (a clean cloth wrap can be used if gowns are not available).
- O.T. staff (including cleaning staff) should change into clean scrub suits or gowns, caps and masks **prior to entering the O.T.**
- Masks should **fully cover the nose, lower face, jaw and facial hair** and should be replaced when damp.
- Caps should cover all hair.
- Street shoes should be covered or changed to shoes or boots that are worn only in the O.T.

USE OF MULTI-USE VIALS

The following guidelines are important to follow when using multi-use vials of lidocaine:

- After using a needle for the client's injection, never introduce it again into the vial.
- After using a syringe for an injection, never use it again to withdraw more solution from the vial. Injecting air into the vial with a used syringe, in order to facilitate withdrawal of the liquid, causes the contents of the vial to become contaminated.
- Do not leave a needle in the vial between withdrawals of solution because it will contaminate the contents.
- Ideally, there should be enough sterile syringes and needles so that each is used only once.

SURGICAL TECHNIQUE

Good surgical technique that minimises tissue trauma and adequately controls bleeding (haemostasis) will reduce the risk of infection. For Abdominal Tubectomy, the technical aspects of performing the procedure should be standardised to reduce the potential for intra-operative and post-operative problems.

INFECTION PREVENTION TIPS

To minimize the client's risk of infection after Abdominal Tubectomy, O.T. staff should strive to maintain an infection-free environment by taking the following steps:

BEFORE PROCEDURE

- Operating theatre (O.T.) staff and any other personnel entering the O.T. who are ill (e.g., have a cold or the flu), infected or have draining lesions or cuts on exposed areas (face, arms or hands) should be excused or assigned other duties out of the O.T. area until they are well.
- Select clients who are **low-risk** for infection and pelvic adhesions and who are not grossly malnourished or obese.
- Where possible, have client bathe and thoroughly wash her genital and abdominal areas before entering the O.T.
- Surgical scrub hands with antiseptic soaps and water.
- After gloving and while looking at the cervix, liberally apply antiseptic solution several (at least two) times to the cervix and vagina (if iodophors such as Betadine are used, give them time to work, 1–2 minutes to allow for release of free iodine and contact time to kill the micro-organisms).
- Wash/scrub abdomen and liberally apply antiseptic solution to the operative site, starting at the centre and moving towards the sides of the abdomen (give special attention to the navel as appropriate).

DURING PROCEDURE

- Keep number of people and movement inside the O.T. to a minimum.
- Wear appropriate surgical attire.
- Use **sterilised** or **high-level disinfected** instruments, gloves and surgical drapes.
- Use good surgical technique that minimises tissue trauma and controls bleeding (haemostasis).

AFTER PROCEDURE

- While still wearing gloves, properly dispose of contaminated wastes (gauze, cotton and gloves) in a leakproof container or plastic bag.
- Decontaminate instruments and reusable items immediately after use (while they are still in the O.T.) or before cleaning.
- Decontaminate operating table, instrument stands, lamps and other surfaces contaminated during surgery after each case.
- Follow guidelines for cleaning and processing soiled instruments, gloves, linen and needles and syringes (**See Appendices F and G**).
- Wash hands after removing gloves.

'HANDS-FREE' TECHNIQUE FOR PASSING SURGICAL INSTRUMENTS

A safer method of passing sharp instruments (needles, scissors and scalpels) during surgery has been developed recently. Called the 'hands-free' technique of instrument transfer, this technique is inexpensive and simple to use and ensures that the operating doctor, attendant and/or nurse **never** touch the same instrument at the same time (Bessinger, 1988).

Instruments passed with the hands-free technique include anything sharp enough to puncture a glove (e.g., scalpels, mosquito forceps, loaded needle holders). Using the hands-free technique, the scrub nurse places a sterile or high-level disinfected kidney basin or other suitable small container on the sterile field between her/himself and the operating doctor. The container is designated as the neutral zone on which the attendant places sharp instruments. The attendant alerts the operating doctor that a sharp instrument has been placed in the neutral zone by saying scalpel and suture ligature while placing it there. The operating doctor then picks up the instrument and returns it to the container after use.

Another way to do this is to have the attendant place the instrument into a container, such as a kidney basin and pass it to the operating doctor. The doctor lifts the instrument out of the container which is left on the field until the doctor returns the instrument to it. The attendant then picks up the container and returns it to the Mayo stand.

Note: If the operating doctor complains that the scalpel blades are dulled because the cutting edge touches the metal container, a plastic container may be used.

MAINTENANCE OF A SAFE ENVIRONMENT

Maintaining a safe, infection-free environment is an on-going process which requires frequent retraining and close supervision of clinic staff. With diligent application of recommended practices, infections following surgery and transmission of diseases such as Hepatitis B and HIV can be avoided. The practices described in this chapter, however, must be conscientiously applied **before**, **during** and **after** each procedure. Laxity at any point in the routine can have disastrous results for the safety of the procedure.

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SEVEN

ANAESTHESIA

BACKGROUND

The goals of anaesthesia for Abdominal Tubectomy procedures are to:

- Prevent pain and discomfort
- Minimise stress and anxiety

Local anaesthesia, when properly administered and managed by the operating doctor and his assistant, meets both of these goals and is recommended for Abdominal Tubectomy. The key to having a successful Abdominal Tubectomy programme, however, depends on doctors being adequately trained to operate on awake (or lightly sedated) clients (i.e., they are specially trained to handle tissues gently and use 'verbal' anaesthesia ['Verbacaine']).

Because Abdominal Tubectomy often is performed as outpatient procedure, it is important that personnel in each programme determine the pain control method most suited to its facility. It should consider the technical abilities of the clinicians providing pain control medication, the availability of drugs and the clinicians ability to manage complications of chosen regimens.

GOAL OF PAIN MANAGEMENT

The purpose of pain management for Abdominal Tubectomy is to ensure that the client 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 client 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 client's pre-operative condition (general physical assessment and vital signs, temperature, pulse and blood pressure) as well as her individual needs (body size, history of chronic disease, level of anxiety and drug allergies).

PAIN MANAGEMENT TECHNIQUES

The keys to pain management and client comfort with Abdominal Tubectomy under local anaesthesia are:

- A client who is emotionally ready to have surgery while awake; this is achieved by supportive attention from staff **before**, **during** and **after** the procedure (helps reduce anxiety and lessen pain).
- A provider who is comfortable working with clients who are awake and is trained to handle instruments and tissues gently.
- The selection of an appropriate level of pain medication.

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

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

Tips for working with clients 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) to allow the client to prepare for the next one.
- Move slowly, without jerky or quick motions.
- Use instruments with confidence.
- Avoid saying things like : This won't hurt when, in fact, it will hurt; or I have almost done, when you are not.
- Talk with the client **throughout** the procedure.
- Be sensitive to what you are saying and doing.

PRE-OPERATIVE MEDICATION

Generally, pre-operative medication for Abdominal Tubectomy clients is **not** needed and should be discouraged. If the client appears to need sedation, the first step is to identify why she is unduly anxious or nervous and provide appropriate counselling. In most cases this is sufficient: if it is not, then she may be given diazepam 5–10 mg orally 30–45 minutes before the procedure. If pre-medication is given, it should be given at an appropriate time before the procedure (30–45 minutes for oral medications) so that maximum relief will be provided during the procedure.

If sedatives, tranquilisers or analgesics are needed during the procedure, give them intravenously so that the effect is immediate.

ISSUES CONCERNING ADMINISTRATION OF ANAESTHESIA

The dangers of general anaesthesia, particularly in settings that lack skilled staff (anaesthetist) and facilities for close monitoring of the client during the procedure and recovery, have been well documented. Therefore, it is important to use alternative approaches for the safe, effective management of pain. Local anaesthesia with or without sedation is safer than either general or regional (spinal/epidural) anaesthesia, especially when procedures are being performed in an outpatient setting (see **Table 7-1**). In addition, use of general anaesthesia subjects clients to increased risk of serious complications (e.g., aspiration of gastric contents or cardiac arrest) as a result of overdose, improper administration of general anaesthesia (e.g., failure to intubate the client) or inadequate monitoring.

Local anaesthesia, most commonly provided by a local field block with lignocaine, is widely used to ease the pain associated with Abdominal Tubectomy. Local anaesthesia causes minimal physiologic disturbance, allowing the client to recover rapidly.

Because the client remains alert and awake during the procedure, it is especially important to ensure:

- Counselling to increase the clients cooperation and to minimise her fears.

- Good provider-client communication throughout the procedure (see above).
- Time and patience as local anaesthesia is not effective immediately.

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

- All members of the operating team must be knowledgeable and experienced in the use of local anaesthesia (lignocaine or bupivacaine).
- Emergency drugs and equipment (suction and resuscitation apparatus-ambu bag) should be readily available and in usable condition, and all members of the operating team trained in their use.
- Whenever possible, it is advisable to have an anaesthetist available.

Lignocaine is the anaesthetic most commonly used for Abdominal Tubectomy. Lignocaine is the world standard for local anaesthesia. It is inexpensive, safe, effective and has rapid onset of action. Furthermore, there is a low risk of allergic reaction associated with the use of lignocaine. Therefore, lignocaine is the preferred anaesthetic for Abdominal Tubectomy. See **Appendix H** for more information on the pharmacology of drugs commonly used for LA.

Table 7-1. Advantages, Disadvantages, Indications and Precautions for Local, General and Spinal/Epidural Anaesthesia for Voluntary Sterilisation

	LOCAL	GENERAL	SPINAL/EPIDURAL
Advantages	Avoid risks of general and spinal/epidural anaesthesia. Low cost. Rapid recovery when light or no sedation used. Rapid induction. Client awake and able to give early warning of some complications. Decreased post-operative nausea and vomiting. Presence of anaesthetist not required.	Stationary operative field. Complete analgesia. Amnesia present. Anxiety eliminated.	Client awake and able to give early warning of some complications. Stationary operative field. Reduced need for sedation. Decreased post-operative nausea and vomiting.
Disadvantages	Requires precise and gentle surgical technique . Mild to moderate client discomfort. Toxicity of local anaesthetic agents.	More costly; requires special equipment, personnel and environment. Longer recovery. May cause greater post-operative discomfort. Post-operative sore throat may result form intubation. Nausea and vomiting common. Toxicity of anaesthetic agents.	Not easy to administer; requires specialised training. Takes relatively long time to administer (10–30 minutes for epidural). Recovery slower than with local anaesthesia. Toxicity of anaesthetic agents.
Indications	All clients without contraindications for local anaesthesia. Setting other than operation theatre. Clients fear of general anaesthesia. Pulmonary disease. Cardiac disease.	Anxious client. Less experienced operating doctor. Client with presumed pelvic pathology. Extremely obese client.	Clients fear of general anaesthesia. Pulmonary disease.

Precautions	**Anxious client.**	**Severe cardiac or pulmonary disease.**	**Seldom justified for short VS procedure.**
	Less experienced doctor.	**Client's fear of general anaesthesia.**	**Pre-existing back disorder (relative contraindication).**
	Conditions increasing operating time and abdominal manipulation of organs (e.g., obesity, pelvic pathology).	**Lack of appropriate equipment.**	**Sensitivity to intended medications.**
		Sensitivity to intended medication.	**History of neurological disease.**
			Congulopathy.
			Jnexperienced anaesthetist.
	Sensitivity to intended medications.		**Anxious client.**
			Cutaneous infection at incision site.

Source: World Federation of Health Agencies for the Advancement of Voluntary Surgical Contraception, 1988.

A sample local anaesthesia regimen which conforms to these guidelines is presented in the table given below.

Table 7-2. Local Anaesthesia Regimen

DRUGS	REGIMEN	
	USUAL DOSE	**MAXIMUM DOSE (unit/kg)**
Pre-medication[a]:		
Atropine	0.6 mg	
Phenergan	50 mg	
Alternatives:		
Diazepam (Valium)	5.0 mg	.15 mg/kg
Pentazocine (Fortwin)	30 mg	
If client comfort requires additional medication, use Pentazocine (Fortwin)	30 mg	
Local Anaesthesia[b]	Lignocaine (Xylocaine, Lignocaine) 1%, Bupivacaine (Marcaine) 0.5%	5.0 mg/kg
Fallopian tube analgesia[c] (supplemental)	2% Lignocaine gel	

[a] These drugs can be given intramuscularly (IM) or intravenously (IV).

[b] Field block anaesthesia.

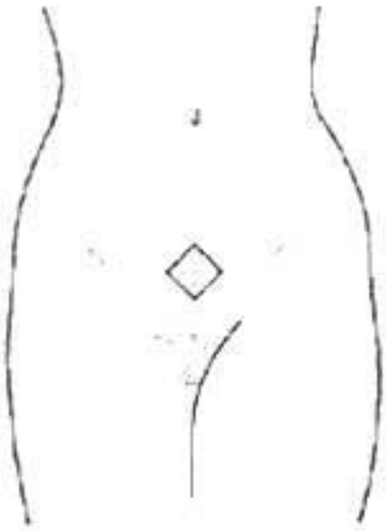
[c] Topical anaesthesia.

ADMINISTRATION OF LOCAL ANAESTHESIA

Local anaesthesia often is augmented with a mild systemic analgesic. Before surgery, give analgesic drugs in combination or sequentially. They can be given intramuscularly 25–30 minutes before the procedure or, for rapid onset of action, intravenously 2–3 minutes before the procedure. If intravenous, inject the dose over a period of 10–30 seconds and note any untoward effects.

The goal of local anaesthesia is to achieve an anaesthetic block that infiltrates all layers of tissue from the skin to the peritoneum (see **Figure 7-1**). It is not necessary to infiltrate every layer in four directions. The anaesthetic spreads both above and below the line of infiltration in the subcutaneous space. To achieve maximum effect of the local anaesthesia into the fascial layers, it is important to infiltrate with a needle at a 45-degree angle so that the point of the needle reaches the fascia. The infiltration of the peritoneal layer does not require more than one needle thrust at a 90-degree angle to the skin.

Figure 7-1. Local Anaesthetic Block for Interval Abdominal Tubectomy



The maximum safe dose of 1% lignocaine (without epinephrine) is 5 mg per kg body weight (e.g., 20 ml for 40 kg body weight). If lignocaine is supplied in 2% strength, it should be diluted to 1% with normal saline or distilled water because achieving an adequate block with 2% frequently requires more than 5 mg per kg body weight. The 1% strength results in better volume for more effective infiltration.

COMPLICATIONS OF LOCAL ANAESTHESIA

Major complications from local anaesthesia are extremely rare. Convulsions and deaths have, however, been reported in cases where excessive doses were used or injections into a vein occurred. To minimise the risk of major complications, local anaesthetics should be used in the smallest effective doses with careful attention to proper technique. **In most cases, 10 ml of 1% lignocaine is adequate. In no cases should the total dose exceed 5 mg per kg body weight of the client (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 anaesthetic agents rarely occur. Nonetheless, it is important to recognise 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 anaesthetic 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 anaesthetic:

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 (generalised seizures)
- Respiratory depression or arrest

For mild effects, wait a few minutes to see if symptoms subside, talk to the client 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.

Note: The clinician should be aware that the use of Diazepam to treat convulsions may cause respiratory depression.

MONITORING VITAL SIGNS

Client monitoring must be a routine practice in performing Abdominal Tubectomy. All staff members should be trained in how and how often to monitor the client while she is under the effects of sedation and local anaesthetic. Local anaesthetic and analgesic agents and sedatives may cause respiratory depression, cardiovascular depression, hyper-sensitivity reactions and central nervous system toxicity. Knowledge of the etiology and symptomatology of these reactions enables intervention that may prevent further complications. Staff members should be able to recognise the following:

- Normal and abnormal reactions to drugs used during the procedure
- Normal physiological baseline vital signs of the client
- Changes in the client's condition

The staff must monitor and record blood pressure, pulse and respiratory rate before, during and after the procedure until the client is fully recovered.

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EIGHT

THE SURGICAL PROCEDURE

BACKGROUND

Abdominal Tubectomy under local anaesthesia is a safe and simple procedure. To minimise problems, programmes should be guided by the following principles:

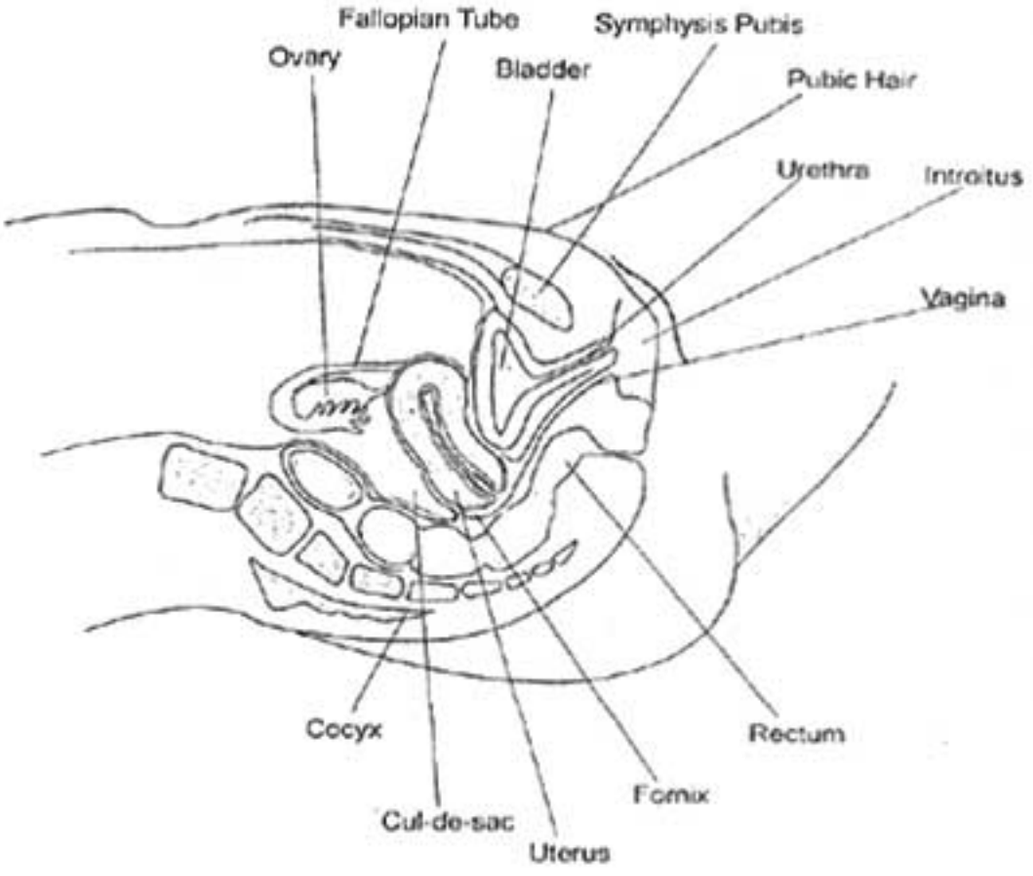
- Doctors and staff should be trained and skilled in the Abdominal Tubectomy technique, use of appropriate anaesthesia, emergency abdominal surgery and other procedures for managing emergencies.
- The facility must be equipped with drugs to handle emergencies.
- All instruments and equipment must be in optimum working order before beginning the surgical procedure.
- The service staff must maintain strict infection prevention practices.
- Clients must be carefully screened and selected.

The material presented in this chapter is intended to reinforce practical training and to serve as a ready reference for questions. It cannot substitute for actual practice which is absolutely necessary for the clinician to become proficient in Abdominal Tubectomy.

Female Pelvic Anatomy

The female reproductive tract (**Figure 8-1**) consists of the vagina, uterus, fallopian tubes and ovaries. The vagina lies at an angle of approximately 45-degrees with the vertical plane of the body. It ends in a blind vault into which the uterine cervix projects. The walls of the pocket surrounding the cervix are very thin and the internal pelvic organs can be palpated through them. The uterus is situated in the pelvic cavity between the bladder and the rectum and opens into the vagina via the external cervical os. The non-pregnant uterus measures about 5.5-8.0 cm in length, about 3.5-5.0 cm in width at its upper portion and about 2.0-2.5 cm thick. The fallopian tubes join the top of the uterus (fundus) and extends laterally to the ovaries. The ends of the fallopian tubes which reach into the pelvic cavity are fimbriated. The ovaries are approximately 3 cm long, 2 cm wide and 1 cm thick in an adult woman during her reproductive years (Hughes, 1972).

Figure 8-1. Female Pelvic Anatomy



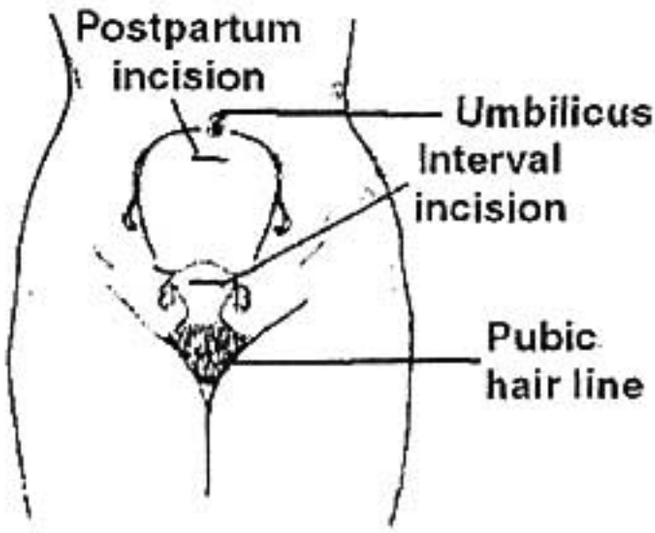
PRE-OPERATIVE CHECK-UP

Operating Surgeon must ensure

- **Fitness of the client.**
- **Part preparation: Pubic hair should not be shaved, if the hair must be cut, trim it close to the skin surface with scissors immediately before the procedure.**
- **Check the consent for the procedure.**
- **Check instruments as in Appendix I**
- **Ensure that the bladder is empty.**

Lignocaine sensitivity test not required.

Figure 8-2. Incision Site: Postpartum and Interval Abdominal Tubectomy



PROCEDURE FOR INTERVAL ABDOMINAL TUBECTOMY

Getting Ready

STEP 1: Make the client comfortable

STEP 2: Ensure that client is in a lithotomy position

STEP 3: Wash hands thoroughly with soap and water and air dry

STEP 4: Put on new examination or high-level disinfected surgical gloves on both hands.

STEP 5: Perform a gentle bimanual examination to exclude any pelvic pathology.

STEP 6: If **disposing** of gloves, immerse both gloved hands briefly in 0.5% chlorine solution and remove gloves by turning inside out and place in the waste container.

STEP 7: If **reusing** gloves, immerse both hands briefly in 0.5% chlorine solution. Remove by turning inside out. To ensure that both surfaces of the gloves are decontaminated, place them in the chlorine solution and soak for 10 minutes.

STEP 8: Client is shifted to O.T. after careful selection
Operating doctor changes to O.T. dress.

SURGICAL PROCEDURE

STEP 1: Perform surgical scrub and put on surgical gown and sterile gloves on both hands.

STEP 2: Apply antiseptic solution two times to the incision area. Use a sterile or high-level disinfected sponge forceps to hold a cotton or gauze swab soaked with antiseptic (if preparation is done with a gloved hand, care must be taken **not** to contaminate the glove by touching any unprepared skin). Begin by wiping at the incision site and move outward in a

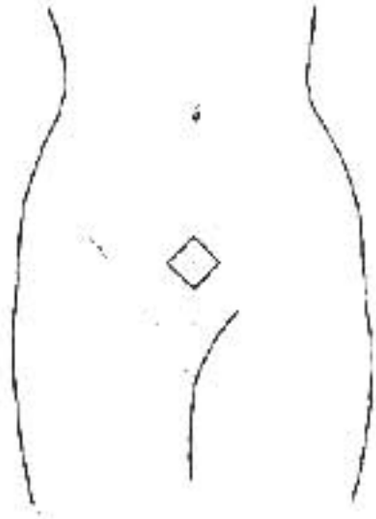
circular motion for 10–15 cm (4–6 inches) or as for any abdominal procedure and allow to air dry (about 2 minutes) before proceeding.

STEP 3: Drape the client with a sterile or high-level disinfected surgical cloth.

> Talk to the client throughout these preparatory steps, explaining what is being done.

LOCAL ANAESTHESIA

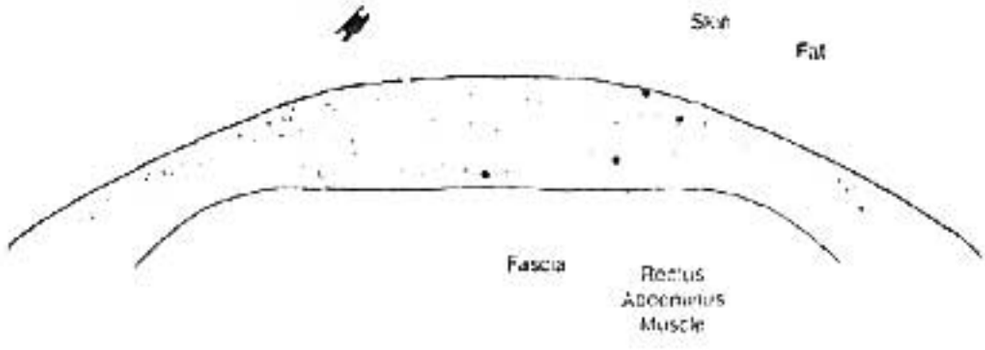
Figure 8-3. Local Anaesthetic Block for Interval Abdominal Tubectomy



STEP 1: Use either one 20 ml or two 10 ml syringes loaded with 1% lignocaine, (2% xylocaine usual supply to be diluted with equal amount of distilled water), raise a small skin wheal at the centre of the incision site and administer local anaesthetic about 3-5 ml just under the skin along both sides of the incision line.

STEP 2: Again starting at the centre of the incision line, without withdrawing the needle insert needle into the fascia at a 45° angle with the needle directed slightly superior to the incision line. Aspirate to ensure the needle is not in a blood vessel; then withdraw the needle slowly while injecting 3–5 ml of lignocaine (repeat on other side of incision line).

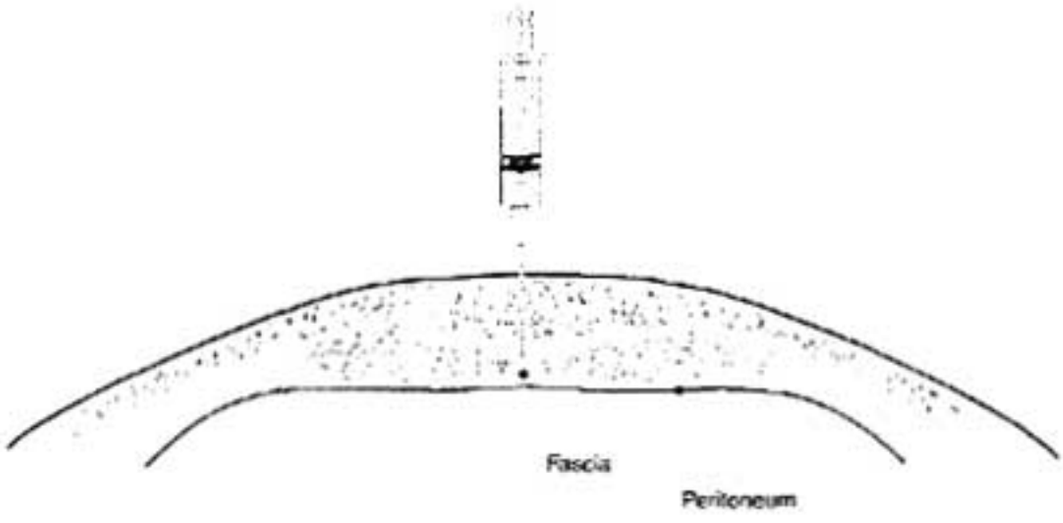
Figure 8-4. Infiltrating the Fascia (Needle at 45° Angle)



STEP 3: Insert the needle straight down through the rectus sheath to the peritoneum **(Figure 8-8)**. Aspirate to be sure the needle is not in a blood vessel. Inject 1–2 ml of anaesthetic into the peritoneal layer.

STEP 4: Withdraw the needle and place on sterile or high-level disinfected tray in safe place to prevent accidental needle sticks (reserve a small amount of lignocaine in the syringe for supplemental use on the fascia, peritoneum and tubes as needed).

Figure 8-5. Infiltrating the Peritoneum (Needle at 90° Angle)



STEP 5: Massage the skin gently to spread the anaesthetic into the tissues. Wait 2–3 minutes for the anaesthetic to take effect.

STEP 6: Test the incision site for adequate anaesthesia using tissue forceps. If client can feel a pinch, wait 2–3 minutes more and retest the incision site.

ABDOMINAL ENTRY

Members of the surgical team should watch the client's facial expression for any discomfort.

Use of the Trendelenburg position is optional. It can facilitate the bowel falling away from the incision site. If the head of the table is lowered, it should be done after the peritoneum has been opened and remain lowered only until the tubes have been occluded. The tilt of the table should not exceed 20° to avoid compromising the woman's breathing.

STEP 1: Make a 3 cm transverse/vertical incision in the skin about 3 cm above the pubic symphysis. Do not incise the subcutaneous tissues. Control bleeders, if any.

STEP 2: To minimise bleeding, **bluntly dissect subcutaneous tissues** with scissor tips or fingers.

STEP 3: Identify and grasp fascia at two places with a pair of Allis forceps and cut transversely with scissors.

STEP 4: Separate rectus muscles in the midline (longitudinally) using blunt dissection with haemostat and clean off preperitoneal tissue, if necessary.

STEP 5: Confirm transparency of peritoneum. Make a small nick in the peritoneum with scissors/knife and enlarge.

STEP 6: Place artery forceps on upper and lower cut edges of peritoneum, if needed.

LOCATING THE FALLOPIAN TUBES

STEP 1: Insert index finger/index and middle finger of one hand inside the incision and feel for the fundus of the uterus.

STEP 2: Slide the finger/s along the fundus laterally upto the cornu and then posteriorly and feel for the tube of one side.

STEP 3: Trace the tube laterally with finger/s.
If using one finger then hook it, lift the tube and roll it against the anterior abdominal wall.

If using two fingers roll, it between them to confirm that it is the fallopian tube (the fallopian tube is soft and mobile).

STEP 4: Holding the tube between the two fingers or hooking over one finger gently bring it out of the abdominal incision.

STEP 5: Gently grasp the mid-portion of the tube with the Babcock's forceps.

STEP 6: Identify the tube by tracing the tube till the fimbrial end laterally.

TUBAL OCCLUSION

The simple Pomeroy technique is the most widely used method of ligation in Abdominal Tubectomy. The resected loop or segment should be in the mid-portion of the tube, where the diameter of each stump will be the same.

In the simple Pomeroy technique, a loop of tube is ligated and the knuckle of the tube above the ligature is excised (**Figure 8-6**). Because the blood vessels of the mesosalpinx are caught in the ligature, haemostasis must be assured before releasing the tube into the abdominal cavity.

STEP 1: While grasping the mid-portion of the tube, transfix the tube with 1-0 chromic catgut and then tie the knots on both sides of the tube making a loop of about 2-3 cms.

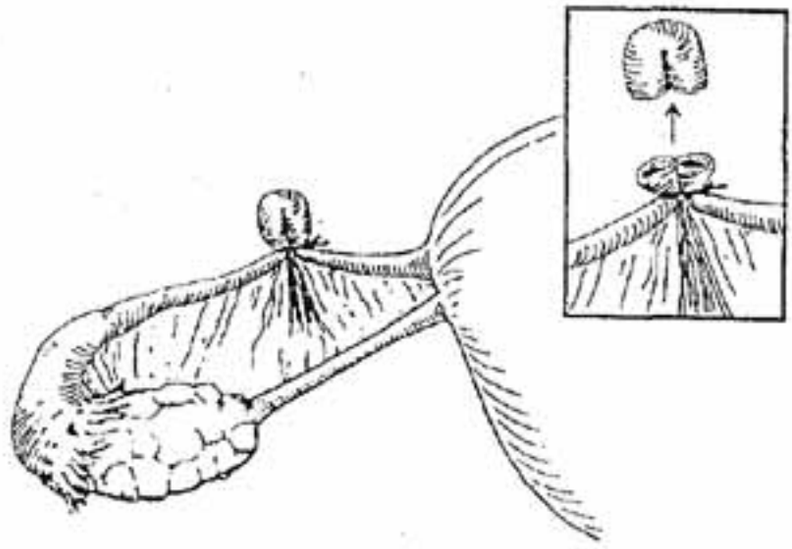
STEP 2: Cut out one end of the loop with scissors and then the other ensuring that at least one cm of the tubal stump is left behind on both sides.

STEP 3: While still holding ligature, inspect the stump for haemostasis.

STEP 4: Cut ligature 1 cm from stump and release the tube, allowing it to return to the abdomen.

STEP 5: Repeat the procedure on the opposite side for the second tube.

Figure 8-6. Pomeroy Technique of Tubal Occlusion



Note: After occlusion of the tubes, adjust the table so that it is once again parallel to the floor.

CLOSURE

When haemostasis is assured, close the wound in layers. The closure of peritoneum is optional.

STEP 1: Secure rectus sheath edges with interrupted/continuous sutures.

STEP 2: Close skin with same absorbable/non-absorbable suture material. Dress the wound.

PROCEDURE TO FOLLOW AFTER COMPLETION OF ABDOMINAL TUBECTOMY

Client Care

- Help the client from the operating table and assist to the recovery area. Handle the client gently when moving her.
- Make the client as comfortable as possible.
- Monitor vital signs until stable.

(See **Chapter 10** for detailed information on post-operative recovery and discharge).

Waste Disposal and Decontamination

- Before removing gloves, place instruments into a container filled with 0.5% chlorine solution for decontamination (see **Appendix C** for how to make a solution from household bleach). Before immersing the needle and syringe, fill with chlorine solution (do not disassemble). Soak for 10 minutes. Rinse **immediately** with clean water to avoid discolouration or corrosion of metal items.
- The surgical drape must be washed before reuse.
- While still wearing gloves, place all contaminated objects (gauze, cotton and other waste items) in a properly marked, leak-proof container with a tight-fitting lid or in a plastic bag.
- If **disposing** of gloves, immerse both gloved hands briefly in 0.5% chlorine solution and then carefully remove gloves by turning inside out and place in the waste container.

- If **reusing** gloves, immerse both hands briefly in the 0.5% chlorine solution to decontaminate the outside. Remove by turning inside out. To ensure that both surfaces of the gloves are decontaminated, place them in the chlorine solution and soak for 10 minutes.
- Wash hands thoroughly with soap and water.
- All waste material should be disposed of by burning or burying.

POST–OPERATIVE CARE

a) The client may be discharged the same day minimum after four hours when the following conditions are met:
   i) The client is alert and ambulatory.
   ii) The client's vital signs are stable and normal.
   iii) The client has been seen and evaluated by a doctor.

b) Analgesic and other medications if needed must be provided/prescribed prior to sending her home.

c) The client is to be provided with a discharge card, indicating date and type of surgery, name of institution and date and place of follow-up. Both verbal and written post-operative instructions should be given in the local language.

POST-OPERATIVE INSTRUCTIONS

- Return home and rest for the remainder of the day.
- Resume only light work after 48 hours and gradually return to full activity by two weeks following surgery.
- Use medication as instructed.
- Resume a normal diet as soon as possible.
- Keep the incision area clean and dry. Do not disturb or open the dressing.
- Bathe after 24 hours following the surgery. When bathing, keep the incision area dry. If the dressing becomes wet, it should be changed.
- May have intercourse one week after the surgery, or whenever she feels comfortable after interval sterilisation. Sterilisation procedures do not interfere with sexual pleasure, ability, or performance.
- Report to the doctor or clinic if there is excessive pain, fainting, fever, bleeding or pus discharge from the incision.
- Return to the clinic on the seventh post-operative day for removal of stitches and post-operative check-up.
- Follow the instructions, on where to go for routine and emergency follow-up.
- Return to the clinic, if there is missed period/suspected pregnancy.
- If there are any questions, contact the health personnel or doctor at any time.

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Association for Voluntary Surgical Contraception. 1993. *Minilaparotomy under local anesthesia: A Curriculum for Doctors and Nurses*. New York.

Hughes, E.C. 1972. *Obstetrics-Gynecology Terminology*. Philadelphia: F.A. Davis Company.

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NINE

POSTPARTUM ABDOMINAL TUBECTOMY[1]

BACKGROUND

Postpartum tubal occlusion should be included in every voluntary surgical contraception program. The period after the birth of a child may be the most convenient time for the procedure both for the client and the service provider. The decision for postpartum tubal occlusion, however, should be made **before** the onset of labor whenever possible. Information about postpartum tubal occlusion should be included as part of routine prenatal Counselling.

The postpartum procedure is best performed at the health care facility where the delivery takes place. It should not be performed, however, at the site of a home delivery or in a maternity center that does not have staff trained to perform the procedure.

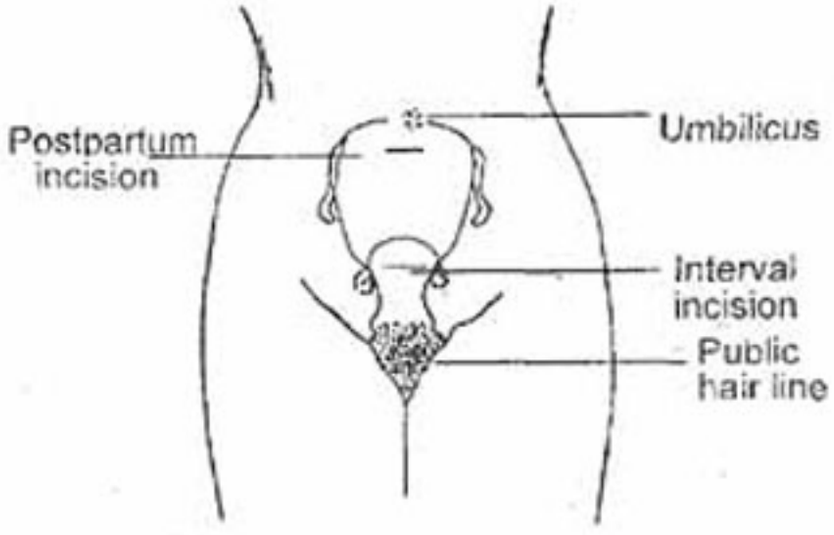
Abdominal Tubectomy is the preferred approach during the immediate postpartum period. The incision for postpartum Abdominal Tubectomy is often smaller than that needed for interval procedures.

DIFFERENCES BETWEEN POSTPARTUM AND INTERVAL PROCEDURES

The size and position of the uterus differ in postpartum and interval clients and the procedures differ accordingly.

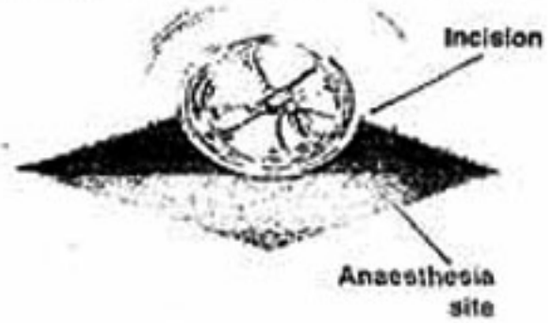
- After delivery the uterus is high in the abdomen. The fallopian tubes are therefore easily accessible through a small sub-umbilical incision (**Figure 9-1**). **Figure 9-2** shows a closeup of the incision.

Figure 9-1. Incision Sites for Postpartum and Abdominal Tubectomy



[1] *Adapted from*: Philippine Family Planning Program. 1993. *Guidelines: Minilaparotomy with Local Anesthesia*. Family Planning Service, Department of Health: Manila, The Philippines.

Figure 9-2. Closeup of Postpartum Abdominal TubectomyIncision



- The fallopian tubes are generally bigger, often oedematous and more friable; therefore, greater care is needed in handling them.

TIMING OF POSTPARTUM PROCEDURES

The recommended time for performing a postpartum Abdominal Tubectomy is within 48 hours of vaginal delivery. During that time, the fundus is near the umbilicus so that a small sub-umbilical incision affords ready access to the tubes. In addition, an unnecessarily long hospital stay is prevented.

It is preferable to wait at least 12 hours after delivery. This allows time to assess the condition of the baby and to identify postpartum complications such as haemorrhage. An exception to this is when general or regional anaesthesia will be used for delivery.

Clients presenting for a postpartum procedure after a home delivery must be asked whether they have been immunized against tetanus. If not, tetanus toxoid should be given and the client told to return in 6 weeks. At that time, the second tetanus toxoid dose should be given and the procedure can be performed. If the client states that she has been immunized agnist tetanus, the procedure can be performed under antibiotic cover.

If Abdominal Tubectomy is done after 48 hours and the uterus has started to involute, the incision may be done vertically about 2 cm below the fundus. A suprapubic incision also can be done if the fundus is more than halfway below the umbilicus.

If possible, Abdominal Tubectomy should not be performed from 7 days postpartum up to the end of the puerperium (6 weeks after delivery) for two reasons:

- During this period, the uterus can no longer be reached through an incision near the umbilicus. For the first 48 hours, the uterus lies just beneath the skin and fascia, below the umbilicus. After that time, as it descends it lies beneath an area with additional layers of fat and muscle, making entry into the peritoneal cavity more difficult and possibly requiring a larger incision.
- The postpartum uterus is soft and enlarged, prohibiting the use of a uterine elevator.

If the procedure is postponed for 28 or more days after delivery, the risk of becoming pregnant begins to increase for women who are not fully breastfeeding. Appropriate methods of contraception are needed in this situation.

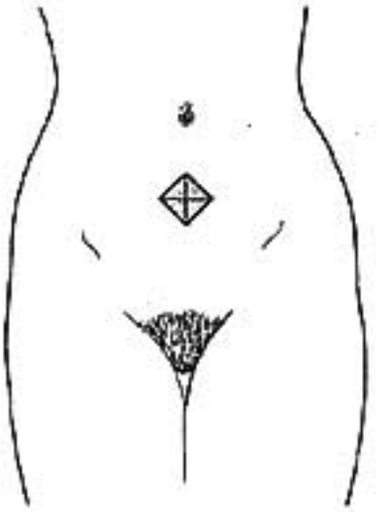
HOSPITAL STAY

In most cases, the postpartum procedure and its recovery period do not add to the usual hospital stay required for normal delivery.

THE SURGICAL PROCEDURE

LOCAL ANAESTHESIA

Figure 9-3. Local Anaesthetic Block for Postpartum Abdominal Tubectomy



STEP 1: Use either one 20ml or two 10 ml syringe loaded with 1% lignocaine raise a small skin wheal at the centre of the incision site and administer local anaesthetic about 3-5 ml just under the skin along both sides of the incision line.

STEP 2: Again starting at the centre of the incision line, insert needle into the fascia at a 45^0 angle with the needle directed slightly superior to the incision line. Aspirate to ensure the needle is not in a blood vessel; then withdraw the needle slowly while injecting 3–5 ml of lignocaine (repeat on other side of incision line).

SURGICAL STEPS

STEP 1: Make a 3 cm transverse/vertical incision in the skin (after feeling for uterus) just inferior to the fundal margin of the uterus or sub-umblical incision. Do not incise the subcutaneous tissues. Control bleeders, if any.

STEP 2: To minimise bleeding, **bluntly dissect subcutaneous tissues** with scissor tips or fingers.

STEP 3: Identify and grasp fascia at two places with a pair of *Allis forceps and cut transversely* with scissors.

STEP 4: Separate rectus muscles in the midline (longitudinally) using blunt dissection with haemostat and clean off preperitoneal tissue, if necessary.

STEP 5: Confirm transparency of peritoneum. Make a small nick in the peritoneum with scissors/knife and enlarge.

STEP 6: Place artery forceps on upper and lower cut edges of peritoneum, if needed.

LOCATING THE FALLOPIAN TUBES

STEP 1: Insert index finger/index and middle finger of one hand inside the incision and feel for the fundus of the uterus.

STEP 2: Slide the finger/s along the fundus laterally upto the cornu and then posteriorly and feel for the tube of one side.

STEP 3: Trace the tube laterally with finger/s.
If using one finger then hook it, lift the tube and roll it against the anterior abdominal wall.

If using two fingers roll, it between them to confirm that it is the fallopian tube (the fallopian tube is soft and mobile).

STEP 4: Holding the tube between the two fingers or hooking over one finger gently bring it out of the abdominal incision.

STEP 5: Gently grasp the mid-portion of the tube with the Babcock's forceps.

STEP 6: Identify the tube by tracing the tube till the fimbrial end laterally.

TUBAL OCCLUSION

The simple Pomeroy technique is the most widely used method of ligation in Abdominal Tubectomy. The resected loop or segment should be in the mid-portion of the tube, where the diameter of each stump will be the same.

In the simple Pomeroy technique, a loop of tube is ligated and the knuckle of the tube above the ligature is excised (**Figure 9-4**). Because the blood vessels of the mesosalpinx are caught in the ligature, haemostasis must be assured before releasing the tube into the abdominal cavity.

STEP 1: While grasping the mid-portion of the tube, transfix the tube with 1-0 chromic catgut and then tie the knots on both sides of the tube making a loop of about 2-3 cms.

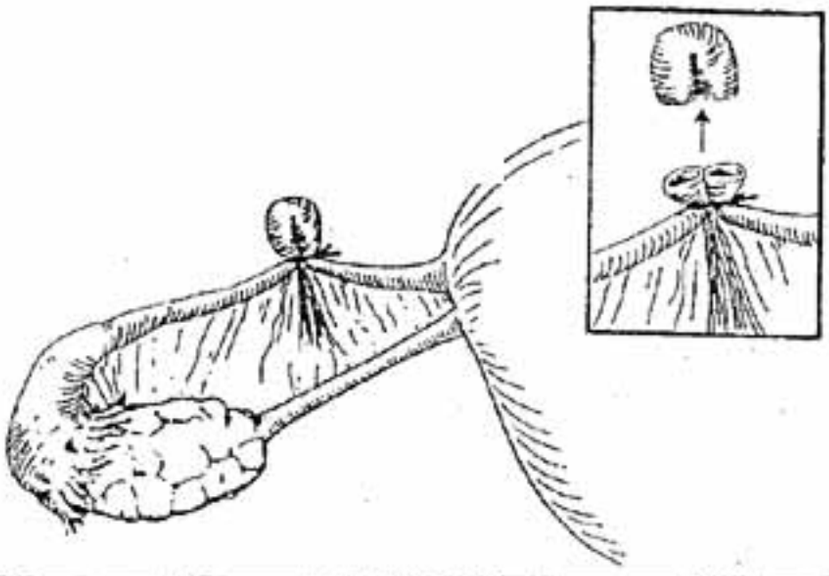
STEP 2: Cut out one end of the loop with scissors and then the other ensuring that at least one cm of the tubal stump is left behind on both sides.

STEP 3: While still holding ligature, inspect the stump for haemostasis.

STEP 4: Cut ligature 1 cm from stump and release the tube, allowing it to return to the abdomen.

STEP 5: Repeat the procedure on the opposite side for the second tube.

Figure 9-4. Pomeroy Technique of Tubal Occlusion



Note: After occlusion of the tubes, adjust the table so that it is once again parallel to the floor.

CLOSURE

When haemostasis is assured, close the wound in layers. The closure of peritoneum is optional.

STEP 1: Secure rectus sheath edges with interrupted/continuous sutures.

STEP 2: Close skin with same absorbable/non-absorbable suture material. Dress the wound.

PROCEDURE TO FOLLOW AFTER COMPLETION OF ABDOMINAL TUBECTOMY

Client Care

- Help the client from the operating table and assist to the recovery area. Handle the client gently when moving her.
- Make the client as comfortable as possible.
- Monitor vital signs until stable.

(See **Chapter 10** for detailed information on post-operative recovery and discharge).

Waste Disposal and Decontamination

- Before removing gloves, place instruments into a container filled with 0.5% chlorine solution for decontamination (see **Appendix C** for how to make a solution from household bleach). Before immersing the needle and syringe, fill with chlorine solution (do not disassemble). Soak for 10 minutes. Rinse **immediately** with clean water to avoid discouloration or corrosion of metal items.
- The surgical drape must be washed before reuse.
- While still wearing gloves, place all contaminated objects (gauze, cotton and other waste items) in a properly marked, leak-proof container with a tight-fitting lid or in a plastic bag.
- If **disposing** of gloves, immerse both gloved hands briefly in 0.5% chlorine solution and then carefully remove gloves by turning inside out and place in the waste container.

- If **reusing** gloves, immerse both hands briefly in the 0.5% chlorine solution to decontaminate the outside. Remove by turning inside out. To ensure that both surfaces of the gloves are decontaminated, place them in the chlorine solution and soak for 10 minutes.
- Wash hands thoroughly with soap and water.
- All waste material should be disposed of by burning or burying.

POST–OPERATIVE CARE

a) The client may be discharged the same day minimum after four hours when the following conditions are met:
   i) The client is alert and ambulatory.
   ii) The client's vital signs are stable and normal.
   iii) The client has been seen and evaluated by a doctor.

b) Analgesic and other medications if needed must be provided/prescribed prior to sending her home.

c) The client is to be provided with a discharge card, indicating date and type of surgery, name of institution and date and place of follow-up. Both verbal and written post-operative instructions should be given in the local language.

POST-OPERATIVE INSTRUCTIONS

- Return home and rest for the remainder of the day.
- Resume only light work after 48 hours and gradually return to full activity by two weeks following surgery.
- Use medication as instructed.
- Resume a normal diet as soon as possible.
- Keep the incision area clean and dry. Do not disturb or open the dressing.
- Bathe after 24 hours following the surgery. When bathing, keep the incision area dry. If the dressing becomes wet, it should be changed.
- May have intercourse one week after the surgery, or whenever she feels comfortable after interval sterilisation. Sterilisation procedures do not interfere with sexual pleasure, ability, or performance.
- Report to the doctor or clinic if there is excessive pain, fainting, fever, bleeding or pus discharge from the incision.
- Return to the clinic on the seventh post-operative day for removal of stitches and post-operative check-up.
- Follow the instructions, on where to go for routine and emergency follow-up.
- Return to the clinic, if there is missed period/suspected pregnancy.
- If there are any questions, contact the health personnel or doctor at any time.

TEN

POST-OPERATIVE RECOVERY, DISCHARGE AND FOLLOW-UP[1]

BACKGROUND

Monitoring the client after surgery is a very important function because it is during this period that any effects of surgical trauma or other post-operative complications become apparent. Although nurses or other staff members will carry out the tasks related to post-operative recovery and discharge, the operating doctor is ultimately responsible for the quality of recovery room care.

Before discharge, a staff member should give the client post-operative instructions, orally and in writing. The client should be asked to repeat these instructions to ensure that she has understood them and be given a follow-up appointment. The operating doctor or medical officer assess that she is ready for discharge.

The client should expect a visit by a health worker within 48 hours of discharge. The follow-up clinic visit should occur on the 7th day after surgery so that the sutures (if non-absorbable sutures were used) can be removed at the optimum time and signs of infection. The visit should include an examination of the operative site and any other relevant examination required by the specifics of the case and symptoms or complaints of the client. If the client has a problem that cannot be resolved, another visit should be scheduled.

POST-OPERATIVE MONITORING

In the post-operative period, staff must observe the client constantly. The person assigned this duty has the following responsibilities:

- Receive the client from the operating theatre; review the client record.
- Make the client as comfortable as possible (handle the woman gently when moving her).
- Make sure that an over sedated client is never left unattended.
- Monitor the client's vital signs:
- Check blood pressure, respiration and pulse every 15 minutes until they are stabilised at pre-operative levels
- Thereafter, check vital signs every 30 minutes until the client has fully recovered from the effects of the anaesthesia.
- Record vital signs in the client record each time they are checked.
- Check the surgical dressing for oozing or bleeding.
- Observe the general condition of the client (including changes in skin color, post-operative pain, level of consciousness and orientation to time and space).

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[1] *Adapted from*: Philippine Family Planning Program. 1993. *Guidelines: Minilaparotomy with Local Anesthesia*. Family Planning Service, Department of Health: Manila, The Philippines.

For pain she may take one or two analgesic tablets, such as ibuprofen, every 4 to 6 hours. (Do not use Aspirin as it may increase bleeding.)

- She should see her healthcare provider if she ever has signs of pregnancy. If she becomes pregnant, careful examination is to be done to rule out ectopic pregnancy.
- She should expect a visit by a health worker within 48 hours.
- She should return for a **follow-up visit** on 7th day of surgery for stitch removal if sutures are non-absorbable.

Written instructions summarising the above also should be provided to the client or her spouse.

How to Give Post-operative Instructions

- Give the client a copy of the post-operative instructions written in a language she understands.
- If the client is illiterate, ask her to name a literate friend or relative near her home who can read the instructions to her at a later date.
- Explain the instructions to the client in a language that she understands.
- Explain what the client can expect to feel on the days following surgery. Common symptoms include:
- Uterine cramps
- Incision discomfort
- Abdominal discomfort
- Slight vaginal bleeding
- Explain the warning signs of complications and where she should go if they occur:
- Abdominal pain that is persistent, severe or increasing
- Bleeding or pus or swelling at the incision site
- Fever within a month of the Abdominal Tubectomy
- Check whether the client understands the instructions by asking her to repeat them.
- If the follow-up visit is to take place at another facility, make sure that the client knows where the clinic is and how to get there.
- Encourage the client to ask questions.

DETERMINING WHEN THE CLIENT IS READY FOR DISCHARGE

Occasionally a client may require overnight observation. The following are indications that a client is **not ready** for discharge:

- She is unable to retain fluids (vomiting).
- She is unable to ambulate (unsteady when standing).
- She shows signs of possible abdominal bleeding.

- Administer drugs or treatment for symptoms according to the doctor's orders.
- Provide water, tea and fruit juices when the client feels comfortable.
- Complete the client record form.

SIGNS OF POST-OPERATIVE COMPLICATIONS

The staff should be able to recognize and respond to the following signs of distress:

- Excessive somnolence.
- Respiratory rate of less than 10 per minute.
- Hyperventilation.
- Systolic blood pressure of less than 90 mm mercury.
- Rapid pulse rate (over 90 per minute) or weak pulse.
- Pallor or cyanosis.

The following may be symptoms of an intra-operative complication:

- Inability to retain fluids (vomiting)
- Inability to urinate
- Inability to ambulate (client is unsteady when standing)
- Signs of hypovolemia (client feels faint upon rising, has rapid heart rate)
- Severe abdominal distention.

POST-OPERATIVE INSTRUCTIONS

After the sedation has worn off and before the client is discharged, the client should be told the following post-operative instructions:

- She should rest and keep the operative site dry for 2 days. She can gradually resume normal activities as she feels able. (She should be able to return to normal activities within 7 days after surgery.)
- She may have sexual intercourse 1 week after surgery or whenever it is comfortable.
- She should avoid heavy lifting or putting tension on the incision for 1 week.
- She should return to the clinic or contact the clinic or doctor immediately if she develops any of the following:
- Fever (greater than 38°C or 100.4°F)
- Dizziness with fainting
- Persistent or increasing abdominal pain
- Bleeding or fluid coming from the incision
- Signs or symptoms of pregnancy

- She shows signs of hypovolemia. She is unable to void or is dizzy or has an increase in pulse rate when moving from lying down to a sitting up or standing position. (An increase in pulse rate when moving from a lying to sitting position with legs dangling is a more sensitive indicator of hypovolemia than is low blood pressure.)
- A responsible adult is not available to accompany or transport her home.

The client is recovered sufficiently to be discharged when she meets the following conditions:

- She is taking and retaining fluids and light nourishment.
- She can pass the Romberg test (stand upright with eyes closed and feet together, without dizziness).
- She can walk upright with minimal support.
- Her vital signs are at pre-operative levels.
- She has no bleeding or seepage from the wound.
- She has no unusual complaints.

Before discharging the client, the staff should assure the following:

- She understands the signs of potential problems (warning signs).
- She understands that she should return to the clinic immediately or seek emergency care if a problem develops.
- She has heard and repeated the post-operative instructions.
- She has received any medications ordered.
- She has received a follow-up appointment.
- She has a responsible adult to accompany her home.

TRANSFER OF CLIENT RECORDS

All client records should be maintained at the service site where the procedure took place. If the follow-up visit will take place at another facility, the client should be given a card to give to the follow-up provider. The card should state the date of the procedure, the type of procedure and any special instructions. If it is necessary to transfer a copy of the client's records, the original should be kept at the facility where the surgery took place.

FOLLOW-UP

Although it is preferable that the operating doctor conducts the follow-up examination, a trained nurse or midwife can perform the examination and manage minor complications. If the client goes to another health center for follow-up, it is important that the staff at that facility be trained to do a careful follow-up examination and report complication if any to the facility where the Abdominal Tubectomy took place and to the concerned surgeon.

When to Return to the Clinic

The first **follow-up visit** should preferably occur on the seventh day after surgery (or as early as possible after 7 days) and should include an examination of the operative site, suture removal (if non-absorbent sutures were used) and any other relevant examination called for by the specifics of the case and symptoms or complaints of the client.

Subsequent Follow-up

A subsequent follow-up visit should be made after either one month or the next menstrual period, whichever is earlier. During this visit the staff assesses the client to determine if she has any side effects or complications related to the surgery. In addition to medical problems, a staff member should look for signs that the client may be experiencing dissatisfaction or regret related to the procedure.

The follow-up visit should include the following tasks:

- Check the medical record or referral form, if available, for background information on the client and the surgical procedure.
- Ask the client if she has experienced any problems or had any complaints since the surgery. Specifically, ask if the woman has experienced any of the following:
- vaginal discharge or bleeding
- wound discharge or bleeding
- urinary difficulties
- fever
- pain or other distress
- Examine the operative site to assess healing and the absence of infection.
- Clean the operative site.
- Remove non-absorbable sutures, if used.
- Treat or refer for any complications indicated by the examination.
- Remind the client to return to the clinic if she misses a menstrual period or shows other signs of pregnancy.
- Document the follow-up visit in the client's medical record, including complaints, diagnosis and treatment.

Emergency Follow-up

Clients making an emergency follow-up visit should receive immediate attention. Staff should be alert to the possibility of internal bleeding, bowel injury or infection.

If the woman had surgery at another health facility, the medical records may not be available. The staff member conducting the interview should obtain chronological information covering all events since the day of surgery. Complications and treatment should be reported to the facility where the Abdominal Tubectomy was performed.

The emergency visit should include the following tasks:

- Examine the client immediately. Check all areas related to her complaint.
- Read the medical record, if available.
- Obtain chronological information from the client. Include any problems during the surgery or in the recovery period; development of problems or increase in discomfort and any medications taken or treatments obtained.
- Decide on the treatment for problems that can be handled on an outpatient basis.
- Arrange for a higher level of treatment for potentially serious complications.
- Note on the client record all problems and actions taken.
- Inform the facility where the Abdominal Tubectomy was performed about the emergency follow-up visit (if applicable).

FAILURE OF TUBAL OCCLUSION

Tubal occlusion is one of the most effective methods of contraception. Ectopic or intrauterine pregnancy is, however, possible after a tubal occlusion procedure. Service providers must be prepared to identify such conditions early. Symptoms of an ectopic pregnancy include lower abdominal pain, amenorrhoea and abnormal uterine bleeding. If pregnancy, particularly ectopic, is suspected, the woman should be referred immediately to an appropriate medical facility for diagnosis and treatment.

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ELEVEN

MANAGEMENT OF COMPLICATIONS[1]

BACKGROUND

Complications are abnormal conditions caused by the procedure that require intervention or management beyond routine post-operative care. For example, a wound infection noted on the fifth day after surgery that requires opening the wound is a **complication**, while abdominal cramping on the day after the procedure is a **common feature.**

Serious complications are rare and the mortality rate for Abdominal Tubectomy is low if complications are immediately and accurately diagnosed and effectively treated. Complications of Abdominal Tubectomy generally are the same as those associated with similar abdominal surgery:

- Anaesthesia-related complications
- Vasovagal reactions
- Bleeding from the incision site or mesosalpinx
- Abdominal injuries: uterine perforations, bladder or bowel injuries
- Infections of the wound or pelvic cavity

Overall, Abdominal Tubectomy is a safe procedure and few women experience complications. Major complications occur in less than 2% of all cases. Anaesthesia-related complications are summarized in **Table 11-1**; management of surgical complications is summarized in **Table 11-2**.

In addition to the specific interventions described in this chapter, the following steps should be taken when a complication arises during the procedure:

- Suspend the surgery till the client is stable.
- Return the table to the parallel position.
- Consider hospitalising the client for observation.
- Record the complication and the treatment in the client record.

ANAESTHESIA-RELATED COMPLICATIONS

Serious anaesthesia-related complications are likely to occur as a result of overdose, or improper administration of the anaesthesia. To manage acute complications related to anaesthesia:

- For early identification of the problem, adequate monitoring of vitals is needed.
- Identify the problem immediately.
- Take prompt action based on the nature of the problem.

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[1] *Adapted from*: Philippine Family Planning Program. 1993. *Guidelines: Minilaparotomy with Local Anesthesia*. Family Planning Service, Department of Health: Manila, The Philippines.

Cases of **respiratory depression** should be managed as follows:

- Keep the airway open.
- Ventilate the client using Ambu bag; attach O_2 tube, if possible
- Monitor vital signs like pulse, blood pressure and respiration.

Table 11-1. Anaesthesia-Related Complications

Complication Respiratory depression or arrest Cardiovascular changes, including arrhythmia, hypotension or hypertension Cardiac arrest Convulsions Aspiration of vomitus
Signs Decreased breathing rate Short, shallow, quick breathing Dyspnea, gasping, laryngeal stridor Circumoral cyanosis (blueness around the mouth) Cyanotic nail beds (bluish fingernail beds) Irregular or rapid pulse Central nervous system changes (restlessness, anxiety, disorientation) Convulsions or loss of consciousness Absence of pulse, heart sounds, respiration, reflexes and muscle tone Hypotension
Possible Cause Overdose of sedative or tranquiliser Combined effect of drugs Delayed effect of drugs Accidental IV injection of Lignocaine Overdose of Lignocaine Undiagnosed cardiac disease Severe blood loss with intravascular volume depletion

- Administer Naloxone 0.4-0.8 mg intravenously if a narcotic agent has been used. This dose may be repeated within 2–3 minutes if the desired improvement in respiratory function is not obtained.

  Naloxone should routinely be the drug of first choice for respiratory depression when narcotics have been used. It acts promptly, has little toxicity and is quickly metabolised. The client must be monitored closely because the effect of the narcotic causing the depression may outlast the effect of Naloxone; repeated administrations may be required.

Several doses of Naloxone may be administered over a short period without untoward effects.

If there is no response after Naloxone 2–4 mg, other causes of respiratory depression should be considered.

- For pulmonary aspiration of gastric contents, suction the trachea immediately and administer hydrocortisone sodium succinate 1–1.5 g intravenously. Begin broad-spectrum antibiotics.
- For convulsion, give I/V 10mg Diazepam stat, followed by 5mg if required to control seizures. (Be aware that Diazepam may aggravate respiratory depression.)

To prevent **cardiovascular complications**, do not administer a rapid bolus injection of sedative. The sedative should be given slowly, with close clinical monitoring of the client's vital signs. The dose must be adjusted to the client's body weight and general health condition.

If a cardiovascular complication does occur, the surgical team should be prepared to provide basic cardiopulmonary resuscitation.

- If a cardiac arrest is confirmed, given an immediate precardial thump and begin external cardiac massage.
- In case of respiratory arrest, give oxygen through resuscitation equipment.
- Cannulate a vein and administer resuscitative drugs as appropriate and indicated.

Table 11-2. Management of Complications Associated with Abdominal Tubectomy

COMPLICATION	POSSIBLE CAUSE	ASSESSMENT	MANAGEMENT
Wound infection	Failure to observe appropriate IP practices	Confirm presence of infection or abscess.	If skin infection is present, treat with antibiotics. If abscess is present, drain and treat as indicated.
	Failure to instruct client in proper care of wound		
Post-operative fever	Infection	Determine source of infection.	Treat infection based on findings.
Bladder injuries (rare)	Failure to ensure bladder was emptied before surgery	**Intra-operatively** Clear fluid welling up into the incision or operative site	**Intra-operatively** Insert a Foley catheter.
	Inappropriate location of incision	Sight of the rugal folds of bladder mucosa	Instill sterile solution into bladder through catheter. Repair injury in two layers using continuous suture of fine catgut with atraumatic needle. Continue Abdominal Tubectomy if injury is minor.
		Post-operatively Presence of haematuria Suprapubic pain Fever	Begin course of antibiotics. Hospitalise if injury is extensive. **Post-operatively** Refer to appropriate centre as necessary.
Bowel injury	Failure to feel the grasped tissue of the fold to ensure bowel is not adherent before opening	**Intra-operatively** Visualization of bowel serosa or muscularis	**Intra-operatively** Repair in multiple layers using fine silk suture (or chromic catgut if available) with atraumatic needle.

	Failure to look for translucence of the tissue fold before opening	Visualization and smell of bowel contents	If injury is superficial (serosal layer only), allow client to rest an extra hour. Discharge with instructions to return immediately if pain or fever begins. Follow-up to monitor any change in condition over next 48 hours.
	Quick and deep entry through the thin abdominal wall at the umbilicus during postpartum procedures	Abdominal pain **Post-operatively** Abdominal pain that increases in severity Vomiting Failure to pass flatus Acute illness Fever with rapid pulse (early) Return of temperature to normal or subnormal (later) Abdominal distension Abdominal tenderness	If injury is through to bowel lumen, initiate IV antibiotics. Hospitalise for observation following repair. If faecal matter is expelled into the abdomen, lavage the peritoneal cavity with sterile solution. Complete Abdominal Tubectomy after repairing bowel. **Note: If the health centre does not have the facilities and staff to treat bowel injuries, the client should be referred to the nearest district hospital.**
Haematoma (subcutaneous) Unusually severe pain at incision site	Unrecognized injury to blood vessels, bleeding beneath skin surface Subcutaneous collection of pus, serum or blood	Confirm presence of infection or abscess. Determine presence of infection or abscess. Check for fluctuance, expression of pus or serum, severe induration.	Apply warm, moist packs to site. Observe; it usually will resolve over time but may require drainage if extensive. If infected, treat as indicated (antibiotics). Treat based on findings (e.g., moist heat, analgesics, antibiotics).

Immediate pregnancy, Ectopic	Conception occurred prior to tubal ligation with embryo trapped in distal portion of tube	Sudden intense pain, persistent pain or cramping in the lower abdomen, usually localised to one side Irregular bleeding or spotting with abdominal pain after a missed or abnormally light menstrual period Fainting or dizziness associated with either of the above conditions, that persists for more than a few seconds (could indicate internal bleeding)	**Manage based on findings.**
Remote pregnancy, Ectopic	Failed tubal ligation or re-canalisation of ligated portion of tube	Sudden intense pain, persistent pain or cramping in the lower abdomen, usually localised to one side Irregular bleeding or spotting with abdominal pain after a missed or abnormally light menstrual period Fainting or dizziness associated with either of the above conditions, that persists for more than a few seconds (could indicate internal bleeding)	**Manage based on findings.**
Pregnancy, intrauterine	Undetected pregnancy at time of Abdominal Tubectomy Incomplete occlusion of tube or procedure performed on structure other than the tube Spontaneous recanalisation Formation of fistulas at occluded end of tube	Pelvic evaluation Pregnancy test	**Manage according to GOI guidelines.**

Superficial bleeding (skin edges or subcutaneously)	Failure to maintain haemostasis during surgery	Determine presence of infection, abscess or haematoma.	**Post-operatively** Place secure pressure dressing on wound. If bleeding persists, reopen wound under local anaesthesia and clamp and ligate the bleeding points.
Abdominal/Pelvic adhesions	Pelvic inflammatory disease, endometriosis, septic abortion, previous abdominal surgery	Adhesions noted upon entering the abdomen or attempting to locate and identify tube	If adhesions can be lysed safely and gently, tubal ligation can proceed. If adhesions are dense, however, and tube cannot be identified/grasped without risking injury to internal organs or without causing significant pain, general anaesthesia and larger incision may be required to complete the procedure. If this can be provided at the time of the attempted Abdominal Tubectomy can be completed. If not, abdomen should be closed, and the client should be informed of a failed procedure and referred to a centre where general anaesthesia is available.

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TWELVE

PROVIDING QUALITY ABDOMINAL TUBECTOMY SERVICES

BACKGROUND

Provision of good quality care is the crux of the RCH program. Every individual desires good quality of care when seeking health services. Good quality of care ensures satisfied clients, who in turn come back for services if they are satisfied. Therefore, provision of good quality care by health workers will determine the overall success of the program.

SETTING STANDARDS FOR QUALITY OF CARE IN VOLUNTARY STERILISATION SERVICES

- Three steps to ensure Quality services are:
  1. Setting Standards
  2. Assessing Quality of Services
  3. Ensuring Quality of Services

STEP 1: SETTING STANDARDS

The **first step** for service providers and managers concerned with improving client satisfaction and increasing acceptance of voluntary sterilisation is to define the quality of care they would like to provide within their specific service delivery program.

There are several key aspects of service delivery which contribute to client satisfaction. Setting standards of care in these areas helps clinicians and managers assess and improve the quality of services being offered.

- **Choice of contraceptives** refers to the variety of contraceptive methods available to an individual/couple. Service providers should have the knowledge and skills required to offer several family planning methods in order to provide the one most appropriate for each client's need. A client who is given the freedom to choose the method she/he wants to use without any persuasion from others, is more likely to continue using family planning regularly.

- **Information given to clients** refers to information that enables clients to choose and use a contraceptive method with satisfaction and provides a good understanding of the method. This information should be part of the counselling process (see **Chapter 2**) and includes how the methods work, precautions for use, benefits and limitations, how to use the method selected and any potential side effects. In the case of Abdominal Tubectomy, the client should be made aware of the sterilisation procedure and that the method is permanent. When this task is performed appropriately, clients should for instance be able, to correctly explain (and use) the method chosen.

- **Client-provider interaction** refers to the way clients are treated by the providers. Clients who are treated with dignity, courtesy, gentleness and warmth tend to relax with a provider and would be more inclined to volunteer as well as receive information relevant to family planning. When a provider instills confidence and trust, a client is more likely to willingly consider all options and discuss any personal concerns with the provider (see **Chapter 2**).

- **Technical competence** refers to the level of the skills of providers, their observance of protocols (written descriptions of steps to be followed during service provision) and use of recommended infection prevention practices in delivering family planning services. Clinical tasks required for the provision of Abdominal Tubectomy services are described in **Chapters 4 through 10**.

- **Continuity of care** in Abdominal Tubectomy service ensures that the clients receive post-operative care and can have any complications treated (see **Chapters 10 and 11**). The service provider must ensure that the client knows when to come back for a follow-up visit.

- **Appropriateness and acceptability of services** refers to providing accessible and acceptable healthcare that supports the reproductive health needs of clients.

STEP 2: ASSESSING QUALITY OF SERVICES

The second step in the quality of care process is assessing whether clients are receiving standard care. Quality assessment involves gathering data to determine the level of achievement of standards set by the clinic (Donabedian 1988; Kumar, Jain and Bruce 1989). For example, this assessment process can identify deficiencies in service provision, which in turn will determine the steps required to improve the overall quality of services.

The assessment process includes: determining the quality of service issues, specifying the indicators of quality, specifying the data that should be collected to measure the indicators, and identifying strategies for collecting and processing the data.

There are many sources from which data for monitoring quality can be obtained. The most common sources include:

- observation of clinic services (e.g. Abdominal Tubectomy procedure),
- review of client records,
- data retrieved from clinic logs which show patterns of use, contraceptive mix or
- qualities of service provided (e.g., minilap acceptors),
- client interviews, and
- self-assessment by clinic staff.

Using a quality of care framework should focus on the **rights of the clients** and the **needs of the provider** the service centre staff should regularly review their efforts to improve the quality of care provided to the client (**Table 12-1**). These efforts should involve periodic assessments of elements of quality of care. This process should involve the entire service delivery team and be an ongoing activity.

Table 12-1. Rights of the Clients, Needs of the Provider

Quality Services

Clients have the right to:

Clear information
Access to services
Their choice of family planning method
Safe services
Privacy and confidentiality
Dignity, comfort, and free expression of opinion
Continuous supplies (in the case of temporary methods)

Providers have a need for:

Good supplies, equipment and working environment
Good management and supervision
Clear information and training

Adapted from Huezo and Diaz 1993

Examples of 'how to' assess each of the quality of care indicators are listed below.

Client's Right to Information

- Does *all* staff know how to advise a potential family planning client about obtaining information and services? Can all the staff answer the following questions:
  - Where is the family planning clinic?
  - What times are services available?
  - What methods are available?
- Are clients provided with information that will help them select a method suitable for their needs? For example, are they told:
  - About methods that provide temporary protection from pregnancy
  - About method's effectiveness
  - How methods work
  - About potential side effects or health benefits related to the use of specific contraceptive methods
  - About methods that provide protection against STIs, including HIV/AIDS
  - About health benefits other than those directly related to contraception
- When a client chooses Abdominal Tubectomy as a method, does staff explain (in addition to the items listed in above question):
  - The procedure that will be performed
  - The method is a permanent form of contraception
  - Potential complications or risks if any

- The follow-up needed
- That Abdominal Tubectomy does not provide protection against STIs
- Does staff ask clients whether they understand the information they receive and whether they have questions?
- Does staff ask clients to repeat key information about their selected method to be sure they have understood?

Clients' Right to Access

- Are the times of family planning and other reproductive health services suitable to all potential clients? What about other costs, such as transportation to your facility?
- Are signs for family planning and other reproductive health services prominently displayed throughout your facility?
- Can providers communicate with potential clients of all language groups in this area?

Clients' Right to Choice

- Does your facility offer a range of contraceptive choices that meet client's needs? Do you have both temporary and permanent contraceptive methods?
- If some methods are not available at your facility, does staff know how and where to refer clients for these services? Do they do so?
- Are clients offered a full range of methods appropriate to their reproductive intentions, breastfeeding status, post-abortion status, and personal life, including their sexuality?
- Do all new clients receive counselling to help them select the method that will best meet their needs?

Clients' Right to Safety

General Safety, Screening, and Follow-up

- Does staff feel they have sufficient guidance, updates, and backup to provide safe services?
- Is the right equipment available to provide services efficiently and safely?
- Are staff well informed about the potential health benefits and contraindications for the different methods?
- Are clients informed about the warning signs of potential complications? Are they told to seek medical attention or return to the facility if these symptoms occur?

Infection Prevention

- Are written infection-prevention guidelines, charts, posters, leaflets, and handbooks available for the staff? Does the staff understand and follow the guidelines for protecting themselves and others during their work?
- After the procedure, are the instruments and gloves placed in 0.5% chlorine solution for 10 minutes for decontamination before further processing? Does the staff have enough plastic buckets, basins, and bleach to ensure that chlorine solution is always available where it is needed?

- Are soiled surfaces (examination couches, operating tables, etc.) wiped with 0.5% chlorine bleach solution after each procedure?
- Is contaminated waste disposed off in a safe way (for example, burning or burying)?

Method

- Does the staff fully understand and follow infection prevention techniques?
- Does the staff follow specific guidelines for screening Abdominal Tubectomy clients? Does the staff conduct an assessment to rule out conditions that are likely to increase the risks associated with surgery? Does the staff conduct an assessment of risk for infections (from reproductive tract infections or from incomplete abortion) and a physical exam for each client? Does the staff feel competent to do the screening?
- During the procedure is the Babcock's forceps used appropriately to catch the tubes?
- Are bimanual and speculum exams done during screening?

Clients' Right to Privacy and Confidentiality

- Does your facility have a private space where clients will not be observed or overheard during family planning counselling?
- Do clients have privacy during examinations?
- Does the staff respect client confidentiality by not discussing a client except to get advice from other clinic personnel?

Clients' Right to Dignity, Opinion and Comfort

- Are the women and men who come to your facility treated the way you would want to be treated?
- Does the staff encourage clients to ask questions?
- Does the staff respect clients' opinions?
- Does the staff perform physical examination and other procedures with the client's dignity and modesty in mind? Is the client's comfort addressed during physical exams?
- Do you think clients' waiting times for services are reasonable?

Clients' Right to Continuity

- Does the facility have enough family planning supplies?
- If a client wishes to discontinue a particular contraceptive method (for a reason other than that she wants to have a child), is the client counseled about alternative methods?

Staff Need for Good Supplies and Site Infrastructure

- Does the staff feel that the system of supplies enables them to provide quality services for clients?
- Does the staff feel that supplies of informational materials enable them to provide quality services for clients?

- Does the staff feel that their work environment is clean, well ventilated, comfortable, and well equipped enough for them to carry out their duties?
- Is all equipment in good condition? If not, do staff know how to obtain replacement equipment?
- Does the staff always have enough buckets, bowls, and chlorine to ensure that a chlorine solution is always available in all the places needed?

Staff Need for Good Management and Supervision

- Does the staff at this facility follow guidelines set by the ministry of health?
- Does management provide constructive feedback to all staff on family planning issues? Is management supportive, encouraging, and respectful of staff?
- Does the support that your facility gets from the headquarters organisation always meet the needs?
- Are all clients' family planning records completed properly? Is all essential information included?
- Does the staff ever interview clients to measure their satisfaction with family planning services?

Organisation of Services

- Do clients perceive that:
  - Privacy for counselling is acceptable
  - Privacy for examination is acceptable
  - Waiting time is acceptable
  - Time with provider is acceptable
  - Hours/days are convenient
  - Staff is appropriate in terms of gender, ethnic group and age

Outcomes

- Are data collected for:
  - Number of new acceptors
  - Complication rate for specific methods
  - Continuation rate (for temporary methods)
  - New clients recommended by other users
  - Clients achieving reproductive goals

ENSURING QUALITY OF SERVICES

The third and final step in the quality of care process involves quality improvement approaches. Traditionally the quality improvement process has involved service providers and managers reviewing data obtained during the assessment in order to identify the problems and explore possible solutions (reactive process). Recently, the purpose of quality improvement

has been expanded to ensure that gradual and continuous improvements are made in all clinic functions, not just problem areas (proactive process).

The quality improvement approach described here is based on the following principles:

- Customer mindset
- Involvement and ownership
- Emphasis on processes/systems
- Cost consciousness and efficiency
- Continuous quality improvement

It is based on the belief that staff members at any level can make valuable suggestions about ways to improve services. It recognises that many problems result from poorly designed or implemented systems and processes, rather than individuals.

Improving the Quality of Care

In working to improve the quality of care provided, it is important for the clinic staff to first state the problems they would like to address and then identify the steps to be followed to solve them. To achieve this objective, some (or all) of the following questions need to be answered by clinic staff.

- **Is the clinic adequately prepared and organised to offer a given standard of care?**

  Example: Review existing resources (supplies and equipment), client-flow, staff training and allocation of responsibilities.

- **What is the process involved in providing a given standard of care?**

  Example: Review steps required and used to provide a specific service (e.g., Abdominal Tubectomy procedure).

- **What part(s) of the service delivery process is not being satisfactorily performed?**

  Example: Identify step(s) which is not properly performed (e.g., screening the client for conditions that might increase risk).

- **What are the causes of the problem?**

  Example: Identify causes that may explain the problem identified.

- **What can be done to improve the process?**

  Example: Suggest solutions that can be implemented at clinic and managerial levels (e.g., provision of recommended infection prevention supplies).

- **Who should be involved in planning and implementing the solution?**

  Example: Assign responsibilities for monitoring improvements (e.g., role of each staff member in improving recommended infection prevention practices).

- **What indicators of success can be used to assess performance?**

  Example: Use indicators already defined in the statement of standard to monitor progress (e.g., reduction in the number of infections or complications following Abdominal Tubectomy).

Table 12-1 provides an illustrative example of how quality assurance could be applied to the infection prevention standard in a clinic-based program providing voluntary sterilisation services.

Problems generally occur because a system is not working efficiently. By reducing the amount of time and resources staff spend on resolving the same problems again and again, the quality of services can be improved. Using this approach can help improve conditions at the site for both the clients and the service providers. When this happens, both client level of satisfaction and job satisfaction increase.

Table 12-2. Steps in Family Planning Quality Assurance Process

STEPS	EXAMPLE
STEP 1: Establish a standard for the clinic based on what is valued or important in client care. The standard is a statement of: • what will be done, • by which staff, and • to achieve what results.	**Standard:** Recommended infection prevention (IP) practices will be followed by providers during Abdominal Tubectomy to minimize risks to clients and clinic personnel.
Assess whether the clinic is achieving the stated standard.	Observe Abdominal Tubectomy service provision using a checklist. Assess competency of clinicians and support staff in following recommended IP practices.
Review whether the clinic is adequately prepared to meet the standard.	Staff trained in IP practices? Adequate space and equipment to process instruments? Selection and use of gloves? Antiseptics? Client and staff traffic flow reduce risk of infection? IP supplies and equipment available?
STEP 2: Review the process involved in meeting the standard.	**Process:** Decontamination, cleaning, sterilisation or HLD **Findings:** Standard is not met because cleaning is not performed satisfactorily.
STEP 3: Identify causes of problem(s) and suggest solution(s).	**Possible Causes:** Lack of knowledge of how to do cleaning and lack of consumable supplies (e.g., disinfectants or gloves) **Corrective Measures:** Staff should be given on-the-job training and provided with necessary supplies.

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MOBILE OUTREACH SERVICES

BACKGROUND

This section gives the standards for mobile sterilisation services. Every attempt should be made to ensure that mobile services are at par with those available at the static centres. The followings are the important areas where standards should be maintained in the mobile sterilisation services:

FACILITY REQUIREMENTS

1. Mobile sterilisation services should be offered in an institution (PHC or CHC) where either an OT facility or a clean, separate room is available for conducting operative work. Under no circumstances should mobile sterilisation services be conducted in a school building or *panchayat bhavan* or any other such building.
2. The facility should be well-ventilated and clean.
3. Running water must be available.
4. Electricity supply with a standby generator and other light source must be available.
5. Adequate space must be provided for
   a) Reception and registration
   b) Waiting area for persons accompanying the clients
   c) Counselling room
   d) Pre-operative room, to be used for part preparation, changing of client's street clothes into clean OT clothes, conducting minor laboratory tests (Hb percent and urine examination)
   e) Pre-operative waiting area for clients
   f) Ante-room to OT, that should be used for hand-washing, scrubbing, instrument-washing and processing (HLD/sterilisation)
   g) Operation theatre: This should be isolated and fitted with fly-proof netting. The OT should be large enough to allow the operating staff to move freely, and to accommodate all the necessary equipment. Lighting should be adequate and the room should be easy to enter and leave in case of an emergency. The room should be cleaned and washed thoroughly a day before the sterilisation operation takes place and kept locked when not in use.
   h) Post-operative recovery room: It must be spacious and well-ventilated. The number of beds will be determined by the available space. The room should be clean, and be situated adjacent to/near the O.T.

STAFFING AND RESPONSIBILITIES

1. The mobile team should have – Surgeon (1), OT Nurse (1) and OT Assistant (1). The local service site should provide – Medical Officer (1), Nurse / ANM (1), OT Attendant (1), Staff for registration of clients (1) and staff for maintaining proper client records (1).

2. Co-ordination with and utilisation of staff from the area is desirable for appropriate IEC activities, monitoring and smooth running of the mobile services.

3. Primary responsibility for organising mobile sterilisation services will be with the staff of the block PHC/CHC.

4. Surgery will be done by the operating team coming from static sterilisation centres either from the district or the state. The surgical team must be experienced, well-trained in the procedure and fully equipped with staff and required material.

5. The mobile operating team will have the responsibility for final selection of appropriate client, including speculum and vaginal examination (in case of female sterilisation), verification of informed consent, assurance of quality of care, including cleanliness and infection prevention, surgery and post-operative recovery.

6. No clinical training shall be conducted in mobile sterilisation programme. In exceptional situations, training can be permitted in mobile services, for example, when a new technique needs to be introduced, (such as no scalpel vasectomy [NSV]). In this situation, the complete responsibility would lie with the clinical trainer.

TIMING AND NUMBER OF CASES

Mobile sterilisation services should preferably be conducted between 11 a.m. and 3 p.m. so that the team can have at least three to four hours of operating time. This will also ensure sufficient time for post-operative observation as well as allow the team and clients to reach their destination by the end of the day.

During mobile sterilisation services, the optimum number of cases to be operated per day by one mobile surgical team is twenty.

INSTRUMENTS/EQUIPMENT

For vasectomy and NSV, five sets of instruments, and for Abdominal Tubectomy and laparoscopic tubal ligation, at least two sets of instruments/equipment should be carried by the mobile team. Annexures II-IV give the list of equipment in each set.

EMERGENCY PREPAREDNESS

1. Staff Preparation

All staff of the mobile team and operating centre must be skilled in administration of intravenous fluids and drugs, external cardiac massage and other resuscitative measures. They must be familiar with the use of ambubag. They must know which drugs are to be used, how to administer them and their expected actions.

2. Emergency Equipment and Supplies

The equipment listed below must be available for emergency use in the operating room and recovery area. All emergency equipment, must be immediately available and should be in good condition.

i) Stethoscope
ii) B.P. instruments
iii) Oral airway (two sizes)
iv) Nasal airways (two sizes)
v) Suction machine with tubing and two traps
vi) Ambu bag
vii) Face mask and tubing and oxygen nipple
viii) Oxygen cylinder with reducing valve and flow meter
ix) Blanket
x) Gauze pieces
xi) Kidney tray
xii) Torch (flashlight)
xiii) Syringes and needles, I.V. canula, including butterfly sets
xiv) Intravenous infusion sets and fluids
xv) Adhesive strapping
xvi) Sterile laparotomy instruments

3. Emergency Drugs

The drugs listed below must be made available in the operating room and recovery area. The staff needs to be well-informed about their availability, use, dose, strength and route of administration as well as signs of toxicity and treatment for overdose. The following injectable preparations of the emergency drugs should be available:

i) Adrenaline
ii) Atropine Sulphate
iii) Corticosteroids (Dexamethasone or Hydrocortisone)
iv) Physostigmine
v) Aminophylline
vi) Antihistamine (Phenaragan, Avil)
vii) Diazepam
viii) Pentazocine
ix) Sodium Bicarbonate (7.5%)
x) Calcicum Gluconate (10%)
xi) Frusemide
xii) Dopamine
xiii) Dextrose 5% in water
xiv) Dextrose 5% in normal saline
xv) Glucose 25%
xvi) Ringer Lactate Solution

4. Back-up Referral Facility

A higher centre/district hospital facility must be identified and transport made, available to transfer clients to the referral centres in case of any complications which can not be managed during mobile sterilisation service.

5. Counselling/Informed Consent/Eligibility Criteria

The standards for counselling established in Chapter 2, are adhered to for mobile services also. Counselling is the responsibility of the ANM/Nurse/Doctor of centre organising the service. This can be done prior to or during the day of the sterilisation procedure. The final assessment of the clients' eligibility and their informed decision for sterilisation is the responsibility of the operating team staff.

6. Clinical Assessment

Pre-operative assessment of the patient's medical status is extremely important to ensure that high-risk clients are not operated on in mobile/camp settings. Preliminary assessment and selection of clients will be the responsibility of the Medical Officer of the centre where services are being offered. Final selection of clients, including vaginal examination (in case of female sterilisation) will be done by the operating doctor of the mobile team.

7. Asepsis Standards in Mobile Sterilisation Services

All steps of infection prevention, as mentioned in an earlier chapter (Chapter 6) should be observed. Salient features are given below:

7.1 The client must change into clean OT clothing prior to surgery.

7.2 The OT staff and the operating team must change into clean OT attire.

7.3 Standard OT gowns, masks, caps and gloves must be used. A different set of gloves should be used for each case.

7.4 All OT staff must wash their hands before and after the procedure and after handling instruments/equipment.

7.5 The operating doctor and assistant must follow for proper surgical scrubbing technique before the procedure, and after 5 cases or one hour, whichever is earlier, provided they do not touch anything in between the cases.

7.6 Sterilised or HLD equipment/instruments/linens must be used for each client during the sterilisation operation.

7.7 All used instruments and gloves must be decontaminated in 0.5% chlorine solution for 10 minutes (freshly prepared with water and bleaching powder before starting the sterilisation procedure).

7.8 All instruments/equipment must be cleaned and followed by HLD/sterili-sation, prior to reuse in another client.

7.9 Skin preparation and surgical draping

a) The operative site should be prepared immediately, pre-operatively, with antiseptic solution. The one preferred is povidone iodine (Betadine). If it is not available, chlorhexidine gluconate (Savlon) and 60 to 70% solution of ethyl alcohol can be used.

b) Antiseptic solutions should be liberally applied at least two times on and around the operative site, which should be thoroughly cleaned by gentle scrubbing.

c) The antiseptic solution should be applied in a circular motion, beginning at the site of the incision, and several inches around it. This inhibits immediate recontamination of the site with local skin bacteria.

d) After preparing the operative site, the area should be covered with a sterile drape.

8. Anaesthesia

a) Only local anaesthesia will be offered in mobile settings.

b) An anaesthetist should preferably accompany the mobile team, especially for tubectomies performed in mobile settings.

9. Client Discharge after Mobile Services

a) The surgeon or member of the surgical team must see all operated clients at least once during the post-operative period before he/she leaves the centre.

b) All operated clients must be examined before discharge, by the medical officer of the centre where mobile sterilisation services have been organised.

c) Both verbal and written post-operative instructions and follow-up schedule must be provided to the client before discharge. These should be in the client's local language.

10. Follow-up

Follow-up services will be provided by the health worker of the respective area and medical officer of the nearest PHC/CHC as per schedule of sterilisation.

REFERENCES

India: Ministry of Health and Family Welfare. Department of Health and Family Welfare. 1999. *Standards for Male and Female Sterilisation*. New Delhi.

APPENDIX A

EMERGENCY PREPAREDNESS[1]

STAFF PREPARATION FOR EMERGENCIES

All staff must be trained to effectively manage emergencies. Staff must be skilled in administration of intravenous fluids and drugs. They must understand which drugs may be used, how to administer them and their expected actions. They must be familiar with the use of all emergency equipment and must check all such equipment before each operating session. The person monitoring the client in the operating room and the recovery room must be capable of detecting early signs of complications and be able to take initial emergency action. At least one member of the surgical team must know how to administer cardiopulmonary resuscitation. The emergency care supplies and drugs must be kept in an accessible place known to the staff members.

EMERGENCY EQUIPMENT

The equipment listed below must be available for emergency use in the operating room and recovery area. All emergency equipment must be immediately available, ready for use and in good condition. A battery–operated light source should be available for back-up or focused illumination of the operative site.

(i) Stethoscope
(ii) B.P. Instruments
(iii) Oral airways (two sizes)
(iv) Nasal airways (two sizes)
(v) Suction machine with tubing and two traps
(vi) Ambu bag
(vii) Face mask and tubing and oxygen nipple
(viii) Oxygen cylinder with reducing valve and flow meter
(ix) Blanket
(x) Gauze pieces
(xi) Kidney tray
(xii) Torch (flashlight)
(xiii) Syringes and needles, including butterfly sets, IV Cannula
(xiv) Intravenous infusion sets and fluids
(xv) Adhesive strapping
(xvi) Sterile laparotomy instruments

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[1] *Adapted from*: Department of Family Welfare, Ministry of Health and Family Welfare, Government of India. 1999. *Standards for Male and Female Sterilisation* . Ministry of Health and Family Welfare: New Delhi.

EMERGENCY DRUGS

The drugs listed below must be available in the operating room and recovery area. The staff should be well-informed about the drugs, their use, dose, strength and route of administration, signs of toxicity and treatment of overdose. The following emergency drugs are recommended.

i) Adrenaline
ii) Atropine sulphate
iii) Corticosteroids (Dexamethasone or Hydrocortisone)
iv) Physostigmine
v) Aminophylline
vi) Diazepam
vii) Pentazocine
viii) Sodium Bicarbonate (7.5%)
ix) Calcium Chloride
x) Frusemide
xi) Dopamine
xii) Dextrose 5% in water
xiii) Dextrose 5% in normal saline
xiv) Glucose 25%
xv) Ringer Lactate Solution

HOSPITAL BACKUP

For clinics providing sterilisation operation with limited capability for handling emergencies and other complications, it is important to establish a working relationship with nearby back-up medical facilities in the area. This will help clients receive reliable care. The local back-up facilities must include the supplies, equipment and trained staff required to handle complications.

REFERENCE

India: Ministry of Health and Family Welfare, Department of Health and Family Welfare. 1999. *Standards for Male and Female Sterilisation*. New Delhi

APPLICATION AND INFORMED CONSENT FOR STERILISATION OPERATION[1]

Name of Client Shri/Smt._____

Address of Client Shri_____

_____

Spouse's name Shri/Smt._____

Father's name Shri _____

Operating centre _____

Dear Doctor,

Please arrange to have me sterilised. My age is _____ and my spouse's age is _____.

I am/was married. I/We have _____ male and _____ female living children. The age of the youngest child is _____ years.

- The decision to undergo the sterilisation operation has been taken independently by me without any outside pressure, inducement, or force.
- I am aware that other methods of contraception are available to me which have been properly explained.
- The eligibility criteria for the operation have been explained to me, and I affirm that I am eligible to undergo the operation according to the criteria.
- I know that for all practical purposes this operation is permanent and that, after the operation I will be unable to have any more children.
- I also know that there are some chances of failure of the operation, for which the hospital/institution and operating doctor will not be held responsible by me or my relatives or any other person whomsoever. I will report to the centre/doctor if there is any missed menstrual cycle of mine/my spouse within two weeks.
- My spouse has not been sterilised previously.
- I am aware that I have the option to decide against the sterilisation procedure at any time without sacrificing my rights to other reproductive health services.
- I am aware that I am undergoing an operation which carries an element of risk.
- I agree to come for follow-up to the centre/doctor as instructed, failing which I shall be responsible for consequences, if any.
- I agree to undergo the operation under any type of anesthesia which the doctors think suitable for me and to be given other medicines as considered appropriate by the doctors concerned.

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[1] *Adapted from*: Department of Family Welfare, Ministry of Health and Family Welfare, Government of India. 1999. *Standards for Male and Female Sterilisation*. Ministry of Health and Family Welfare: New Delhi.

The above information has been read/read out and explained to me, in my own language.

Signature, Name & Address of Witness

Signature of Client

* Witness can be any person not associated with the Service Centre.
• Applicable to the cases where the client can not read and the above information is read out.

1. The client has been fully counselled about various available methods of contraception and the above method.

Signature of Counsellor**
Name and Full Address

2. I certify that I have satisfied myself and Shri/Smt._____ is within the eligible age-group and is mentally and medically fit for a sterilisation operation. There is no evidence that he/she has undergone a sterilisation operation previously). I have explained to the client that this form has the authority of a legal document.

Signature of Operating Doctor
(Name and Address)

Signature of Medical Officer
(Name and Address)

DENIAL OF STERILISATION

I certify that Shri/Smt. _____ is not a suitable client for sterilisation for the following reasons:

1.

2.

He/She has been provided the following alternative method of contraception.

Signature of Counsellor** or
Doctor making decision
(Name and Address)

** Counsellor can be any health personnel including doctor.

APPLICATION AND INFORMED CONSENT FOR RE-STERILISATION OPERATION[2]

Name of Client Shri/Smt. _____

Address of Client Shri _____

_____

Spouse's name Shri/Smt. _____

Father's name Shri _____

Operating centre _____

Dear Doctor,

Please arrange to have me re-sterilised/sterilised as my/my spouse's previous operation has failed. My age is _____ and my spouse's age is _____.

I am/was married and my spouse is alive. I/We have _____ male and _____ female living children. The age of the youngest child is _____ years.

- The decision to undergo the re-sterilisation /sterilisation operation has been taken independently by me without any outside pressure, inducement, or force.
- I am aware that other methods of contraception are available to me which have been properly explained.
- The eligibility criteria for the operation have been explained to me, and I affirm that I am eligible to undergo the operation according to the criteria.
- I know that for all practical purposes this operation is permanent and that, after the operation I will be unable to have any more children.
- I also know that there are still some chances of failure of the operation, for which the hospital/institution and operating doctor will not be held responsible by me or my relatives or any other person whomsoever. I will report to the centre/doctor if there is any missed menstrual cycle of mine/my spouse within two weeks.
- My spouse has not been sterilised previously.
- I am aware that I have the option to decide against the re-sterilisation /sterilisation procedure at any time without sacrificing my rights to other reproductive health services.
- I am aware that I am undergoing an operation which carries an element of risk.
- I agree to come for follow-up to the centre/doctor as instructed, failing which I shall be responsible for consequences, if any.
- I agree to undergo the operation under any type of anesthesia which the doctors think suitable for me and to be given other medicines as considered appropriate by the doctors concerned.

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[2] *Adapted from*: Department of Family Welfare, Ministry of Health and Family Welfare, Government of India. 1999. *Standards for Male and Female Sterilisation*. Ministry of Health and Family Welfare: New Delhi.

- **The above information has been read/read out and explained to me, in my own language.**

Signature, Name & Address of Witness*

Signature of Client

* Witness can be any person not associated with the Service Centre.
• Applicable to the cases where the client can not read and the above information is read out.

1. The client has been fully counselled about various available methods of contraception and the above method.

Signature of Counsellor**
Name and Full Address

2. I certify that I have satisfied myself and Shri/Smt._____ is within the eligible age-group and is mentally and medically fit for a re-sterilisation/sterilisation operation. I have explained to the client that this form has the authority of a legal document.

Signature of Operating Doctor
(Name and Address)

Signature of Medical Officer
(Name and Address)

DENIAL OF STERILISATION

I certify that Shri/Smt. _____ is not a suitable client for sterilisation for the following reasons:

1.

2.

He/She has been provided the following alternative method of contraception.

Signature of Counsellor** or
Doctor making decision
(Name and Address)

** Counsellor can be any health personnel including doctor.

APPENDIX C

INFECTION PREVENTION PROCESSES FOR SURGICAL INSTRUMENTS AND OTHER ITEMS[1]

The **three basic steps** for processing instruments, gloves and other items used for Abdominal Tubectomy are:

- decontamination,
- cleaning, and
- sterilisation or high-level disinfection (HLD).

Details for the safe reuse of instruments, gloves and other items are provided in this appendix. (See **Appendix F** for information on processing surgical gloves and **Appendix G** for information on processing needles and syringes and linens).

DECONTAMINATION

Decontamination is the first step in handling soiled surgical instruments and other items. It is important to decontaminate instruments and items that may have been in contact with blood or body fluids.

Immediately after use, place instruments and other items in a 0.5% chlorine solution for 10 minutes. This step rapidly inactivates HBV and HIV and makes items safer to handle by personnel who clean them.

MAKING DILUTE CHLORINE SOLUTIONS

The World Health Organization (WHO) recommends **0.5% chlorine solution** for decontaminating instruments before cleaning. For HLD 0.5% chlorine solution is satisfactory.

The general formula for making a dilute solution from a commercial preparation of **any** concentration is shown in **Figure C-1**. The formula for making a dilute solution from a powder of any percentage of chlorine available is listed in **Figure C-2**.

In India, 0.5% chlorine solution is made by dissolving 3 teaspoons (15 gm) of 30% bleaching powder in 1 litre of water.

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[1] *Adapted from*: Tietjen L, W Cronin and N McIntosh. 1992. *Infection Prevention for Family Planning Service Programs: A Problem-Solving Reference Manual.* Essential Medical Information Systems, Inc.: Durant, Oklahoma.

Table C-1. Formula for Making Dilute Chlorine Solution from Concentrated Solution

$$\textit{Total Parts (TP) water} = \frac{\textit{\% Concentrate}}{\textit{\% Dilute}} - 1$$

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

1. Calculate TP water:

$$\frac{5.0\%}{0.5\%} - 1 = 10 - 1 = 9$$

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

Table C-2. Formula for Making Dilute Chlorine Solution from Dry Powder

$$\textit{Grams / Litre} = \frac{\textit{\% Dilute}}{\textit{\% Concentrate}} \times 100$$

Example: Make a dilute chlorine solution (0.5%) from a dry powder (35%).

1. Calculate grams/litre:

$$\frac{0.5\%}{35\%} \times 1000 = 14.2\ g/l$$

2. Add 14.2 grams (3 level teaspoons) to 1 litre of water.

After decontamination, instruments should be rinsed immediately with cool water to prevent corrosion and to remove visible organic material before cleaning thoroughly. Personnel should wear gloves while handling soiled instruments. Inexpensive, thick rubber gloves work well for this.

Surfaces (especially procedure tables) that may have come in contact with body fluids also should be decontaminated. Wiping with a suitable disinfectant such as a 0.5% chlorine solution before reuse, when visibly contaminated or at least daily, is an easy-to-do, inexpensive way to decontaminate large surfaces.

CLEANING

Cleaning is a crucial step in providing safe, infection-free equipment and instruments. A thorough cleaning with water and liquid soap or detergent physically removes organic material such as blood and body fluids. Dried organic material can trap micro-organisms in a residue that protects them against sterilisation or HLD. Organic matter also can partially inactivate disinfectants, rendering them less effective (Porter 1987).

Thick rubber gloves should be worn while cleaning instruments and equipment. Discard gloves if torn or damaged; otherwise, clean and leave to dry at the end of the day for use the following day. In addition to wearing gloves, the service provider must take extreme care to prevent needle sticks or cuts.

If available, glasses, plastic visors or goggles should be worn while cleaning instruments and other items. This protects staff from splashing contaminated water into their eyes.

Clean instruments with a brush (old toothbrushes work well) and soapy water. Give special attention to instruments with teeth, joints or screws where organic material can collect. After cleaning, rinse items thoroughly with water to remove detergent residue which can interfere with chemical disinfection.

If either hypodermic syringes (or needles and syringes) are being reused, disassemble only after decontaminating and then cleaning with soapy water, paying special attention to the hub area. Rinse at least three times with clean water, expelling the water through the needle into another container so as not to contaminate the rinse water, and dry.

See **Appendix G** for detailed information on decontaminating and cleaning instruments, needles and syringes and linens and **Appendix F** for steps in processing surgical gloves.

STERILISATION

Instruments and other items such as needles or scalpels that come into direct contact with tissues beneath the skin which are normally sterile, should be sterilised after first being decontaminated and thoroughly cleaned, rinsed and dried. **The sterilisation process destroys all micro-organisms, including bacterial endospores.** Bacterial endospores are particularly difficult to kill because of their tough coating. (Bacteria that form endospores include *clostridia tetani*, which causes tetanus.) Sterilisation can be achieved by autoclaving (high-pressure steam) or by using chemicals ('cold sterilisation').

STEAM STERILISATION

High-pressure saturated steam (autoclaving) is the most readily available method used for sterilisation. Steam sterilisation generally is the method of choice for instruments and other items used in family planning and health care facilities. Where electricity is a problem, instruments can be sterilised in a non electric steam autoclave using kerosene as a heat source. The standard conditions for sterilisation by steam are shown in the following box.

Remember: When instruments and equipment are steam sterilised, it is essential that steam reach all surfaces; autoclaving closed containers will sterilise only the outside of the containers!

Standard Conditions for Steam Sterilisation

Steam sterilisation : Temperature should be 121°C (250°F); pressure should be 106 kPa (15 lb/in^2); 20 minutes for unwrapped items; 30 minutes for wrapped items. Allow all items to dry before removing.

Note: Pressure settings (kPa or lbs/in^2) may vary slightly depending on steriliser used. Whenever possible follow manufacturer's recommendations.

Sterile instruments should be used immediately unless they:

- have been wrapped in a double layer of muslin, paper or other appropriate material prior to steam sterilisation ; or
- can be stored in a dry sterile container with a tight-fitting lid.

The material used for wrapping instruments must be porous enough to let steam through but tightly woven enough to protect against dust particles and micro-organisms.

Wrapped sterile instruments have a shelf life of up to one week, **but only if kept dry and intact** (Perkins 1983). All packs and sterile containers should be labeled with an expiry date.

CHEMICAL STERILISATION

An alternative to steam sterilisation is chemical sterilisation by soaking for 8 to 10 hours in a glutaraldehyde. Glutaraldehydes, such as Cidex, often are in short supply and expensive, but it is the only practical liquid sterilant usable for instruments, such as laparoscopes, which cannot be heated. Because glutaraldehydes require special handling and leave a residue on treated instruments, rinsing with **sterile** water (which can be prepared only by autoclaving) is preferable. (Because boiling does not inactivate some endospores reliably, using boiled water can contaminate sterile instruments).

Although formaldehyde is less expensive than glutaraldehyde, it is more irritating to the skin, eyes and respiratory tract (**Table C-3**). When using either formaldehyde or glutaraldehyde, gloves should be worn, eyes should be protected, exposure time limited and both chemicals used only in a well-ventilated area.

Note: Chemical sterilisation of needles and syringes is **not** recommended because chemical residues may remain even with repeated rinsing with sterile water. These residues may interfere with the actions of the drug being injected.

HIGH-LEVEL DISINFECTION

When sterilisation equipment is either not available or not suitable, HLD is the **only** acceptable alternative. High-level disinfection destroys all micro-organisms, including viruses causing Hepatitis B and AIDS, but **does not reliably kill all bacterial endospores**. High-level disinfection can be achieved by boiling in water or soaking in chemical disinfectants such as 0.5% chlorine, 2% glutaraldehyde.

Because boiling require only inexpensive equipment, which usually is readily available, boiling is the preferred method for small clinics or those located in remote areas. Regardless of the method selected, however, HLD is effective **only** when instruments and other items first are decontaminated and then thoroughly cleaned and rinsed **before** HLD.

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 (Favero 1985).

HIGH-LEVEL DISINFECTION BY BOILING

Open or take apart all instruments and other items. Submerge in water and cover pan. Boil for 20 minutes. Timing should begin when the water is boiling and all items should be totally under the water. Nothing should be added to the container after the water begins to boil. After boiling for 20 minutes, remove boiled items using high-level disinfected forceps, place in a high-level disinfected container and allow to cool and air dry.

Use instruments and other items immediately or leave in a covered, **dry** high-level disinfected container. (The container used for drying the instruments can be used for storage only if there is no water in the bottom of the container.) Store for up to 7 days.

Boiling Tips

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

HIGH-LEVEL DISINFECTION BY SOAKING IN A CHEMICAL SOLUTION

At present, only two chemicals are approved worldwide for use as high-level disinfectants:

- chlorine 0.5%
- glutaraldehyde 2%

Table C-3 provides guidelines for preparing and using these chemical disinfectants.

Note: Chemical HLD of needles and syringes is **not** recommended because chemical residues may remain even after repeated rinsing with sterile water. These residues may interfere with the actions of the medication being injected.

The major **advantages** and **disadvantages** of each disinfectant are described below.

- **Chlorine solutions** are fast acting, very effective against HBV and HIV, inexpensive and readily available.

A major disadvantage is that concentrated chlorine solutions (0.5%) can discolor and corrode metals. Stainless steel instruments, however, can be soaked safely in a 0.5% chlorine solution (using a plastic container) for up to 20 minutes. Discoloration is only a problem where calcium (not sodium) hypochlorite powders are used. (Wiping instruments with vinegar, which is weakly acidic, will quickly remove the discoloration.) Also, corrosion will **not** be a problem if items are rinsed with boiled water and dried **promptly**.

Because chlorine solutions break down rapidly and can lose their effectiveness, fresh solutions should be made at least daily or more often if the solution is visibly cloudy.

- **Glutaraldehydes**, which can be used for chemical sterilisation, are effective high-level disinfectants as well. Although less irritating than formaldehyde, they too should be used in well-ventilated areas following recommended precautions.

Remember: Both glutaraldehyde and formaldehyde solutions leave a residue; therefore, instruments must be rinsed thoroughly with boiled water after HLD to remove any residue and prevent skin irritation.

- **Hydrogen Peroxide**, (H_2O_2), which must be diluted to a 6% solution, often is available locally and is less expensive than other chemical disinfectants.

  WHO does **not** recommend using H_2O_2 in hot (tropical) climates because of its instability in the presence of heat and light.

Key Steps in Chemical High-Level Disinfection

- Decontaminate instruments that have been in contact with tissue beneath the skin which normally is sterile. Thoroughly clean and dry all instruments.
- Cover all items completely with correct dilution of high-level disinfectant which has been properly stored.
- Soak for 20 minutes.
- Remove using high-level disinfected forceps or wearing high-level disinfected gloves.
- Rinse well with boiled water and air dry.
- Use promptly or store for up to 1 week in a high-level disinfected, covered container.

  To prepare a high-level disinfected container, boil if small; if large, fill a plastic container with 0.5% chlorine solution and soak for 20 minutes. (The chlorine solution can be transferred to a plastic container and reused). Rinse the inside thoroughly with boiled water. Air dry before use.

STORAGE OF DISINFECTANTS

- Disinfectants should be stored in a cool, dark area.
- Never store chemicals in direct sunlight or in excessive heat (e.g., upper shelves in a tin-roofed building).

Table C-3. Preparing and Using Chemical Disinfectants

Chemicals for Sterilisation or High-Level Disinfection										
Disinfectant (common solution or brand)	**Effective Concentration**	**How to Dilute**	**Skin Irritant**	**Eye Irritant**	**Respiratory Irritant**	**Corrosive**	**Leaves Residue**	**Time Needed for HLD**	**Time Needed for Sterilisation**	**Activated Shelf Life[a,b]**
Chlorine	0.5%	**Dilution procedures vary[c]**	**Yes (with prolonged contact)**	Yes	Yes	**Yes[d]**	Yes	**20 minutes**	Do not use	**Change daily; sooner if cloudy**
Glutaral-dehyde (Cidex)	Varies (2 to 4%)	**Varies: read instructions on container**	Yes	**Yes vapors**	Yes	No	Yes	**20 minutes at 25°C[e]**	**10 hours for Cidex**	**Change every 14 days; sooner if cloudy**

[a] All chemical disinfectants are heat and light sensitive and must be stored appropriately.

[b] Always check manufacturer's instructions for when to discard.

[c] See **Figures C-1 and C-2** for instructions on preparing chlorine solutions.

[d] Corrosive with prolonged (> 20 minutes) contact and/or concentrations ≥ 0.5% if not immediately rinsed with boiled water.

[e] Different commercial preparations of Cidex and other glutaraldehydes are effective at lower temperatures (20°C) and for a longer activated shelf life.

Adapted from: Rutala 1993

PROCESSING USED CHEMICAL CONTAINERS

Glass containers may be washed with soap and water, rinsed, dried and reused. Alternatively, thoroughly rinse the container (at least two times) with water and dispose off by burying.

Plastic containers used for toxic substances such as glutaraldehydes or formaldehyde should be rinsed (at least two times) with water and disposed of by burning or burial.[2]

Note: Do not reuse plastic containers, which originally held these chemicals.

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. **They do not destroy bacteria, viruses or endospores reliably**. 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®)
- Chlorhexidine gluconate (e.g., Hibiscrub, Hibitane)
- Chlorhexidine gluconate and cetrimide in various concentrations (e.g., Savlon)
- Chlorinated lime and boric acid (e.g., Eusol®)
- Chloroxylenol (e.g., Dettol)
- Hexachlorophene (e.g., pHisoHex®) is not recommended for use as a disinfectant or antiseptic because it is readily absorbed through the skin and is neurotoxic.
- Mercury solutions (such as mercury laurel) cause birth defects and are too toxic to use as either disinfectants or antiseptics (Block 1991).

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

[2] To further prevent plastic containers from being reused, put a hole in each container before disposal so that it cannot be used to carry water or other liquids.

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APPENDIX D

SURGICAL HANDSCRUB

SUPPLIES

- Soap (plain) or antiseptic, which is preferred, as provided by the facility (Larson 1988)
- Running water
- Stick or brush for cleaning the fingernails (these items must be cleaned and preferably high-level disinfected, after each use)
- Soft brush or sponge for cleaning the skin (these items must cleaned and preferably high-level disinfected, after each use)
- Towels (sterile towels should be provided in the operating theatre)

PREPARATION

The operating doctor, scrub nurse or technician should wear a short-sleeved shirt or scrubsuit to perform this procedure because it involves scrubbing to the elbows (Sorensen and Luckman 1979).

Procedure	Rationale
1. Remove all jewellery.	1. Jewellery harbors micro-organisms and is difficult to clean.
2. Adjust water to comfortable temperature.	2. Comfort of operating doctor, scrub nurse or technician. Also, excessively hot water opens pores to bacteria. Warm water enhances action of the soap.
3. Holding hands above the level of the elbow, wet hands thoroughly. Apply soap and clean under each fingernail using the brush.	3. Water should flow from area of least contamination to most contamination. Soap can kill some micro-organisms.
4. Beginning at the fingertips, lather and wash with a soft brush or sponge, using a circular motion. Wash between all fingers. Move from fingertips to the elbow of one arm and repeat for the second arm.	4. Friction and lather raise micro-organisms. Wash from area of least contamination to area of most contamination.

5. Wash using a soft brush or sponge for three-to-five minutes (when using alcohol, pour or rub for two minutes).	5. Adequate time is required to inhibit or kill as many micro-organisms as possible.
6. Rinse each arm separately, fingertips first, holding hands above the level of elbows.	6. Do not let rinse water flow over clean area. Water should flow from area of least contamination to area of most contamination.
7. Using a separate towel for each hand, wipe from the fingertips to the elbow, and then discard the towel.	7. Do not contaminate clean hand by using soiled towel. During drying move from area of least contamination to area of most contamination.
8. **Before putting on sterile gloves** (and gown): hold hands above the level of the waist and do not touch anything.	8. Contact with contaminated object renders clean object contaminated. Area below the level of the waist is considered contaminated.
9. If scrubbed hands touch any dirty object during the procedure, steps 3 through 8 must be repeated.	9. See #8.

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APPENDIX E

ANTISEPTICS

ANTISEPTICS

Many chemicals qualify as safe antiseptics. **Table** E-1 lists several recommended antiseptic solutions, their killing actions, advantages and disadvantages. Information on how to prepare and use antiseptics is presented in this appendix.

Many chemicals qualify as antiseptics. The following products are available in different countries in the world:

- Alcohols (60 to 90%), ethyl, isopropyl or 'methylated spirit'
- Cetrimide and chlorhexidine gluconate, various concentrations (e.g., Savlon®)
- Chlorhexidine gluconate (4%) (e.g., Hibiclens, Hibiscrub, Hibitane)
- Hexachlorophene (3%) (e.g., pHisoHex)
- Iodines (1 to 3%), tincture and aqueous (e.g., Lugols)
- Iodophors, various concentrations (e.g., Betadine)
- Parachlorometaxylenol (PCMX or chloroxylenol), various concentrations (e.g., Dettol)

ALCOHOL SOLUTIONS (ETHYL OR ISOPROPYL)

Ethyl and isopropyl alcohol (60-90%) are excellent antiseptics, commonly available and inexpensive. Their rapid killing action makes them very effective in reducing numbers of micro-organisms on skin, even under gloves. Alcohols are effective against HBV and HIV. They should **not** be used on mucous membranes (vaginal preparation). (Alcohols dry and irritate mucous membranes which, in turn, promotes the growth of micro-organisms.)

Alcohols are among the safest known antiseptics. A 60 to 70% solution of ethyl or isopropyl alcohol is effective, is less drying to the skin and is less expensive than higher strengths. Because isopropyl alcohol tends to be a more efficient fat solvent than ethyl alcohol, it causes dry skin when used repeatedly; therefore, ethyl alcohol may be more gentle for frequent use on skin (Larson 1988).

Note: In many countries, alcohols are available as 'industrial methylated spirit', or ethyl alcohol denatured with a small amount of wood (methyl) alcohol (Harpin and Rutter, 1982). Because methyl alcohol is the least effective of the alcohols it should not be used alone as an antiseptic or disinfectant. Be sure the ethyl alcohol is of adequate strength (60 to 90%) in locally available 'spirit.'

Table E-1. Antiseptic Solutions

Group	Activity Against Bacteria							Potential Uses			
	Gram Positive	Most Gram Negative	TB	Viruses	Fungi	Endo-spores	Relative Speed of Action	Affected by Organic Matter	Surgical Scrub	Skin Preparation	Comments
Alcohols (60 to 90% ethyl or isopropyl)	Very good	Very good	Good	Good	Good	None	Fast	Data varies	Yes	Yes	Not for use on mucous membranes
Chlorhexidine[a] (4%) (Hibitane, Hibiscrub)	Very good	Good	Poor	Fair	Fair	None	Slow	Slight	Yes	Yes	Has good persistent effect
Hexachlorophene (3%) (pHisoHex)	Good	Poor	None	Fair	Poor	None	Slow	Slight	Yes	No	Rebound growth of bacteria may occur
Iodine preparations (3%) Iodine and alcohol (tincture of iodine)	Very good	Very good	Good	Good	Good	Poor	Interme-diate	Slight	No	Yes	Not for use on mucous membranes
Iodophors (1:2,500) (Betadine)	Very good	Good	Good	Good	Good	None	Slow	Yes	Yes	Yes	Can be used on mucous membranes

[a] **Note**: Savlon, which contains chlorhexidine, is not listed because the concentration of chlorhexidine varies from country to country from as little as 1% to 4%.

Adapted from: World Federation of Health Agencies for Advancement of Voluntary Surgical Contraception 1988; Larson 1988.

Advantages

- Rapidly kill all fungi and bacteria including micro-bacteria; isopropyl alcohol kills most viruses, including HBV and HIV, and ethyl alcohol kills all viruses.
- Although alcohols have no persistent killing effect, the rapid reduction of micro-organisms on skin protects against regrowth of organisms, even under gloves, for several hours.
- Are relatively inexpensive and are widely available throughout the world.
- Both are non corrosive to metals.

Disadvantages

- Evaporate rapidly, and cause drying of skin. (Ethyl alcohol may be less drying than isopropyl.)
- Expensive if imported.
- Easily inactivated by organic materials.
- Flammable, requiring storage in cool, well-ventilated areas.
- Will damage rubber (latex) over time.

CHLORHEXIDINE

Chlorhexidine gluconate (CHG) is an excellent antiseptic. It remains active against micro-organisms on skin many hours after use, and is safe even for use on newborn infants. Because CHG is inactivated by soap, its antimicrobial activity is dependent upon the concentration used. Chlorhexidine (4%) commonly is available and is the recommended concentration. Clorhexidine (0.5%) in 60 to 90% alcohol also is effective.

Advantages

- Has persistent action on skin.
- Chemical protection (the number of micro-organisms inhibited) increases with repeated use.
- Minimally affected by organic material.

Disadvantages

- Expensive and not always available.
- Action reduced or neutralised by natural soaps and by substances present in hard tap water.
- Must be used repeatedly for maximum effectiveness and residual activity.
- Patient ototoxicity.

HEXACHLOROPHENE

Hexachlorophene (3%) is active against gram-positive cocci such as staphylococcus, but has little or no activity against Gram-negative bacteria, viruses. *Mycobacterium tuberculosis* and fungi. It is not fast acting, and one wash with hexachlorophine does reduce skin flora. Hexachlorophene has neurotoxic side effects which make it risky to use on newborn infants. Use on broken skin or mucous membranes and for routine bathing is not recommended. When used intermittently, bacteria may grow back in large numbers (rebound growth) between uses.

Advantages

- Residual activity excellent when used regularly.

Disadvantages

- Rapidly inactivated by iodine and alcohol.
- May lead to serious neurotoxic side effects.
- Rebound growth of bacteria when use is discontinued or intermittent.

IODINE AND IODOPHOR SOLUTIONS

Iodines are very effective antiseptics. 1-3% iodines are available as both aqueous (Lugol) and tincture (iodine in 70% alcohol) solutions. Iodophors are solutions of iodine mixed with a carrier which releases small amounts of iodine and usually are available locally. (Povidone iodine is the most common iodophor.) The iodophors kill vegetative bacteria, mycobacterium viruses and fungi; however, they **require up to two minutes of contact time to release free iodine** (Larson 1988). Once released, however, the iodine has rapid killing action. It is not usually necessary to dilute commercially available iodophors manufactured for antisepsis (e.g., Betadine or Wescodyne). Iodophors are generally non-toxic and non-irritating to skin and mucous membranes.

Note: Iodophors manufactured for use as antiseptics are **not** effective for disinfecting inorganic objects and surfaces. Antiseptic solutions have significantly less iodine (Rutala 1990).

Advantages

- Inexpensive, effective and widely available.
- Iodophors are non-irritating (unless the person is iodine allergic) on skin or mucous membranes, making them ideal for vaginal preparation before IUCD insertion.
- Do not stain skin at 1:2,500 concentration.

Disadvantages

- Iodophors have little residual effect.
- Like alcohols, iodine and iodophors are inactivated by organic materials.

- Iodine (tincture or aqueous) may cause skin irritation and must be removed from skin after drying. (Use alcohol to remove iodine.) **Iodine (aqueous or tincture) must never be used on mucous membranes.**
- Skin absorption (and through mucous membranes) of free iodine may cause hypothyroidism in newborn infants (Newman 1989).

SOLUTIONS TO AVOID

Zephiran (benzalkonium chloride)

Zephiran is commonly used in many parts of the world as an antiseptic, however, it has several distinct disadvantages:

- Solutions of benzalkonium chloride have repeatedly been shown to become contaminated by *Pseudomonas* species and other common bacteria (Block 1983).
- Solutions of benzalkonium chloride are easily inactivated by cotton gauze and other organic material and are incompatible with soap (Block 1983).
- Zephiran takes at least 10 minutes to kill HIV, the virus causing AIDS (INTRAH 1992). (By contrast, 0.5% chlorine solution kills HIV in less than a minute).

Mercury Laurel or other Mercury-Containing Compounds

Although frequently sold for antisepsis, mercury-containing chemicals should be avoided due to their **high toxicity** (Block 1983).

- Skin exposure to low levels of mercury causes blister formation and contact dermatitis.
- Inhalation or ingestion of low levels of mercury causes central nervous system effects (numbness, speech impairment, deafness), and higher levels (200 mg) are fatal.
- Skin contact alone can result in absorption of measurable amounts of mercury.
- Pregnant women exposed to small doses may not show toxic effects themselves. Their foetus, however, may be harmed because mercury is a **potent** teratogen (causes birth defects, including cleft palate, cerebral palsy and other central nervous system abnormalities).

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APPENDIX F

PROCESSING SURGICAL GLOVES[1]

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. Sterilisation (autoclaving) and HLD (steaming or boiling) of gloves, when correctly performed, can provide a high quality product. In addition, **double-gloving** for high-risk procedures can be done. Therefore, processing surgical gloves constitutes an **appropriate reuse of disposable items**.

HOW TO DECONTAMINATE AND CLEAN SURGICAL GLOVES BEFORE STERILISATION 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 sterilisation 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 sterilisation or HLD. (Gloves which remain wet for long periods of time will absorb water and become tacky.)

Note: Gloves should be discarded after processing three times because invisible tears may occur with additional processing (Bagg, Jenkins and Barker 1990; Martin et al 1988).

HOW TO STERILISE SURGICAL GLOVES

After decontamination, cleaning and drying, gloves must be packaged prior to sterilising by autoclaving. First, fold the cuffs of the gloves out towards the palm so that they can be put on easily and without contamination after sterilisation. Next, put gauze or paper inside each glove and under the fold of the cuff and wrap the gloves as shown in **Figure F-1**. (Do not tie tightly or wrap glove packs with rubber bands.) Finally, place them 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/in^2).

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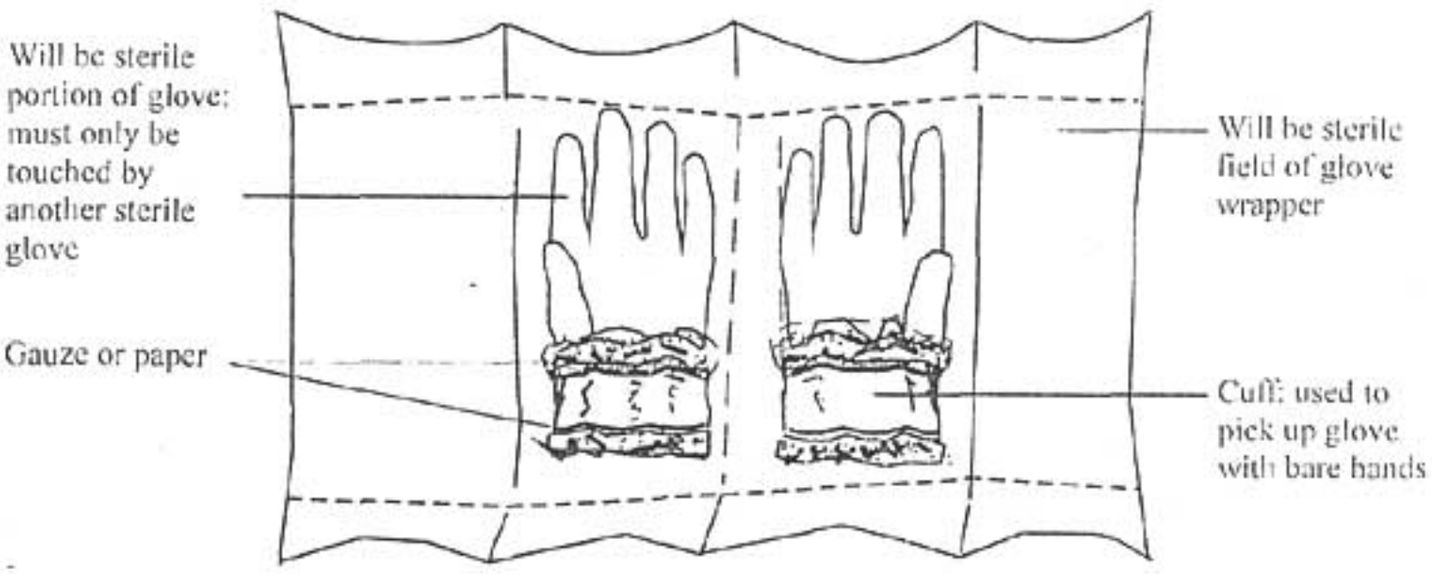
[1] *Adapted from*: Tietjen L, W Cronin and N McIntosh. 1992. *Infection Prevention for Family Planning Service Programs: A Problem-Solving Reference Manual*. Essential Medical Information Systems, Inc.: Durant, Oklahoma.

Figure F-1. Preparing Gloves for Autoclaving (steam sterilisation)



Source: South East Asia Office/ World Health Organization 1988.

Remember: Higher temperatures and pressures are destructive to gloves.

Immediately after autoclaving, gloves are extremely fragile 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 F-1**)

Table F-1. Tips to Help Avoid Glove Problems

PROBLEM: TACKY OR STICKY GLOVES	
Probable Cause	**Recommended Solution**
Residual liquid soap or detergent	Reduce amount of liquid soap or detergent used when washing gloves. Rinse gloves at least three times in clean water.
Heated to high temperature for too long	Use **30 minutes** sterilising time at 121°C (250°F) and remove gloves from steriliser as soon as cycle is completed.
Gloves sterilised with other goods	Sterilise gloves separately.
Gloves not allowed to dry completely after steaming	Wear 'wet' within 30 minutes or allow to dry for 4 to 6 hours before using.
Poor powdering	Use absorbable glove powder and follow manufacturer's instructions to insure a film of powder on all surfaces.
Surfaces of gloves touching each other	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 sterilisation and prevents surfaces from adhering to each other.
Breakdown (deterioration) of rubber (latex)	Store in a dry, cool area.
(Rubber gloves deteriorate while stored even though they have not been used. They become soft, sticky and unusable.)	Do not store in direct sunlight.
PROBLEM: EXCESSIVE TEARING OR RUPTURING	
Gloves used too soon following sterilisation	Do not use gloves for 24 to 48 hours after sterilisation . This allows gloves to regain their elasticity before use.

Source: Tomlinson 1991.

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 they have been allowed to cool).

After surgical gloves have been decontaminated and thoroughly washed they are ready for HLD.

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, very little steam is formed and the temperature at the water's surface may never get high enough to kill micro-organisms.)

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

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.)

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 [Perkins 1983].)

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 using.

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

STEP 10: Gloves remaining in the bag at the end of the clinic session should be reprocessed. (They will not dry completely inside and outside.)

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.

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 non-sterile object with the glove, or
- touching the outside of a 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 non-sterile 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 circulating 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 nurse or technician lets go of the cuff (Sorensen and Luckman 1979).

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 circulating 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.

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APPENDIX G

DECONTAMINATING AND CLEANING INSTRUMENTS, HYPODERMIC NEEDLES, SYRINGES AND LINENS[1]

HOW TO DECONTAMINATE AND CLEAN SURGICAL (METAL) INSTRUMENTS

Decontamination

STEP 1: After use, immerse all soiled instruments in a plastic container filled with 0.5% chlorine solution or other locally available disinfectant for at least 10 minutes. (This step is necessary to help prevent transmission of HBV or HIV/AIDS to clinic staff.)

STEP 2: If the instruments and other items cannot be washed immediately, rinse the objects with water and towel dry to minimize possible corrosion (rusting) due to chlorine.

Cleaning

Remember: Wear utility gloves, eyewear and mask. Do not use hot water because it coagulates protein, making blood and body fluids hard to remove.

STEP 3: Scrub instruments under water to prevent splashing of infectious materials. Use a soft brush and liquid soap or detergent and water (be sure to clean the teeth, joints and screws, an old toothbrush works well).

STEP 4: Rinse again with clean water until no soap or detergent remains. (Soap or detergent can interfere with the action of some chemical disinfectants).

STEP 5: Dry by air or with a clean towel. (Water from wet instruments will dilute chemicals used for HLD, making them ineffective.) Drying is not necessary for instruments which are to be boiled.

STEP 6: Proceed with sterilisation (if available) or HLD by steaming, boiling or soaking in a chemical disinfectant (see **Appendix C**)

HOW TO DECONTAMINATE, CLEAN AND DISPOSE OF NEEDLES AND SYRINGES

The use, and especially the disposal of both needles and syringes, however, creates logistical and infection prevention problems. For example, a clinic or health care facility using disposable needles and syringes must ensure that adequate supplies are available at all times. Without a continuous supply of needles and syringes, services for surgical contraceptive methods, as well as other activities, will be disrupted.

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[1] *Adapted from*: Tietjen L, W Cronin and N McIntosh. 1992. *Infection Prevention for Family Planning Service Programs: A Problem-Solving Reference Manual*. Essential Medical Information Systems, Inc.: Durant, Oklahoma.

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.

Instructions

When available and affordable, **disposable** (plastic) sterile syringes and needles are recommended for all client care and surgical procedures. If disposable are being used, it is important to:

- Maintain adequate supplies.
- Discard needles and syringes in a puncture-proof container immediately after use.
- Dispose of these containers after they are three-quarters full by burning or burying them.

Reusable Syringes and Needles

STEP 1 : Do not recap needle or disassemble needle or syringe.

STEP 2 : Immediately after use, draw a small amount of 0.5% chlorine solution into the syringe through the needle.

STEP 3 : Decontaminate assembled needle and syringe by placing in a 0.5% chlorine solution for 10 minutes.

STEP 4 : Wearing utility gloves, remove from decontamination solution and push out (flush) solution from assembled needle and syringe.

STEP 5 : Take needle and syringe apart and clean with soapy water. (Be sure to clean hub area of the needle.) Insert stylet or needle wire through hub of needle to be sure it is not blocked.

STEP 6 : Put syringe and needle back together. Rinse at least three times by filling with clean water and pushing out (flushing) water into another container so as not to contaminate the rinse water.

STEP 7 : Detach needle from syringe.

STEP 8 : Examine needle and syringe for:

- bent needle tip or other damage,
- needle hub fit to syringe, and
- readable syringe markers (lines indicating volume, cc or ml).

STEP 9 : Dispose of damaged needles in a puncture-proof container. When container is three quarters full, seal and either burn or bury.

STEP 10: Sterilise or high-level disinfect by boiling for 20 minutes.

Recapping Needles

If needles must be recapped, use the 'one-handed' recap method:

- First, place cap on a hard, flat surface, then remove hand.
- Next, with one hand, hold syringe and use needle to 'scoop up' cap.
- Finally, when cap covers needle completely, hold cap at base with other hand and secure cap on needle hub.

HOW TO CLEAN LINEN AND SURGICAL DRAPES

All linen items used in the direct care of a client must be thoroughly washed in water with liquid soap or detergent before reuse. Decontamination prior to washing is **not necessary**.

STEP 1: At the end of the surgical procedure, and while still wearing gloves, lift and remove the surgical drape and carefully place in a container or plastic bag.

STEP 2: Wash the **entire item** in water with liquid soap or detergent to remove all contamination, even if invisible.

Remember: Never just wash blood soaked or wet areas of linen.

STEP 3: Rinse with clean water.

STEP 4: Completely air or machine dry before further processing. (Air dry in direct sunlight, if possible, keeping the fabric off the ground, away from dust and moisture).

STEP 5: After linens are totally dry, they should be checked for holes and very threadbare areas. If these are present, the item must be discarded or repaired before reuse. (If there are any holes or many repaired areas, the item should not be used as a drape. It can be cut into pieces to be used as cleaning rags).

Note: If surgical drapes or surgical gowns are to be sterilised, do not iron. (Ironing dries out the material making autoclaving more difficult).

If a **clean drape** is acceptable, the air-dried drape can be ironed before placing it on a shelf or in a container for storage. A clean drape should be used for procedures when sterile drape is not necessary (e.g., Norplant implants insertion and removal).

Clean gowns and drapes should be stored in a clean, dry space which is mold-, dust- and insect-free, preferably in a closed cabinet and not near areas that are frequently mopped or near sinks. (Air should circulate between the items in the storage area and the supply should be rotated).

REFERENCES

Phillips, I., et al. 1971. *Pseudomonas Cepacia (Multivorans)* septicaemia in an intensive care unit. *Lancet* 1(695): 375-377.

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PHARMACOLOGY OF DRUGS RELEVANT TO LOCAL ANAESTHESIA[1]

DRUGS AVAILABLE IN ALL CENTERS

Lidocaine Hydrochloride

Other names: Xylocaine, Lignocaine

Action: Local anaesthetics act by preventing generation and transmission of impulses along nerve fibers and at nerve endings. Although toxicity occasionally occurs as a result of overdose with local anaesthesia, allergic reactions to the amide-linkage drugs. such as lignocaine and bupivacaine, are exceedingly rare. In fact, it is questionable whether true anaphylaxis to lignocaine given **without epinephrine** has ever been shown.

Dosage: The usual dose for local infiltration of a Abdominal Tubectomy incision site is 20 ml of 1% lignocaine. The maximum safe dose of 1% lignocaine without epinephrine is 5 mg per kg body weight. For a woman weighing 40 kg (88 lb), this is equivalent to 200 mg. or 20 ml, of 1% lignocaine (or 10 ml of 2% lignocaine).

Regimen: Through a single incision site, the doctor should locally infiltrate 1% lignocaine without epinephrine, about 15 ml, into the skin, fascia, and peritoneum. After waiting 2 to 3 minutes for the local field block to take effect, the doctor should incise. The remaining 5 ml of the lignocaine can be used to augment the anaesthesia block as needed.

One may elect to use 0.5% lignocaine and inject a greater volume. However. 2% solutions should routinely be diluted with normal saline to make a 1% strength. because the more concentrated 2% solution (with a maximum dose of 5 mg/kg) will not allow enough volume to provide adequate infiltration of all tissue layers.

Warnings: Adverse effects may occur as a result of the addition of a vasoconstrictor (epinephrine).

Adverse effects of lignocaine on the central nervous system are seen after accidental intravenous injection. The client usually first complains of numbness of the tongue and mouth, lightheadedness, tinnitus. visual disturbances, and slurring of speech. The client may lose consciousness and have convulsions. If the injection is stopped, the drug passes rapidly, and the convulsions will stop within 2 minutes. Coma can occur if the intravenous dose is very high.

The doctor should pull back the plunger of the syringe when injecting each tissue layer to ensure that the solution is not being injected into a vessel; all injections should be given slowly.

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[1] *Adapted from*: Philippine Family Planning Program. 1993. *Guidelines: Minilaparotomy with Local Anesthesia.* Family Planning Service, Department of Health: Manila, The Philippines.

Pentazocine

Other Name: Fortwin

Action: Pentazocine, a member of the benzazocine series (also known as the benzomorphan series) is a synthetic narcotic with a potent analgesic effect. It weakly antagonises the analgesic effects of morphine and meperidine. It has about 1/50 the antagonistic activity of nalorphine. It also has a sedative effect. When given intravenously, its onset of action is within 2 to 3 minutes and lasts up to 4 hours. When given intramuscularly, its onset of action is within 15 to 20 minutes.

Dosage: The usual adult dose is 30 mg, which is usually as effective as morphine 10 mg or meperidene 75 to100 mg. Doses of more than 30 mg IV per single injection or a total daily dose of more than 360 mg are not recommended.

Regimen: Pentazocine can be administered intramuscularly or intravenously.

Warnings: Special care should be exercised in prescribing for emotionally unstable patients and for those with a history of drug misuse. Since sedation, dizziness and occasional euphoria have been noted, ambulatory patients should be warned not to operate machinery, drive cars or unnecessarily expose themselves to hazards. Concomitant use of CNS depressants with parenteral pentazocine may produce additive CNS depression. Adequate equipment and facilities should be available to identify and treat systemic emergencies as they occur.

Treatment of Overdose: Oxygen, intravenous fluids, vasopressors and other supportive measures should be employed as indicated. For respiratory depression due to overdose or unusual sensitivity, parenteral Naloxone is a specific and effective antagonist.

Diazepam

Other names: Valium, Calmpose

Action: Diazepam is a benzodiazepine with anticonvulsant, anxiolytic, sedative, muscle-relaxant, and amnestic properties. Diazepam is a useful premedication for clients who will undergo Abdominal Tubectomy under local anaesthesia, to induce a calming effect and to diminish the client's recall of the procedure.

Dosage: For clients over 35 kg (75 lb), the dose is 10 mg. If a client weighs less than 35 kg, the dose should be reduced to 5 mg. The staff should use a lower dose (usually 2 to 5 mg) for debilitated clients.

Regimen: Diazepam can be given by mouth, 30 to 60 minutes before the procedure, with a sip of water.

Diazepam may be given intravenously at the start of a procedure *but* the staff member should take the following steps:

- Inject the solution slowly, taking at least one minute for each 5 mg (1 ml) given.
- Do not use small veins, such as those on the back of the hand or the inside of the wrist.
- Take extreme care to avoid intra-arterial administration or extravasation.
- Do not mix or dilute Diazepam with other solutions or drugs in the syringe. If diazepam cannot be administered directly intravenously, it may be injected slowly through the infusion tubing as close as possible to the needle insertion site.
- Avoid intramuscular administration for premedication usage, as the time of maximum effect is not dependable.

When Diazepam is used with a narcotic analgesic, such as Meperidine, as the pre-operative medication for Abdominal Tubectomy under local anaesthesia, the staff should reduce the narcotic dosage by at least one-third and administer it in small increments. In some cases, the use of a narcotic may not be necessary.

Warnings: When Diazepam is combined with the use of a narcotic (such as Meperidine) or other sedative, respiratory depression is increased. Therefore, oxygen and resuscitative equipment should be readily available.

Side effects most commonly reported are drowsiness, fatigue, and ataxia. Other side effects include bradycardia, cardiovascular collapse, and hypotension.

Manifestations of Diazepam overdose include somnolence and confusion.

Diazepam and Ketamine, being chemically incompatible because of precipitate formation. should not be injected in the same syringe.

Treatment of overdose: The staff should administer an antidote, such as physostigmine 0.5-1.0 mg intravenously, or flumazenil 0.2 mg intravenously, given over 30 seconds, with subsequent doses of 0.3 mg and then 0.5 mg given at one-minute intervals up to a total dose of 3 mg.

Naloxone will not reduce the sedation caused by Diazepam.

Promethazine Hydrochloride

Other name: Phenergan

Action: Phenergan is a phenothiazine tranquiliser. It has antihistaminic, sedative, antiemetic, and anticholinergic effects. Phenergan can be used in Abdominal Tubectomy under local anaesthesia for pre-operative sedation, for prevention and control of nausea and vomiting, and as an adjunct to analgesics for control of post-operative pain.

Dosage: For pre-operative and post-operative medication, the usual adult dose is 25 mg or 50 mg.

Regimen: For anaesthesia premedication, Phenergan is administered intramuscularly.

Warnings: Phenergan adds to the sedative effect of narcotics. If it is given with Meperidine before a Abdominal Tubectomy, the dose of Meperidine should be reduced by one quarter to one half.

Administration of Phenergan should not be subcutaneous, which may result in tissue necrosis.

Atropine Sulphate

Other name: Atropine

Action: Atropine has an antispasmodic action on smooth muscle, and it reduces secretions.

The primary use of Atropine in Abdominal Tubectomy under local anaesthesia is to decrease the possibility of vasovagal syncope.

Dosage: The usual adult dose is 0.4 to 0.6 mg (or 1/150 g). If the client weighs less than 35 kg (75 lb), the staff should give only 0.4 mg.

Regimen: The staff can administer Atropine either intramuscularly 30 minutes before the surgery, or intravenously when the client is on the operating table.

When the staff gives the drug intravenously, half of the dose should be administered over a period of 10 to 30 seconds while the client is monitored for signs of adverse effects. If there are none, the staff should give the remaining dose over another period of 10 to 30 seconds.

Warnings: Common side effects include thirst and dryness of the mouth, with difficulty in swallowing and talking. Atropine may cause a rapid pulse.

Naloxone Hydrochloride

Other names: Narcan, Naloxone, Lethindrone

Action: Naloxone is indicated for the reversal of respiratory depression caused by narcotics. including pethidine (Meperidine, Demerol), nalbuphine (Nubain), butorphanol (Stadol), fentanyl (Sublimaze), and pentazocine (Talwin). Naloxone has no toxicity.

Dosage: The initial dose is 0.4 mg given intravenously. The staff may give repeat doses intravenously at intervals of 2 to 3 minutes until the desired degree of reversal (adequate ventilation and alertness) is achieved. Several doses of Naloxone, even over a short period. may be given without untoward effects.

Regimen: Administration of Naloxone is intravenous for a rapid onset of action, which is generally apparent within two minutes.

The requirement for repeat doses of Naloxone will depend on the amount, type, and route of administration of the narcotic being antagonized.

Intravenous administration is recommended in an emergency situation because it achieves the most rapid onset of action.

Warnings: If the surgical team observes no response after a total dose of 2 to 4 mg, it should consider other causes of respiratory depression, such as overdose of Diazepam or hypoxia due to internal hemorrhage.

The surgical team must monitor the client closely because the effect of the narcotic causing the depression may outlast the effect of Naloxone.

Naloxone is not effective against respiratory depression due to non-narcotic drugs, such as Diazepam and Midazolam.

In addition to Naloxone, resuscitative measures such as maintenance of a free airway, artificial ventilation, cardiac massage, and vasopressor agents should be available and employed when necessary to counteract acute narcotic oversedation.

Naloxone ampules and vials show an expiration date. Because this drug is not used frequently, the supply may not be fresh. Injections repeated at shorter intervals, or increased doses, may be needed for effectiveness if the expiration date has passed.

ADDITIONAL DRUGS AVAILABLE IN SOME CENTERS

Ketamine Hydrochloride

Other names: Ketalar, Ketamine

Action: Ketamine is a rapid-acting, non-barbiturate, non-narcotic drug producing either profound analgesia or rapid anaesthesia, depending on the dose. It produces a trancelike state in which the client rapidly becomes dissociated from the environment.

Ketamine allows for normal phatyngeal-laryngeal reflexes and normal muscle tone, so the risk of respiratory depression is minimal.

Blood pressure begins to rise shortly after injection, reaches a maximum within a few minutes, and usually returns to pre-injection values within 15 minutes after injection.

Dosage: For analgesia, the dose is 0.2 to 0.5 mg/kg (8 to 20 mg for a client weighing 40 kg [88 lb]), given intravenously. (The total adult dose must be titrated for client's weight and condition.) This provides a duration of 10 to 15 minutes of analgesia.

For general anaesthesia, the dose is 2 mg/kg intravenously.

Regimen: To minimize the psychotropic effect of Ketamine, the client should take Diazepam by mouth one hour before surgery. Intramuscular or intravenous administration of Atropine in a separate injection, before the Ketamine, will minimize vasovagal reactions related to uterine manipulation. The staff should administer the Ketamine intravenously, slowly, and over a period of 60 seconds. Given the short duration of Ketamine's effect, the staff may give

supplemental doses about one-third less than the initial analgesic dose at 10-minute intervals as needed. However, supplemental doses will prolong the recovery period and increase the chance of psychotropic reactions.

Warnings: Ketamine should be used by or under the direction of physicians experienced in administering general anaesthesia, maintaining an airway, and assisting respiration.

During the procedure the staff must continually monitor cardiac function in clients with hypertension or cardiac decompensation.

Barbiturates and Ketamine, being chemically incompatible because of precipitate formation, **should not** be injected in the same syringe.

Prolonged recovery time may occur if barbiturates or narcotics are used concurrently with Ketamine.

If respiratory depression occurs because of overdose or a too-rapid rate of administration, respiration must be supported mechanically.

Precautions: To reduce psychotropic reactions, such as frightening dreams, hallucinations, or delirium, the staff should minimize stimulation (verbal, tactile and visual) during the recovery period.

REFERENCES

The Philippines: Family Planning Program, Department of Health. 1993. *Guidelines: Minilaparotomy with local anesthesia. Manila.*

Tietjen, L., Cronin, W., and McIntosh, N. 1992. *Infection Prevention for Family Planning Service Programs: A Problem-Solving Reference Manual.* Durant, OK: Essential Medical Information Systems, Inc.

APPENDIX I

ABDOMINAL TUBECTOMY KIT[1]

ITEM	QUANTITY
Sponge-holding forceps	1
Surgical drape (towel with central hole)	1
Syringe, 10 cc	2
Needle, 22-G, 1 ½"	2
Scalpel	1
Scalpel blade, size 15	2
Allis forceps	2
Small artery forceps	6
Needle holder	1
Straight scissors	1
Curved scissors	1
Babcock's clamp, medium size	2
Small Langenbeck (right-angle abdominal) retractor	2
Dissecting forceps, toothed	1
Dissecting forceps, nontoothed	1
Small stainless steel bowl	1
1-0 chromic catgut	1
Small round-bodied, curved needle	1
Small cutting needle	1
Non-absorbable suture material	1
Bandage	1

BACKUP TRAY (1 per institution)

Retractor, Richardson (set of 2), SS	2
Catheter, urethral, female, #14, French, SS	2

[1] *Adapted from*: Department of Family Welfare, Ministry of Health and Family Welfare, Government of India. 1999. *Standards for Male and Female Sterilisation*. Ministry of Health and Family Welfare: New Delhi.

APPENDICE J

LEARNING GUIDE FOR I1NTERVAL ABDOMINAL TUBECTOMY CLINICAL SKILLS CHECKLIST FOR DOCTORS

(To be used by **Participant**)

Rate the performance of each step or task observed using the following rating scale:

1. **Needs Improvement**: Step or task not performed correctly or out of sequence (if necessary) or is omitted.
2. **Competently Performed:** Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently.
3. **Proficiently Performed**: Step or task performed efficiently and precisely in proper sequence (if necessary).

STEPS/ TASKS		CASES				
GETTING READY AND ASSESSMENT OF CLIENT						
1	Greet client respectfully and establish rapport.					
2.	Review client history, physical examination and haemoglobin and urine report.					
3.	Check that informed consent was obtained and verify client's identity.					
4.	Ensure that client has thoroughly washed abdominal and pelvic areas.					
5.	Ensure that client has recently voided.					
6.	Help position client flat on her back on operating table.					
7.	Determine that sterile or high level disinfected instruments and emergency tray are present.					
8.	Take and record vital signs.					
9.	Wash hands thoroughly with soap and water and air dry or dry with clean cloth					
10.	Place client in a lithotomy position.					
11.	Put new examination or high level disinfected surgical gloves on both hands.					
12.	Perform a per speculum examination to rule out any lesion in the cervix					
13.	Perform a gentle bimanual pelvic examination to assess uterine size, position and mobility and presence of any pelvic abnormality.					
14.	Briefly immerse gloved hands in chlorine solution. If disposing of gloves, place in leak-proof container or plastic bag. If reusing gloves, soak in chlorine solution for 10 minutes.					

15.	Give IV medication, if needed (initial or maximum dose based on client's weight). If IM premedication is to be used, give it 25-30 minutes before the procedure.					
16.	Change into surgical apparel.					
17.	Perform surgical scrub (3-5 minutes) and put on clean or sterile gown.					
18.	Put sterile or high level disinfected surgical gloves on both hands.					
19.	Apply antiseptic [Betadine] solution to the incision area two times using a circular motion inside out.					
20.	Drape client for the procedure.					
21.	Throughout procedure talk to the client (verbal anaesthesia).					
22.	Select incision site about 3 cm above pubic symphysis.					
ABDOMINAL TUBECTOMY PROCEDURE						
LOCAL ANAESTHESIA						
1.	Raise a small skin wheal at the centre of incision site using 1% lignocaine (or equivalent) in a 10 or 20 ml sterile or high level disinfected syringe (dose 5mg/kg).					
2.	Starting at the centre of the planned incision, administer local anaesthesia (about 3-5 ml) just under the skin along both sides of the incision line.					
3.	Again starting at the centre of the incision line, insert needle into the fascia at a 45° angle with the needle directed slightly superior the incision line.					
4.	Aspirate to ensure the needle is not in a blood vessel; then, while injecting 3-5 ml of lignocaine, withdraw the needle slowly upto subcutaneous level and repeat on the other side of incision line.					
5.	Insert the needle down through the rectus sheath to the peritoneum, aspirate and inject 1-2 ml into the peritoneal layer.					
6.	Withdraw needle and place in a safe area to prevent accidental needle pricks.					
7.	Massage the skin to spread the anaesthetic within the tissues.					
8.	Test incision site with forceps tip for adequate anaesthesia. (If client feels pain, wait 2-3 more minutes and retest incision site).					

ABDOMINAL ENTRY						
9.	Make transverse/vertical, suprapubic skin incision, approximately 3 cm long at the preselected incision site 3 cm above symphysis pubis.					
10.	Bluntly dissect subcutaneous tissues with scissor tips or fingers.					
11.	Identify and grasp fascia at two places with the Allis forceps and cut with scissors.					
12.	Separate rectus muscles in the midline (longitudinally) using blunt dissection with artery forceps and clean off preperitoneal tissue if needed.					
13.	Confirm identification of peritoneum.					
14.	While elevating the peritoneum with the forceps, make a small nick in the peritoneum with knife/scissors after confirming that there is no underlying bowel or abdominal viscera.					
15.	Enlarge opening vertically with scissors/fingers, place artery forceps on upper and lower cut edges of peritoneum (Place client in head-down, Trendelenburg position, as needed).					
Locating Fallopian Tubes						
16	Insert index finger *or* index and middle finger of the one hand inside the incision and feel for the fundus of the uterus.					
17.	Slide the finger/s along the fundus laterally and a little posteriorly and feel for the Fallopian tube.					
18.	Trace the tube laterally with the fingers and roll it between them to confirm that it is the fallopian tube. If using one finger then hook the tube, lift it and roll it against the anterior abdominal wall [the fallopian tube will be soft and mobile].					
Grasping the Fallopian Tubes						
19.	Holding the tube between the two fingers or hooking over one finger gently bring it out through the abdominal incision.					
20.	Gently grasp the mid portion of the tube with the Babcock's forceps.					
21.	Identify fimbriated end of the tube by tracing the tube till the fimbrial end.					
Tubal Occlusion						
22.	While grasping the midportion of tube, transfix the tube with chromic catgut 1-0 making loop of tube about 3 cm					
23.	Tie the knots on both sides of the tube.					

24.	Cut out one end of the loop and then the other with scissors ensuring that at least 1 cm of the tubal stump above the ligature has been left behind.					
25.	While still holding ligature inspect the stump for haemostasis and then release the tube, allowing it to return to abdomen.					
26.	Repeat procedure on opposite side for second tube.					
Closure (When haemostasis assured, close wound in layers)						
27.	The closure of peritoneum is optional.					
28.	Secure rectus sheath edges with continuous/ interrupted sutures.					
29.	Close skin with same absorbable/non absorbable suture material.					
30.	Dress the wound.					
POST-OPERATIVE TASKS						
1.	Ensure that client is safely transferred to the post-operative (Recovery) area.					
2.	Ensure that the assistant disposes of disposable needles and syringes in a puncture-proof container *or* fill re-usable needles and syringes with 0.5% chlorine solution and soaks for decontamination for 10 minutes.					
3.	Ensure that assistant decontaminates instruments by soaking in 0.5% chlorine solution for 10 minutes.					
4.	Check that the assistant disposes of waste materials according to the infection prevention guidelines.					
5.	Briefly immerse gloved hands in chlorine solution. If disposing of gloves, place in leak-proof container or plastic bag. If reusing gloves, soak in chlorine solution for 10 minutes.					
6.	Wash hands thoroughly with soap and water and air dry or dry with clean cloth.					
7.	Ensure that client is monitored at regular intervals and that vital signs are taken.					
8.	Determine that client is ready for discharge (at least 2 hours after IV medication).					
9.	Ensure that post-operative instructions and follow-up schedule are given.					

LEARNING GUIDE FOR POST PARTUM ABDOMINAL TUBECTOMY CLINICAL SKILLS CHECKLIST FOR DOCTORS

(To be used by **Participant**)

Rate the performance of each step or task observed using the following rating scale:

1. **Needs Improvement:** Step or task not performed correctly or out of sequence (if necessary) or is omitted.
2. **Competently Performed:** Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently.
3. **Proficiently Performed:** Step or task performed efficiently and precisely in proper sequence (if necessary).

STEPS/ TASKS		CASES			
GETTING READY AND ASSESSMENT OF CLIENT					
1.	Greet client respectfully and establish rapport.				
2.	Review client history, physical examination and haemoglobin and urine report.				
3.	Check that informed consent was obtained and verify client's identity.				
4.	Ensure that client has thoroughly washed abdominal and pelvic areas.				
5.	Ensure that client has recently voided.				
6.	Help position client flat on her back on operating table.				
7.	Determine that sterile or high level disinfected instruments and emergency tray are present.				
8.	Take and record vital signs.				
9.	Wash hands thoroughly with soap and water and air dry or dry with a clean cloth.				
10.	Place client in a lithotomy position.				
11.	Put new examination or high level disinfected surgical gloves on both hands.				
12.	Perform a per speculum examination to rule out any lesion in the cervix.				
13.	Perform a gentle bimanual pelvic examination.				

14.	Briefly immerse gloved hands in chlorine solution. If disposing of gloves, place in leak-proof container or plastic bag. If reusing gloves, soak in chlorine solution for 10 minutes.					
15.	Give IV medication, if needed (initial or maximum dose based on client's weight). If IM premedication is to be used, give it 25-30 minutes before the procedure.					
16.	Change into surgical apparel.					
17.	Perform surgical scrub (3-5 minutes) and put on clean or sterile gown.					
18.	Put sterile or high level disinfected surgical gloves on both hands.					
19.	Select incision site about 1-2 cm inferior to uterine fundus.					
20.	Apply antiseptic solution to the incision area two times using a circular motion.					
21.	Drape client for the procedure.					
22.	Throughout procedure talk to the client (verbal anaesthesia).					
LOCAL ANAESTHESIA						
1.	Raise a small skin wheal at the centre of incision site using 1% lignocaine (or equivalent) in a 10 or 20 ml sterile or high level disinfected syringe (dose 5mg/kg).					
2.	Starting at the centre of the planned incision, administer local anaesthesia (about 3-5 ml) just under the skin along both sides of the incision line.					
3.	Without withdrawing the needle again starting at the centre of the incision line, insert needle into the fascia at a 45° angle with the needle directed slightly superior the incision line.					
4.	Aspirate to ensure the needle is not in a blood vessel; then, while injecting 3-5 ml of lignocaine, withdraw the needle slowly upto the subcutaneous level and repeat on the other side of incision line.					
5.	Insert the needle down through the rectus sheath to the peritoneum, aspirate and inject 1-2 ml into the peritoneal layer.					
6.	Withdraw needle and place in a safe area to prevent accidental needle pricks.					
7.	Massage the skin to spread the anaesthetic within the tissues.					
8.	Test inciston site with forceps tip for adequate anaesthesia. (If client feels pain, wait 2-3 more minutes and retest incision site).					

ABDOMINAL ENTRY						
9.	Make transverse/ vertical, subumblical skin incision, approximately 3 cm long at the preselected incision site (about 1-2 cm inferior to uterine fundus.					
10.	Bluntly dissect subcutaneous tissues with scissor tips or fingers.					
11.	Identify and grasp fascia at two places with the Allis forceps and cut with scissors.					
12.	Separate rectus muscles in the midline (longitudinally) using blunt dissection with artery forceps and clean off preperitoneal tissue if needed.					
13.	Confirm identification of peritoneum.					
14.	While elevating the peritoneum with the forceps, make a small nick in the peritoneum with knife/scissors after confirming that there is no underlying bowel or abdominal viscera.					
15.	Enlarge opening vertically with scissors/ fingers, place artery forceps on upper and lower cut edges of peritoneum. (Place client in head-down, Trendelenburg position, if needed.)					
Locating Fallopian Tubes						
16.	Insert index finger/index and middle finger of one hand inside the incision and feel for the fundus of the uterus.					
17.	Slide the finger/s along the fundus laterally and a little posteriorly and feel for the Fallopian tube.					
18.	Trace the tube laterally with the fingers and roll it between them to confirm that it is the fallopian tube. If using one finger, hook the tube , lift it and roll it against the anterior abdominal wall. [Fallopian tube will be soft and mobile.]					
Grasping the Fallopian Tubes						
19.	Holding the tube between the two fingers or hooking over one finger gently bring it out through the abdominal incision.					
20.	Gently grasp the mid portion of the tube with the Babcock's forceps.					
21.	Identify the tube by tracing the tube laterally till the fimbrial end.					
Tubal Occlusion						
22.	While grasping the midportion of tube, transfix the tube with chromic catgut 1-0 making a loop of about 2-3 cms.					
23.	Tie the knots on both the sides of the tube.					

24.	Cut out one end of the loop and then the other with scissors ensuring that at least one cm. of the tubal stump above the ligature has been left behind.					
25.	While still holding the ligature inspect the stump for haemostasis and then release the tube, allowing it to return to the abdomen.					
26.	Repeat procedure on opposite side for the second tube.					
Closure (When haemostasis assured, close wound in layers)						
27.	The closure of peritoneum is optional.					
28.	Secure the rectus sheath edges with interrupted/ continuous sutures.					
29.	Close skin with the same absorbable /non absorbable suture material.					
30.	Dress the wound.					
POST-OPERATIVE TASKS						
1.	Ensure that client is safely transferred to the post-operative (Recovery) area.					
2.	Ensure that the assistant disposes of disposable needles and syringes in a puncture-proof container *or* fill re-usable needles and syringes with 0.5% chlorine solution and soaks for decontamination for 10 minutes.					
3.	Ensure that assistant decontaminates instruments by soaking in 0.5% chlorine solution for 10 minutes.					
4.	Check that assistant disposes of waste materials according to infection prevention guidelines.					
5.	Briefly immerse gloved hands in chlorine solution. If disposing of gloves, place in leak-proof container or plastic bag. If reusing gloves, soak in chlorine solution for 10 minutes.					
6.	Wash hands thoroughly with soap and water and air dry or dry with clean cloth.					
7.	Ensure that client is monitored at regular intervals and that vital signs are taken.					
8.	Determine that client is ready for discharge (at least 2 hours after IV medication).					
9.	Ensure that post-operative instructions and follow-up schedule are given					