STANDARDS
FOR
MALE AND FEMALE STERILISATION

ISSUED BY
TECHNICAL OPERATIONS DIVISION
DEPARTEMENT OF FAMILY WELFARE
MINISTRY OF HEALTH AND FAMILY WELFARE
GOVERNMENT OF INDIA
NEW DELHI-110011 (INDIA)
1. COUNSELLING/INFORMED CONSENT/ELIGIBILITY

1.1 Counselling for Voluntary Sterilisation

The following steps must be taken before a sterilization client signs a consent application.

The client must be presented with all the methods of family planning, including oral pills, the IUD, spermicides, condoms, and sterilisation.

The client must make the decision for sterilization voluntarily.

The client must be counseled in language that he or she can understand.

The following features of the sterilization procedure must be explained to the client:

a) It is a surgical procedure that has a small risk of complications requiring further treatment.

b) It is meant to be effective in preventing further pregnancies.

c) It is meant to be a permanent procedure.

d) It does not affect sexual pleasure, ability, or performance.

e) It is a safe and simple procedure.

f) It will not affect the client’s ability to carry out usual activities.

g) It has a small chance of failure.

The client must be told that reversal of this surgery is possible; but that the reversal procedure is major surgery and its success cannot be guaranteed.

Consent for tubectomy should not be obtained when physical or emotional factors may compromise a client’s ability to make a carefully considered decision about a permanent method of contraception. Consent should not be obtained when a woman is sedated or when she is experiencing stress associated with some pregnancy related event.

1.2 Informed consent

After the details of the procedure are explained, the client must sign a printed application and consent form for sterilization. The application and consent form is attached as Annexure I.

1.3 Eligibility Criteria

1.3.1 The client must be married, and the spouse must be living.

1.3.2 The male client must be below age 50; his wife must be below age 45.

1.3.3 The female client must be below age 45 and above age 22.

1.3.4 The number of children must not be a criterion for determining the eligibility for sterilization acceptors.

1.3.5 The client or spouse must not have undergone previous sterilization. (This condition may be waived in case of failure of the previous operation).

1.3.6 The client must be in the proper state of mind to understand the full implications of the sterilization surgery.
2. STANDARDS FOR FEMALE STERILISATION

The counseling, informed consents, and eligibility standards in Section 1 apply to both male and female sterilization acceptors.

2.1 Medical contraindications

Generally speaking, there are no absolute contraindications for sterilization on medical grounds. Medical screening of clients is required to assure that patients who are at high risk of complications are referred to an appropriately equipped facility with personnel trained to deal with their medical or surgical problems. In addition, it is necessary to counsel a couple that the simplest sterilization procedure, with the lowest morbidity, is vasectomy.

The risk of pregnancy must be weighed against the risk of the sterilization procedure.

The following relative contraindications are conditions for which referral, further evaluation or counseling, or provision of another contraceptive method is warranted.

2.1.1 Mental illness (the client must be able to provide informed consent)
2.1.2 Physical illness
   a) Acute febrile illness
   b) Jaundice or other chronic liver disease
   c) Anaemia with hemoglobin less than 8 gm %
   d) Chronic systemic disease, including tuberculosis, bronchial asthma, blood dyscrasias, heart disease, uncontrolled diabetes, hypertension, and thyrotoxicosis
   e) Malignancy
   f) Skin conditions, including infection involving operative site.
   g) Pelvic infection, adhesions, or mass
   h) Severe nutritional deficiency, such as hypoproteinaemia, anaemia, and vitamin deficiency
   i) Bleeding disorder
   j) Continuing pregnancy
2.1.3 Allergies to local anesthesia (alternative anesthesia or procedure must be provided)
2.1.4 Obesity that would make surgery difficult under local anesthesia
2.1.5 Some additional screening considerations apply to postpartum clients. Voluntary sterilization may have to be deferred to the interval period if any of the following conditions are present:
   a) Puerperal fever
   b) Prolonged rupture of membranes
   c) Pre-eclampsia or eclampsia
   d) Ante-partum and post-partum hemorrhage
   e) Trauma to the genital tract
   f) History of post-partum psychosis
If there is any question of medical eligibility or need for consultation the client should be referred to a higher level service centre. Alternatively the husband may be considered for sterilization.

Note that anaemic or undernourished women requesting sterilization are in need of such referral services all the more. Efforts should be made to treat the client for anaemia or malnutrition and then to provide sterilization services, or to refer the client’s husband for vasectomy.

2.2 Instructions to Clients
Instructions must be given in language the client can understand.

2.2.1 Pre-Operative Instructions
a) The client must receive a clear description of what will happen prior to and during the sterilization, including a description of the examination, lab tests, and surgery.
b) The client must bathe and wear clean and loose clothing to the operating theatre (OT).
c) The client must fast after midnight.
d) On the morning of surgery, she must empty her bowels, and before entering the OT, empty her bladder.
e) The client must not wear any jewelry, nail polish, or hair pins.
f) Before entering the OT she must remove eye glasses, contact lenses, and dentures.
g) Someone must be available to accompany the client home after the surgery.
h) She must receive instructions on her post-operative self-care, incision care, when she can resume colitus, and when and where to return for follow-up visits.
i) She must receive instructions on where to go if complications (such as infection, fever, increasing pain, bleeding from the incision, suspected pregnancy) arise.
j) She must receive instructions on how to use the medications prescribed after surgery.

2.2.2 Post-Operative Instructions
The client should be told to do the following after discharge:
a) Return home after discharge and rest for the remainder of the day. Take adequate rest and limit strenuous activity for the next seven days.
b) Resume only normal light work after 48 hours and return to full activity by two weeks following surgery.
c) Take medicines as advised by doctor, including multi-vitamins and iron tablets twice daily for 10 days and analgesics as needed for pain.
d) Resume a normal diet as soon as possible.
e) Keep the incision area clean and dry. Don not disturb or open the bandage or dressings.
f) May bathe after 24 hours following the surgery. When bathing, keep the incision area dry. If the dressing becomes wet, it should be changed.
g) May have intercourse two weeks after surgery. Sterilisation procedures do not interfere with sexual pleasure, ability, or performance.

h) Report to the doctor or clinic if there is excessive pain, fainting, fever, bleeding, or pus discharge from the incision.

i) Return to the clinic for removal of stitches and postoperative check-up in seven days.

j) If there are any questions, contact the health personnel or doctor at any time.

2.3 Clinical and Technical Procedures

2.3.1 History and Physical Examinations

a) Demographic Information – The following information is required: age, marital status, occupation, religion, education, number of living children, and age of youngest child.

b) Medical History

(i) History of illnesses and other medical conditions, including hypertension, anaemia, convulsions, respiratory problems, heart disease, diabetes, bleeding disorders, psychiatric conditions, pelvic or abdominal surgery, pelvic inflammatory disease, vaginal discharges and urinary tract infections, and allergies to medications.

(ii) Immunization status of woman (for tetanus), of children (for six killer diseases: tetanus, tuberculosis, diphtheria, pertussis, poliomyelitis, and measles)

(iii) Addictions (alcohol, smoking and drugs)

(iv) Current medications

(v) Last contraceptive used

(vi) Menstrual history: date of last menstrual period; current pregnancy status (if pregnant, how many weeks)

(vii) Obstetric history: Number of pregnancies, deliveries (live births and stillborn), abortions (spontaneous and induced), living children of each sex, age of youngest child

c) Physical Examination – Pulse and blood pressure, temperature, body weight, general condition and nutritional status, auscultation of heart and lungs, examination of abdomen, pelvic examination, and other examinations as indicated by client’s medical history or general physical examination.

d) Laboratory Examinations - Blood test for hemoglobin, urinalysis for sugar and albumin, and other laboratory examinations as indicated.

2.3.2 Timing of the Surgical Procedure

It is advisable that interval sterilization procedures be performed soon after the menstrual period is over (in the follicle phase of the menstrual cycle). Healthy non-post-partum clients with no contraindications should be offered surgery as soon as convenient for them. Puerperal sterilization
should be done after delivery any time before six weeks (post-partum), provided there is no infection or contraindication. Post-partum tubectomy can be done in cases who have delivered at home, provided they have been immunized against tetanus and the possibility of infection has been ruled out (pro-phylactic antibiotic coverage is advised). In clients seeking medical termination of pregnancy (MTP) services, tubal sterilization can be performed concurrently. For those who have had a spontaneous abortion, post-abortion tubectomy can be performed, with antibiotic coverage, only in the absence of anaemia and infection. If there is any question or likelihood of a post-abortion infection, such cases may be postponed.

All supplies and drugs must be handled to ensure sterility and nontransmission of viruses or bacteria.

2.3.3 **Anesthesia/ Analgesia**

a) **Local Anesthesia** – Local anesthesia with mild systemic analgesia is the first-choice recommendation in female sterilization procedures. Following are requirements for provision of local anesthesia:

(i) Pre-operative instructions as per 2.2.1 must be provided.
(ii) Communication must be maintained with the patient throughout this awake operative procedure, unless she is well sedated.
(iii) Personnel and facilities must meet requirements or provision of tubectomy services.
(iv) Pre-operative or intra-operative sedation may be administered. The usual drug used is diazepam 5-10 mg, which may be given with a sip of water 30-60 minutes prior to surgery, or it may be given slowly by intravenous (IV) at the time of surgery.
(v) Analgesia must be administered to supplement the local anesthetic. It may be provided either by IV or intramuscularly (IM). The usual drug is pethidine 50 mg or more, depending upon the weight of the client.
(vi) 1% lignocaine (lidocaine) without adrenaline is the local anesthetic to be used. The maximum dosage is 200 mg or 20 cc of 1% lignocaine (lidocaine) (2% solution of 10 ml to be diluted with equal amount of distilled water).
(vii) Atropine 0.25 mg (IM or IV) must be given in all laparoscopy cases.
(viii) Adequate time must be allowed for medication to be effective.

b) **General Anesthesia**

(i) General anesthesia is used only for the following conditions:
   A. Non-co-operative patient
   B. Excess obesity (contraindication for local anesthesia)
   C. Allergy to local anesthetic drugs
   D. Other medical conditions

(ii) The following are requirements when providing general anesthesia:
   A. Pre-operative instructions as per 2.2.1 must be provided.
B. personnel, facilities, and equipment must meet necessary standards for provision of general anesthesia, including the following.

-- Trained anesthetist

-- Oxygen, suction equipment, laryngoscope with appropriate sizes of endotracheal tubes, Boyle’s apparatus, ambubag, anesthetic drugs with antagonists, and emergency drug supply (e.g., atropine, adrenaline, steroids, IV fluids, calcium gluconate, sodium bicarbonate, etc.)

-- Anesthesia table to allow Trendelenburg positioning

c) Monitoring – Medical records are to be maintained relating to anesthetic events.

(i) Preoperatively

A. Pulse, respirations, and blood pressure shall be taken prior to any pre-medication.

B. Pulse, respirations, and blood pressure shall be taken every 30 minutes after premedication.

C. Drugs, dosage, and time administered shall be recorded.

(ii) Intraoperatively

A. Pulse and respirations shall be monitored every five minutes, and blood pressure every 15 minutes.

B. Drugs, dosage and time administered shall be recorded.

(iii) Postoperatively

Pulse, respirations, and blood pressure shall be monitored and recorded every 15 minutes for one hour following surgery, or longer if the patient is unstable or not awake. The patient shall then be monitored three times every hour and again at the time of discharge.

2.3.4 Surgical Technique

a) General Requirements

(i) The client’s bladder must be empty. If there is any question of the status of the bladder, it must be catheterized.

(ii) The operator should clearly identify each fallopian tube, following it to the fimbria. The site of occlusion of the fallopian tube must always be with in 2-3 cm from the uterine cornu in the isthmal portion. (This will improve the possibility of reversal, if required in the future). Care must be taken to avoid any damage to the blood vessels, ovaries, or surrounding tissues.

(iii) Excision of a minimal amount of tissue (less than 1 cm) and avoidance of the use of cautery are required.

(iv) The skin incision will be closed with absorbable or non-absorbable suture, and a small dressing or bandage applied.
b) Minilaparotomy Requirements

(i) An interval minilaparotomy procedure may benefit from the placement of and use of a uterine elevator to assist in bringing the fallopian tubes into the operative field.
(ii) The incision for minilaparotomy (interval or post-partum) may be longitudinal or transverse but is not to exceed 4 cm.
(iii) The suture to be used on the fallopian tubes for the modified Pomeroy procedure is O chromic catgut.

c) Laparoscopy Requirements

(i) To avoid hypoventilation, the patient must not be placed in a Trendelenburg position in excess of 15 degrees.
(ii) Pneumoperitoneum must not exceed 20 mm of mercury or 2 litres of air or gas (preferably carbon dioxide).
(iii) The skin incision is not to exceed the diameter of the trocar.
(iv) The trocar is to be angled toward the hollow of the sacrum. The operator must lift the anterior abdominal wall before introducing the trocar.
(v) The tubal occlusion must always be done with approved Falope-Rings (no cautery is to be used). The following precautions are to be followed in applying rings:
   A. Draw the tube slowly and smoothly into the sleeve of the laparoscope after proper identification. (Include only the amount of tube necessary to adequately provide occlusion. Refer to 2.3.4 a. ii for site of occlusion).
   B. To prevent injury to the mesosalpinx, avoid pulling up or back on the scope or applicator.
   C. Do not apply the rings in cases of thick, oedematous, or fixed tubes. In such cases, tubal occlusion can be done with laparotomy under general anesthesia.
(vi) After applying the second ring, the operator will systematically inspect the pelvis to verify that both tubes are now occluded, that there is no unusual bleeding, and that there is no visceral injury.
(vii) The operator expels all the gas from the abdominal cavity before removing the trocar.

2.3.5 Postoperative Care

a) The client is monitored as described in 2.3.3.c.
b) The client may be discharged when the following conditions are met:
   (i) More than six hours from the procedure have passed.
   (ii) The client is alert and ambulatory.
   (iii) The client’s vital signs are stable and normal.
   (iv) The client has been seen, evaluated, and discharged by physician. Whenever necessary the client should be kept overnight.
c) The client must be accompanied by someone where she is discharge.
d) Written and verbal instructions are to be given to the client before discharge (see 2.2.2).

e) Analgesics and antibiotics must be provided as required. (Other indicated medications are likewise to be provided and prescribed prior to discharge).

f) The acceptor is to be provided with an identity card indicating date and type of surgery, method used, name of institution, and date and place of follow-up.

g) Complications arising during surgery or post-surgery, including major and minor events, are to be reported as indicated in the Quality Assurance Manual.

2.4 Follow-up procedures

Irrespective of the type of tubectomy performed, the following schedule should be followed:

2.4.1 First Follow-up – Seven days after surgery the client is to come or have the wound examined, and to have questions answered. A pelvic examination may be done if indicated.

2.4.2 Second Follow-Up – After one month or after her first menstrual period, whichever is earlier, the client should return for a second follow-up check-up. If she has missed her period or is experiencing a menstrual abnormality, she must be examined to be sure she has not become pregnant.

2.4.3 Emergency Follow-Up – This can be done at any time after surgery.

2.4.4 Subsequent Follow-Up – Visits will occur if the client has any complications or questions.

2.4.5 Consideration can be given to having no required follow-up for clients except when a pregnancy or complication occurs. Post-operative instructions must be clear and complete enough so clients can identify these problems.

2.5 Complications of Female Sterilisation Procedures and their Management

2.5.1 Intra-Operative Complications

a) Injury to intra-abdominal viscera (i.e., small or large bowel) and blood vessels—Must be repaired immediately. If necessary, the operator must obtain assistance of a surgical colleague.

b) Respiratory depression or arrest—The surgical team should do the following: Keep the airway open breathe for the patient using manual resuscitation equipment with oxygen; assess the circulation by monitoring pulse, blood pressure, and respiration give naloxone 0.4-0.8 mg intravenously if a narcotic (e.g.,
pethidine) was used (this dose may be repeated in 2-3 minutes if respiratory function has not improved).

c) **Cardiac arrest**—The surgical team should do the following: Once cardiac arrest is confirmed, give an immediate chest thump and begin external cardiac massage; breathe for the patient as in 2.5.1. b. above; cannulate a vein and give appropriate resuscitative drugs; apply external counter shock if an electrical defibrillator is available.

d) **Cardio-respiratory embarrassment, mediastinal emphysema, or pneumothorax due to too much gas in the peritoneal cavity or in the tissue plane**—Remove the gas immediately by putting a needle in the pleural cavity or mediastinum, and remove gas from the peritoneal cavity.

e) **Injury to urinary bladder**—Must be closed in two layers, and catheter must be left in place as long as necessary.

f) **Uterine perforation due to introduction of uterine elevator from below**—Needs to be repaired immediately if there is bleeding; otherwise, these patients need to have further hospital observation to be certain they are stable.

g) **Bleeding from the mesosalpinx**—Can frequently be treated through the laparoscope with cautery, rings, or other therapy. If this does not suffice, the bleeding should be controlled immediately by laparotomy.

h) **Gas or air embolism**—Very rare condition. The usual treatment is positive pressure oxygenation.

i) **Vaso-vagal attack**—Can be treated with administration of atropine 0.25 mg IV and oxygen.

j) **Convulsion and toxic reactions to local anesthesia**—In such cases injection of diazepam 5-10mg IV and oxygen inhalation are required. Administration of IV is not generally required, but may be needed on occasion. Surgery should be stopped and the patient allowed to recover. Further surgery should be performed at a centre with a full range of service.

### 2.5.2 Immediate Post-Operative Complication

a) **Intestinal obstruction, paralytic ileus, and peritonitis**—These patients should be given nothing orally, and should be on nasogastric suction, IV fluids, and antibiotics and analgesics as indicated.

b) **Hematoma in the abdominal wall**—A small one will resolve with no therapy, while a large one, particularly if infected, may need
evacuation drainage and treatment with antibiotics. Consider early operative intervention because of a possible visceral injury.

c) **Wound sepsis**—Small stitch abscess can be treated with drainage and dressings. However, severe sepsis needs opening of the incision and drainage of the pus. Further treatment will be with dressing, antibiotics, and analgesics.

d) **Tetanus** – A rare complication. If tetanus is detected, the patient must be transferred to a proper center for treatment immediately.

### 2.5.3 Delayed Complications

a) **Menstrual irregularities (e.g., menorrhagia, scanty period)** --- Reassurance is all that is needed in most cases and treatment based upon gynecologic need.

b) **Incisional hernia** – Needs surgical repair. This is a rare complication.

c) **Chronic pelvic inflammatory disease** --- Usually presents as pelvic pain and requires treatment with bed rest, antibiotics, and analgesics.

d) **Psychological problem** (E.g., depression) – Discussion of the problem, clarification of the role of sterilisation, ad answering questions are important. Appropriate referral should be given to the patient.

e) **Failure of the operation, leading to pregnancy** --- This may be due to either technical deficiency in the surgical procedure or spontaneous recanalisation. The patient should be offered MTP or be medically supported throughout a pregnancy. She should be offered repeat surgery as indicated.

f) **Ectopic pregnancy** – Early diagnosis and treatment are key to reducing morbidity and mortality.

### 3. STANDARDS FOR MALE STERILISATION

The counseling, informed consent, and eligibility standards in Section 1 apply to both male and female sterilization acceptors.

#### 3.1 Medical Contraindications

Generally speaking, there are no absolute contraindications for sterilization on medical grounds. Medical screening of clients is required to assure that patients who are at high risk of complications are referred to an appropriately equipped facility with personnel trained to deal with their medical or surgical problems. In addition, it is necessary to counsel a couple that the simplest sterilization procedure, with the lowest morbidity, is vasectomy if the man has a medical problem or relative contraindication for vasectomy, the more appropriate choice may be for his wife to undergo tubectomy.
The following relative contraindications are conditions for which referral, further evaluation or counseling, or provision of another contraceptive method is warranted.

3.1.1 Mental illness (the client must be able to provide informed consent)
3.1.2 Physical illness
   a) Acute febrile illness
   b) Jaundice or other chronic liver disease
   c) Anaemia with hemoglobin less than 10 gm%
   d) Chronic systemic disease, including tuberculosis, bronchial asthma, blood dyscrasias, heart disease, uncontrolled diabetes, hypertension, and thyrotoxicosis
   e) Bleeding disorder
   f) Severe nutritional deficiency, such as hypoproteinaemia and vitamin deficiency
   g) Skin conditions involving the operative site, such as thickening, infection or oedema, making surgery difficult (local skin infections or genital tract infections must be treated before vasectomy is performed)
   h) Local genital conditions, including large varicocoele, hydrocoele, inguinal hernia, filariasis (elephantiasis), scar tissue, cryptorchidism, previous scrotal surgery, intra-scrotal mass

3.1.3 Allergies to local anesthesia (alternative anesthesia or procedure must be provided)

3.1.4 Sexual impairment or sexual problems

If there is any question of medical eligibility or need for consultation, the client should be referred to a higher level or service center. Alternatively, the wife may be considered for sterilization.

3.2 Instructions to Clients

Instructions must be given in language the client can understand.

3.2.1 Pre-Operative Instructions
   a) The client must receive a clear description of what will happen prior to and during the sterilization, including a description of the examination, lab tests and surgery.
   b) The client must bathe and wear clean and loose clothing to the OT.
   c) The client should have a light meal on the morning of surgery.
   d) Before entering the OT, he must empty his bladder.
   e) Before entering the OT, he must remove eyeglasses, contact lenses, and dentures.
   f) Someone must be available to accompany the client home after the surgery.
g) He must receive instructions on his post-operative self-care, incision care, when he can resume coitus, and when and where he is to return for follow-up visits.

h) He must receive instructions on where to go if complications (such as infection, swelling of the scrotum, fever, increasing pain, bleeding from the incision) arise.

i) He must receive instructions on how to use the medications prescribed after surgery.

j) The client must understand that he is not sterile immediately and that he or his wife will have to use another method of contraception for at least 20 ejaculations or for three months following surgery.

3.2.2 Post-Operative Instruction

The client should be told to do the following after discharge.

a) Return home after discharge and rest for the remainder of the day. Take adequate rest and limit activity for the next seven days.

b) Resume only normal light work after 48 hours and return to full activity, including cycling, by one week following surgery.

c) Take medicines as advised by the doctor, including analgesics as needed for pain.

d) Resume a normal diet as soon as possible.

e) Keep the incision area clean and dry. Do not disturb or open the bandage or dressings.

f) May bathe after 24 hours following the surgery. When bathing, keep the incision area dry. If the dressing becomes wet, it should be changed.

g) May have intercourse two weeks after surgery. Vasectomy does not interfere with sexual pleasure, ability, or performance.

h) Use a condom or another method of birth control for at least 20 ejaculations or until three months after surgery, since vasectomy does not cause immediate sterility.

i) Report to the doctor or clinic if there is excessive pain, fainting, fever, bleeding, increase in scrotal size, or pus discharge from the incision.

j) Return to the clinic for removal of stitches and post operative check-up in seven days.

k) If there are any questions, contact the health personnel or doctor at any time.
3.3 Clinical and Technical Procedures

3.3.1. History and Physical Examinations

a) Demographic Information – The following information is required: age, marital status, occupation, religion, education, number or living children, and age of youngest child.

b) Medical History
(i) History of illnesses and other medical conditions, including hypertension, anaemia, convulsions, respiratory problems, heart disease, diabetes, bleeding disorders, psychiatric conditions, scrotal or inguinal surgery, genitourinary infection, sexual impairment or sexual abnormality, and allergies to medications.
(ii) Immunisation status of man (for tetanus), of children for six killer diseases: tetanus, tuberculosis, diphtheria, pertussis, poliomyelitis, and measles.
(iii) Addictions (alcohol, smoking, and drugs)
(iv) Current medications
(v) Last contraceptive used by client or his wife.

(c) Physical Examination – Pulse and blood pressure; body weight; temperature; general condition and nutritional status; auscultation of heart and lungs; examination of abdomen, penis, testicles, and scrotum; and other examinations as indicated by client’s medical history or general physical examination.

(d) Laboratory Examinations--- Blood test for hemoglobin, urinalysis for sugar and albumin, and any other laboratory examination as indicated.

3.3.2 Timing of Surgical Procedure

Healthy clients with contraindications should be offered surgery as soon as convenient for them. (Prophylaxis against tetanus should be encouraged prior to surgery).

3.3.3 Anesthesia/Analgesia

a) Local anesthesia— is the first-choice recommendation for vasectomy procedures. Following are requirements for provision of local anesthesia.
(i) Pre-operative instructions as per 3.2.1 must be provided.
(ii) Communication must be maintained with the patient throughout this awake operative procedure.
(iii) Personnel and facilities must meet requirements for provision of vasectomy services.
(iv) Adequate time must be allowed for medication to be effective.
(v) Pre-mediation may be administered to supplement the local anesthetic. This would consist of the oral administration of diazepam 5-10 mg 30-45 minutes before surgery.

(vi) The local anesthetic to be used is 1% lignocaine (lidocaine) without adrenaline. The maximum dosage is 200 mg or 20 cc of % lignocaine (lidocaine) (2% solution of 10 ml to be diluted with equal amount of distilled water).

(b) General anesthesia – is not be used for vasectomy procedures.

c) Monitoring – Medical records are to be maintained relating to anesthetic events.

(i) Pre-operatively
A. Pulse, respirations, and blood pressure shall be taken prior to any pre-medication.
B. Drugs, dosage, and time administered shall be recorded.

(ii) Intra-operatively
A. Pulse, respirations, and blood pressure shall be monitored during surgery as required.
B. Drugs, dosage, and time administered shall be recorded.

(iii) Post-operatively
Pulse, respirations, and blood pressure shall be monitored and recorded if required.

3.3.3 Surgical Techniques

a) Incision — The vasectomy operation is to be done with two incisions located just below the root of the scrotum. The length of each incision shall be no greater than 2 cm. (Smaller incisions will minimize complications).

b) Site of Vasectomy— The vase shall be removed at the mid-scrotal region 1 cm above the convoluted portion of the vas. It must not be cut close to the epididymis.

c) Excision of Vas – The vas shall be separated from tissues and excised in all cases. The portion excised shall not be more than 1 cm in length. The removal of excessive length of vas may make a recanalisation operation difficult if it is required in the future.

d) Tying of Cut Ends of Vas—The excised ends of the vas should be tied with 2’0’ silk, and the sheath of the vas must be interposed between the two cut ends.

e) Skin Wounds – The skin wound should be closed with non-absorbent sutures and covered with a piece of sterile gauze. Use of tincture of benzoin causes excoriation of the scrotal skin and should be avoided. Before closing the wound, the operator should tie all bleeding points
and ensure complete hemostasis to prevent bleeding or hematoma formation.

f) Scrotal Support – The patient should wear a suspensory bandage until stitches are removed (at one week).

3.3.4 Post – Operative Care

a) The client is monitored as described in 3.3.3c.

b) The client may be discharged when the following conditions are met:
   (i) More than 15 minutes from the procedure have passed.
   (ii) The client is alert and ambulatory.
   (iii) The client’s vital signs are stable and normal.
   (iv) The client has been seen, evaluated, and discharged by a physician.

c) The client must be accompanied by someone when he is discharged.

d) Written and verbal instructions are to be given to the client before discharge (3.2.2)

e) Analgesic medications (and other indicated medications) or prescriptions must be provided prior to being sent home.

f) The vasectomy client should wear tight underpants or a loin cloth to keep the scrotum from moving, which might increase the possibility of bleeding and hematoma formation.

g) The acceptor is to be provided with an identity card, indicating date and type of surgery, name of institution, and date and place of follow-up.

h) Complications arising during surgery or post-surgery, including major events, are to be reported as indicated in the Quality Assurance Manual.

3.4 Follow – UP Procedures

The following schedule should be followed:

3.4.1 First Follow - Up – Seven days after surgery, the client is to come or stitch removal, to have the wound examined, and to have questions answered.

3.4.2 Second Follow –up – After three months the client should return for semen analysis.

3.4.3 Emergency Follow – Up – This can be done at any time after surgery.

3.4.4 Subsequent Follow - Up – Visits will occur if the client has nay complications or questions.

3.4.5 Consideration can be given to having no required follow-up for clients expect when a complication occurs or when the client’s becomes pregnant. Post operative instructions must be clear and complete enough so clients can identify problems.

3.5 Complication of Male Sterilisation Procedures and Their Management

3.5.1 Intra-Operative Complications.
Although the incidence is rare, the following may be encountered during the procedure.

a) Transient drop in BP or dizziness—Due to vasovagal attack. In such cases the procedure should be delayed and the patient be allowed to rest; his face should be wiped with cold water and his head lowered. The injection of IM atropine may be of assistance in correcting this problem.

b) Convulsion and toxic reactions to local anesthesia – In such cases injection of diazepam 5-10 mg IV and oxygen inhalation are required. Administration of IV fluids is not generally required, but may be needed on occasion. Surgery should be stopped and the patient allowed to recover. Further surgery should be performed at a center with a full range of service.

c) Injury to testicular artery – This complication is very rare, but if it does occur, both ends of the artery must be lighted.

3.5.2 Immediate post-operative complications

a) Swelling of the scrotal tissue, bruising, and pain – These short-term minor complications often disappear without treatment within 24-48 hours; ice packs, scrotal support, and simple analgesics may provide relief.

b) Hematoma – If small, it can be treated by scrotal support, analgesics, and antibiotics. A large hematoma may, in addition, need evacuation, antibiotics, and further treatment. If a hematoma is detected early, it is desirable to cut the stitches, remove the clots, and look for the bleeding or oozing points, which should be tied. Referral should be considered.

c) Infection
   (i) Stitch abscess --- Must be treated with removal of stitch, drainage, and application of dressings.
   (ii) Wound sepsis --- In case of severe sepsis, the wound should be opened and pus drained. Further treatment should include application of dressings and administration of antibiotics and analgesics.
   (iv) Orchitis --- Cases of severe orchitis may need hospitalization. Cases must be treated with antibiotics, analgesics, support, and bed rest.

d) Tetanus --- A rare complication. If tetanus is detected, the patient must be transferred to a proper center for treatment immediately.

3.5.3 Delayed Complications

a) Spam granuloma --- Can occur either at the site of vas occlusion or at the site of the epididymis. The majority of these are symptomless and
respond to analgesics and anti-inflammatory drugs. Very occasionally a persistent and painful granuloma may necessitate surgical
b) Psychological problems --- Uncommon, but discussion of the problem, clarification of the role of sterilization, and answering questions are important. Appropriate referral should be given to the patient.
c) Failure of vasectomy --- Incidence is quite low, but failure may occur because of technical deficiencies in the surgical procedure or spontaneous recanalisation. The client’s wife should be offered MTP or be medically supported throughout pregnancy. The client should be offered a repeat surgery as indicated.

4. PHYSICAL REQUIREMENTS (INSTITUTIONSET – UP)

4.1 Facilities
Facilities performing voluntary sterilization procedures in the National Family Welfare programme must meet the following requirements.

4.1.1 The clinic facility shall be well ventilated and fly proof, with a concrete or tile floor that can be cleaned thoroughly.
4.1.2 There must be running water.
4.1.3 There must be an electricity supply with a stand by generator and other light source.
4.1.4 Adequate space must be provided for the various programme activities separate areas should be earmarked for the following.
   a) Reception
   b) Waiting rooms (separate room for males and females)
   c) Counselling rooms (separate room for males and females) – These rooms should have facilities for maintaining privacy and avoiding any interruptions.
   d) Laboratory with facilities for blood and urine examinations.
   e) Physical examination rooms (separate rooms for males and females) – A single room can be used if one client is examined at a time, but privacy at the time of examination must be maintained.
   f) Pre-operative preparation room – The room should have facilities for shaving, washing, changing clothes, and pre-medication.
   g) Hand washing (scrubbing) area (an ante – room near the OT) – The area must be equipped with elbow – or foot- operated taps.
   h) Sterilisation room (for autoclaving, washing, and cleaning equipment; preparation of sterile packs)—Ideally this is near the OT. (The scrubbing area and sterilization room can be in one room if space permits).
   i) Operating Theatre--- this should be isolated and away from the general thoroughfare of the clinic. The OT should be large enough to allow operating staff to move freely and to accommodate all the necessary equipment lighting should be adequate. The room should be easy to enter and to leave I case of an emergency. The room, with the
surrounding corridors and space, should be fitted with fly-proof nettings. The OT should be locked when not in use and fumigated at least once per week.
j) Recovery room or ward – This area must be spacious and well ventilated. The number of beds will be determined by the available space; this room should be situated adjacent to the OT.
k) Follow-up room – As follow-up is emphasized in this sterilization programme, a separate designated space should be allocated on the clinic premises.
l) Adequate toilets --- A sufficient number of sanitary-type toilets with running water must be available to clients and staff.
m) Storage area— This must not be in the OT.
n) Physicians’ and nurses’ rooms
o) Office rooms
Toilet, storage, and office rooms are considered auxiliary space. The identification and placement of these rooms depend on the available space in the clinic.

4.2 Equipment and Supplies
All voluntary sterilization clinics should have the following basic and emergency care equipment. (For convenience, equipment has been listed by area in which it is required.

4.2.1 Basic Equipment

a) Examination Room
   (i) Blood pressure apparatus
   (i) Thermometer
   (ii) Stethoscope
   (iii) Side light
   (iv) Weighing scale
b) Laboratory
   (i) Hemoglobin meter and accesses
   (ii) Microscope
   (iii) Red blood cell and white blood all pipettes
   (iv) Neuber counting chamber
   (v) Apparatus to estimate albumin and sugar in urine
   (vi) Reagents
c) Sterilisation Room
   (i) Autoclave
   (ii) Steriliser
   (iii) Autoclave drums (bins)
d) Operating Theatre
   (i) Operating table
(ii) Light
(iii) Instrument trolley
(iv) Minilaparotomy kit (see Annexure II)
(v) Labaroscopy kit (see Annexure III)
(vi) Vasectomy kit (see Annexure IV)
(vii) Blood pressure instrument
(viii) Stethoscope
(ix) Extra syringe with needles (22, - G, 1 ½ in long)
(x) Emergency equipment and drugs

e) Recovery Room
(i) Patient cot with mattress sheet, pillow, pillow cover, and blankets
(ii) Sphygmomanometers
(iii) Stethoscope
(iv) Thermometers

4.2.2. Emergency Care Supplies

a) Equipment

(i) Airway (no.2)
(ii) Manual resuscitator or ambubag with its connection
(iii) Suction machine (electric or manual)
(iv) Oxygen inhalation unit with two cylinders
(v) Ancillary instrument tray containing side retractors, artery forceps, scissors, needle holder, scalpel handle with blade.

b) Emergency Drugs

(i) Injectable pethidine
(ii) Injectable dexamethasone (Decadron)
(iii) Injectable adrenaline
(iv) Injectable naloxone (Narcan)
(V) Injectable sodium bicarbonate 7.5%
(vi) Injectable Calcium gluconate 10%
(vii) Injectable aminophylline
(viii) Injectable furosemide (frusemide, Lasix)
(ix) Injectable glucose 25%
(x) Intravenous infusions such as injectable dextrose 5% in normal saline or injectable dextrose 5% in water with IV administration set and large caliber needle.

The emergency care supplies and drugs must be kept in an accessible place. All staff must be familiar with their location and proper use. Routine evaluation must be undertaken so that all items are in good working order. A nearby centre must be identified that has facilities for referral of complicated cases. A written agreement between the clinic and hospital for transfer must be available for reviewers.

5. ASEPSIS ISSUES (PREVENTION OF INFECTION)
5.1 Guiding Principles
Meticulous aseptic technique is mandatory in all male and female voluntary sterilisation programmes: It must be stressed in training, programme monitoring, and supervision. Aseptic technique is required at all times, without compromise, before, during and after surgery.

5.2 Pre-Operative preparation (Client)

5.2.1 The client should bathe before surgery, preferably before coming to the clinic, or in the clinic. In all case, the operative site should be carefully and thoroughly cleaned with soap and water.

5.2.2 The medical staff should determine and evaluate the client’s history of cuts and wounds for the month preceding surgery, and every client should be examined for infected foci.

5.2.3 If the client has a local infection, the operation should be postponed and a temporary contraceptive method provided.

5.2.4 Shaving of hair at the operative site should be done immediately pre-operatively to reduce the time for potential proliferation of bacteria and to reduce the risk of infections.

5.2.5 The performance of a careful pelvic examination is required before interval tubectomy. Such an examination can detect a large majority of cases of active pelvic infection.

5.2.6 Female clients should change from their street clothes into theatre clothes pre-operatively.

5.3 Skin preparation

General guidelines follow. Annexure v provides information about various antiseptic agents.

5.3.1 The operative site shall be prepared immediately preoperatively with an antiseptic solution such as iodine and alcohol, iodophor, chlorhexidine, or Savlon.

5.3.2 Alcohol preparations shall not be applied to the sensitive genitalia.

5.4 Surgical personnel

5.4.1 Personnel must change their shoes before entering the OT.

5.4.2 For female procedures, personnel must change into theatre clothes: gowns, gloves, caps, and masks. For vasectomy procedures not done in an OT, personnel must at minimum wear caps, masks, and surgical gloves.

5.4.3 For both tubectomy and vasectomy, aseptic procedures must be strictly followed.

5.4.4 Personnel who have any infection should not be allowed in the OT.
5.4.5 All personnel must scrub thoroughly with soap and water or antiseptic agents, i.e., hexachlorophene, chlorohexidine, or an iodine preparation (see Annexure V). A brush must be used on all surfaces and under the fingernails.

5.4.6 The surgical mask must be kept over the bridge of the nose at all times.

5.4.7 Sterilised and hole-less gloves are mandatory. Gloves must be changed between cases.

5.4.8 Movement into and out of the OT must be minimised.

5.4.9 The surgeon and his or her assistant should scrub thoroughly between procedures. 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 three-minute scrub every hour or after every four or five cases (which ever comes first) to prevent recolonisation of the skin by micro-organisms. They also should scrub after every infected case, if they have left the OT for any reason, and whenever gloves are torn.

5.5 Operating Theatre

5.5.1 In stationary clinics, the OT shall have a tile or concrete floor that can be easily and thoroughly cleaned.

5.5.2 The OT shall be enclosed, free of dust and flyproof.

5.5.3 It shall have adequate lighting.

5.5.4 It should be well isolated from the part of the clinic that is open to the public.

5.5.5 The OT should be locked when not in use; it shall not serve as a storeroom.

5.5.6 Similarly, temporary and mobile services must use OTs that enable the operating team to maintain strict asepsis.

5.5.7 The OT should be thoroughly scrubbed and disinfected at least once a week, on a non-working day. It should be fumigated at least once a week, on a non-working day, if there is a problem with insects.

5.5.8 Windows in the OT be 1.8m (6ft) above the floor or high enough to prevent cross-ventilation in the operative field.

5.5.9 Ideally, no operations involving dirty or infected cases should be performed in the same OT as voluntary sterilisation procedures. If the same OT must be used, it shall be thoroughly cleaned and disinfected after surgery on infected cases.

5.6 Surgical Technique

Good surgical technique that minimizes tissue trauma and ensures adequate hemostasis will reduce the occurrence of infection. In vasectomy, hemostasis is critical to help prevent development of scrotal hematomas and the accompanying risk of infection.

5.7 Preventing Tetanus
5.7.1 To prevent tetanus, programmes must adhere strictly to aseptic procedures and standards.

5.7.2 Using tetanus toxoid, hyperimmune serum, or prophylactic antibiotics at the time of surgery does not guarantee the prevention of tetanus. (Under some circumstances, these may offer some measure of protection).

5.7.3 Strict aseptic techniques combined with proper disinfection and sterilisation of equipment are the most appropriate methods for preventing tetanus. The following points are essential:

   a) All procedures outlined here must be followed.
   b) Staff must perform standard autoclave testing.
   c) Personnel who are responsible for disinfecting, sterilising, and using the autoclave must be supervised routinely.

5.8 Post-Operative Care

5.8.1 After the operative procedure, an ordinary sterile dressing should be applied.

5.8.2 Incisions should be kept clean and dry, and the client should not bathe for 24 hours following surgery.

5.8.3 Routine use of prophylactic antibiotics is not necessary.

5.8.4 Every client should receive clear, simple instructions for post-operative care, written as well as oral (see 2.2.2 and 3.2.2). All clients undergoing vasectomy or tubectomy should be instructed on how to care for their wound and dressing, what side effects to expect, when to resume normal activities, and what to do and where to go if a complication should develop.

5.8.5 Removal of stitches must be done under proper aseptic conditions.

5.9 Sterilisation and Disinfection of Equipment

5.9.1 Before equipment used for tubectomy or vasectomy is disinfected or sterilized, a thorough mechanical cleaning. Using a brush and soap and water, is necessary to remove blood and organic soil that may trap microorganisms.

5.9.2 Non-endoscopic equipment, gloves and linen should be sterilized in a steam autoclave. If an autoclave is not available, instruments may be sterilized by dry heat or immersion in disinfectant solution. Recommended methods are outlined in Annexure VI.

5.9.3 Suitable cold disinfectants for endoscopes (laparoscopes and Laprocators) contain activated glutaraldehyde (Cidex, Spericidin). A routine 15 minute soak in Cidex or 1-minute soak in Sporicidin before each case is sufficient for disinfection (see Annexure VI). Endoscopes are not heat – stable and cannot with stand autoclaving or prolonged
routine immersion in liquid chemicals necessary for sterilisation. However, after an infected case, laparoscopic equipment should be disassembled, cleaned, and sterilized by an overnight soak in activated glutaraldehyde.

5.9.4 Sterilising laparoscopic equipment using ethylene oxide gas in an effective method, but is not possible in most settings.

5.9.5 Ultraviolet light has not been proven effective as a sterilizing agent and is not recommended.

6. STANDARDS FOR MOBILE SERVICES

The standards provided for mobile sterilisation service in general are the same as those required for permanent OT sterilisation services. The following standards apply in addition to those in the preceding sections.

6.1 Staffing

6.1.1 No training shall be conducted in mobile sterilisation programmes. The personnel performing operations must be experienced, trained surgeons and staff.

6.1.2 Coordination with and utilisation of staff from the area is desirable.

6.2 Facility

The basic sterilisation facility standards as outlined in Section 4 must be met. It is recognized that counseling and the pre-operative examination may be done at a time separate from the surgery. Specifically, however, the standards for the OT and the recovery room must be maintained.

6.3 Counselling / Informed Consent/Eligibility

6.3.1 The standards established in Section 1 must be adhered to.

6.3.2 The final assessment of clients in terms of being certain they are eligible and have made an informed choice for sterilisation is the responsibility of the mobile team.

6.4 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 this setting.

6.5 Emergency Back-Up
6.5.1 A formal, established relationship with a local hospital that can and will accept cases with complications must be maintained.

6.5.2 The name of a local physician must be given to patients at the tie of their discharge from the mobile centre.

6.6 Client Discharge from Mobile Clinics

The surgeon or member of the surgical team will see all patients before discharge.

6.7 Follow-Up

6.7.1 Ideally, the mobile team should return and be available for follow-up.

6.7.2 A local physician can provide follow-up services for clients. This person’s name and time of visit must be given to the patient at time of discharge.

6.8 Medical Termination of Pregnancy (MTP) and Post-Partum Tubectomy in Mobile Clinics

6.8.1 If trained OT personnel and materials are available, MTP may be performed in the mobile setting up to eight weeks after the client’s last menstrual period.

6.8.2 No post-partum sterilizations will be done in mobile settings.

6.9 Training

No training of personnel will take place in mobile settings.

6.10 Anesthesia

6.10.1 Only local anesthesia will be offered in mobile settings.

6.10.2 An anesthetist must be available when tubectomies are performed in mobile settings.

6.11 Asepsis Standards and Mobile Settings

6.11.1 The asepsis standards as described in Section 5 apply in mobile settings.

6.11.2 Adequate skin preparation needs special emphasis.

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

6.11.4 Standard OT gowns, masks, caps and gloves must be used. Gloves must be changed between each case. (See 5.4.2)

REFERENCES
Atlanta: Printed Matter.


CONSENT AND APPLICATION FOR STERILIZATION OPERATION

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<tr>
<th>Name</th>
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<tr>
<td>PHC/Urban centre</td>
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Dear Sir:

Please arrange to have me sterilized. My age is ---------------------------
and my husband’s/wife’s age is -----------------------------.

We are married and my wife/husband is alive. We have -----------------
male and ------------------------------------- female living children.
The age of the youngest child is ------------------.

The decision to undergo the sterilization 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.
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 government hospital and operation surgeon
will not be held responsible by me or my relatives or any other
person whatsoever. My spouse has not been sterilized previously.
I am also aware that I am undergoing an operation which carries
an element of risk. The eligibility criteria for the operation have been
explained to me, and I affirm that I am eligible to undergo the
operation according to these criteria. I agree to undergo the operation
under any kind of anesthesia which the surgeon thinks suitable
for me and to be given other medicines as considered appropriate
by the doctors concerned.

Religion: ________________________________
Income: ________________________________
Education: ______________________________
Occupation: ______________________________

____________________________________
Signature of acceptor
1. I know Shri/Smt.--------------------------------------------- To the best of my knowledge the information given by him/her is correct. His/her number in the eligible couple register of the PHC/Urban centre ---------------------------------------------- is ------------------------

___________________________    _________________________

Signature of counselor      Signature of motivatior

_________________________

Full Address

3. I certify that I have satisfied myself that 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 acceptor that this form has the authority of a legal document.

_____________________________     ___________________________________

Signature of surgeon     Signature of medical officer

(name and address)

DENIAL OF STERILISATION

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

1.
2.

He/she has been provided the following alternative method of contraception

______________________________

Signature of counselor of surgeon making decision
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**Optional**

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<td>Syringe, control, 5cc</td>
<td>1</td>
</tr>
</tbody>
</table>
# ANNEXURE V

## ANTISEPTIC AGENTS USEFUL FOR VOLUNTARY SURGICAL CONTRACEPTION

<table>
<thead>
<tr>
<th>Group</th>
<th>Activity against bacterial</th>
<th>Potential uses</th>
<th>comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gram positive</td>
<td>Most gram negative</td>
<td>Preteus and pseudomonas</td>
</tr>
<tr>
<td>Iodine preparations</td>
<td>Very Good</td>
<td>Very Good</td>
<td>Good</td>
</tr>
<tr>
<td>Iodine and alcohol* (tincture of iodine)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lodophors* (Batadine)</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Alcohols (isopropyl, 70% or greater, ethanol)</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Hexachlorophene* (pHisoHex)</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
</tr>
<tr>
<td>Quatemary ammonium compounds</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
</tr>
<tr>
<td>Chlorhexidine* (Hibitane, Hibiscrub)</td>
<td>Good</td>
<td>Good</td>
<td>Fair</td>
</tr>
</tbody>
</table>

* Preferred agents.
Source: Adapted from Porter, 1987. Used by permission.
### METHODS OF STERILISATION AND DISINFECTION FOR VARIOUS MATERIALS

<table>
<thead>
<tr>
<th>Material</th>
<th>Method</th>
<th>Autoclave:</th>
<th>120° C (250° F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lines</td>
<td>(drapes, songes, scrub suits, operating packs, etc)</td>
<td>10 kg (20 lb.) pressure</td>
<td>30 minutes Valid for one week</td>
</tr>
<tr>
<td>Rubber goods</td>
<td>(gloves, catheters, and rubber tubing)</td>
<td>120° C (250° F)</td>
<td>15-20 minutes</td>
</tr>
<tr>
<td></td>
<td>Immersing in</td>
<td>Sporicidin</td>
<td>Cidex</td>
</tr>
<tr>
<td></td>
<td>Disinfectant solution:</td>
<td>6 3/4 hours</td>
<td>10 hours</td>
</tr>
<tr>
<td></td>
<td>Sterilisation time</td>
<td>1 in 5</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Dilution</td>
<td>10 minutes</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Surgical instruments*</td>
<td>Dilution</td>
<td>1 in 6</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Dry heat sterilizer:</td>
<td>160° C (320° F)</td>
<td>60 minutes</td>
</tr>
<tr>
<td></td>
<td>Immersing in</td>
<td>Sporicidin</td>
<td>Cidex</td>
</tr>
<tr>
<td></td>
<td>Disinfectant solution:</td>
<td>6 3/4 hours</td>
<td>10 hours</td>
</tr>
<tr>
<td></td>
<td>Sterilisation time</td>
<td>1 in 5</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Disinfection time</td>
<td>10 minutes</td>
<td>15 minutes</td>
</tr>
<tr>
<td></td>
<td>Dilution</td>
<td>1 in 16</td>
<td>None</td>
</tr>
</tbody>
</table>

* Unwrapped surgical instruments are for immediate use. If wrapped, instruments can be used for up to one week.