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PREFACE

Male circumcision has been performed on boys and young men for many years, primarily for religious and cultural reasons or as a rite of passage to mark transition to adulthood. Data from cross-sectional epidemiological studies, conducted since the mid 1980s, show that circumcised men have a lower prevalence of HIV infection than uncircumcised men. This is supported by data from prospective studies that show a lower incidence of acquiring HIV infection in circumcised men than in uncircumcised men. While adjustment for cultural and social factors associated with male circumcision was included in the analysis, doubts remained as to whether promoting male circumcision among men who would not otherwise be circumcised would result in a lower incidence of HIV infection among circumcised men. Three randomized controlled trials were launched in Kenya, Uganda and South Africa in 2004 to address this question. The results from the South African study were published in late 2005 and showed a 2.5 fold lower incidence of HIV infection among men randomized to immediate compared with delayed circumcision. Confirmatory results from the two other trials were released in December 2006. A further trial assessing the impact of male circumcision on the incidence of HIV infection in female partners is not expected to provide results before 2008.

There is increased demand for male circumcision in several high HIV incidence countries and little technical guidance on how such services can be safely expanded given the limited resources available. Reports of high complication rates following circumcisions performed by traditional circumcisers in young men in southern and eastern Africa are common, though their true incidence is not known. Technical guidance on the provision of safe male circumcision services is therefore necessary. Although circumcisions are widely performed by surgeons and general practitioners in an appropriate clinical environment, resources are not adequate to meet the anticipated increased demand.

This technical manual on male circumcision is aimed at providers of male circumcision services and programme managers. There is no attempt made to describe all possible methods for male circumcision. The methods covered have been selected on the basis of their safety and practicality for use in resource-limited settings. It will form a comprehensive package that will be accompanied by training guides and materials as well as a certification framework for national medical authorities and programme managers to ensure high quality services. While providing detailed technical information on the different surgical approaches, the manual also addresses broader issues of sexual and reproductive health of men, and emphasizes that male circumcision must be set within the context of other strategies for reducing risk of HIV infection. A full description of surgery and anaesthesia best practices in resource-limited settings can be found in the WHO publication Surgical Care at the District Hospital.

The manual was developed by the World Health Organization, in collaboration with UNAIDS and JHPIEGO, as part of work to support countries to provide safe male circumcision services, and ensure that circumcised men do not perceive themselves as fully protected against HIV and other sexually transmitted infections and consequently forgo other HIV risk-reduction strategies.

Geneva, March 2007
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Chapter 1

Benefits and risks of male circumcision

Summary

• Circumcision is the surgical removal of the foreskin, the fold of skin that covers the head of the penis.
• The benefits of male circumcision include a reduced risk of urinary tract infections in childhood, a reduced risk of ulcerative sexually transmitted diseases in adulthood, protection against penile cancer, a reduced risk of cervical cancer in female sex partners, and prevention of balanitis (inflammation of the glans), posthitis (inflammation of the foreskin), phimosis (inability to retract the foreskin) and paraphimosis (inability to return the retracted foreskin to its original location).
• Complication rates following male circumcision are very low when it is performed by well equipped and trained health care providers.
• Numerous regional and global studies since the 1980s have noted a lower risk of HIV infection in circumcised men, as well as lower HIV prevalence in populations where male circumcision is common.
• A randomized controlled trial in South Africa demonstrated that male circumcision reduced the risk of acquiring HIV infection by 60%.
• This result was confirmed by two further randomized trials in Kenya and Uganda, which both showed over 50% reduction in HIV incidence among men who were circumcised.

INTRODUCTION

What is male circumcision?

Circumcision is the surgical removal of the foreskin, the fold of skin that covers the head of the penis. It is widely practised for religious and traditional reasons, often within the first two weeks after birth, or at the beginning of adolescence as a rite of passage into adulthood. It may also be performed for medical reasons, to treat problems involving the foreskin.

How circumcision is performed

During a circumcision, the foreskin is freed from the head of the penis (glans), and removed. When done in a newborn baby, the procedure is simpler and quicker than in adolescents and adults. Superficial wound healing after circumcision in adults generally takes 5–7 days. However, about 4–6 weeks are needed for the wound to heal fully. In babies and young boys, the healing time is considerably shorter.
• increased sensitivity of the glans penis for the first few months after the procedure;
• irritation of the glans;
• meatitis (inflammation of the opening of the urethra);
• injury to the penis;
• adverse reaction to the anaesthetic used during the circumcision.

These complications are rare when circumcision is performed by well trained, adequately equipped, experienced health care personnel, and are usually easily and rapidly resolved. Data from controlled trials show that fewer than 1 in 50 procedures result in complications.4, 6

MALE CIRCUMCISION AND HIV INFECTION

There is currently great interest in the role of male circumcision in preventing HIV infection. Studies have noted a lower risk of infection in circumcised men, as well as comparatively low HIV prevalence in populations where male circumcision is common. Randomized controlled trials of circumcision in three African countries have confirmed that circumcised men have a lower risk of HIV infection. WHO and UNAIDS issued guidance in March 2007 stating that male circumcision be recognized as an efficacious intervention for HIV prevention.12

The evidence linking male circumcision and HIV

A systematic review and meta-analysis of 28 published studies found that uncircumcised men are 2–3 times more likely to be infected with HIV than circumcised men, with the difference being most pronounced in men with high exposure to HIV infection.5 A sub-analysis of 10 African studies, involving men considered to be at high risk of becoming infected, found a 3.4 times higher incidence of HIV infection among those who had not been circumcised.5 In a prospective study in Uganda of HIV-negative men whose partners were HIV-positive, none of 50 circumcised men became infected within two years, compared with 40 of 137 uncircumcised men.14

Male circumcision and regional differences in HIV prevalence

• The geographical regions in sub-Saharan Africa where men are more commonly circumcised overlap with areas of lower HIV prevalence. An extensive study by the Joint United Nations Programme on HIV/AIDS (UNAIDS) investigated behavioural and other factors that could account for the large disparities in HIV prevalence across different African regions.15 A low prevalence of male circumcision and a high prevalence of genital herpes (which is more common in uncircumcised men) emerged as the principal determinants of the differences in HIV rates.
• Table 1.1 shows the prevalent HIV infection in a number of countries with low or high rates of male circumcision. Countries in sub-Saharan Africa where male circumcision is common (>80%) generally have HIV prevalence levels well below those of countries where circumcision is less common (<20%), despite the presence of other risk factors for heterosexual HIV transmission, such as high frequency of multiple sexual partners, low rates of condom use and high prevalence of other STIs. HIV prevalence in the countries of south and south-east Asia where nearly all men are circumcised (Bangladesh, Indonesia, Pakistan, Philippines) remains extremely low, despite patterns of risk factors for HIV and other STIs similar to those found elsewhere in the region.

Table 1.1. HIV prevalence according to frequency of male circumcision

<table>
<thead>
<tr>
<th>Country</th>
<th>HIV prevalence (%)</th>
<th>Country</th>
<th>HIV prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low circumcision rate (&lt;20%)</strong></td>
<td></td>
<td><strong>High circumcision rate (&gt;80%)</strong></td>
<td></td>
</tr>
<tr>
<td>Botswana</td>
<td>4.1</td>
<td>Benin</td>
<td>1.8</td>
</tr>
<tr>
<td>Malawi</td>
<td>14.1</td>
<td>Cameroon</td>
<td>5.4</td>
</tr>
<tr>
<td>Mozambique</td>
<td>16.1</td>
<td>Democratic</td>
<td>3.2</td>
</tr>
<tr>
<td>Namibia</td>
<td>19.6</td>
<td>Republic of</td>
<td>Congo</td>
</tr>
<tr>
<td>Rwanda</td>
<td>3.1</td>
<td>Gabon</td>
<td>7.9</td>
</tr>
<tr>
<td>Swaziland</td>
<td>33.4</td>
<td>Gambia</td>
<td>2.4</td>
</tr>
<tr>
<td>Zambia</td>
<td>17.0</td>
<td>Guinea</td>
<td>1.5</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>20.1</td>
<td>Kenya</td>
<td>6.1</td>
</tr>
<tr>
<td><strong>South and south-east Asia</strong></td>
<td></td>
<td><strong>Thailand</strong></td>
<td>1.4</td>
</tr>
<tr>
<td>Cambodia</td>
<td>1.6</td>
<td>Bangladesh</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>India</td>
<td>0.9</td>
<td>Indonesia</td>
<td>0.1</td>
</tr>
<tr>
<td>Myanmar</td>
<td>1.3</td>
<td>Pakistan</td>
<td>0.1</td>
</tr>
<tr>
<td>Nepal</td>
<td>0.5</td>
<td>Philippines</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>Thailand</td>
<td>1.4</td>
<td>Sierra Leone</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Source: Updated from Halperin & Bailey,16 using most recent UNAIDS data.17

• A study in India followed 2298 men attending three STI clinics.18 A significantly lower incidence of HIV infection was observed among the circumcised men, although rates of STIs, such as syphilis and gonorrhoea, were similar. The similar incidence of STIs in the two groups indicates similar sexual risk behaviour, and suggests a biological rather than a behavioural explanation for the observed lower rate of HIV. However, it is important to note that, of the 191 circumcised men, 62% were Muslim. When non-Muslim men were assessed separately, the circumcised group was small and no significant protective effect was found. This illustrates the difficulty of separating the effect of male circumcision from that of other cultural factors. Only randomized controlled trials can determine the efficacy of male circumcision in reducing the risk of HIV infection.
Randomized controlled trials to assess the efficacy of male circumcision in reducing risk of HIV infection

- In July 2005 the results of the Orange Farm Intervention Trial in South Africa were made public; they were subsequently published in November 2005. This was the first report from a randomized controlled trial of male circumcision as a means to prevent HIV infection. A total of 3274 uninfected men, aged 18–24 years, were randomly assigned to undergo circumcision either immediately or after 21 months. The incidence of HIV infection was found to be 60% lower among those who were circumcised. On the strength of these results, the Independent Data Monitoring Committee recommended that the men initially assigned to the delayed circumcision group be offered the procedure without delay, without waiting the full 21 months.

- Two further trials on male circumcision and HIV infection were stopped in December 2006 and published in early 2007. Both trials involved random allocation of HIV-negative volunteers to either immediate circumcision, performed by trained medical professionals in a clinic setting (intervention group), or circumcision delayed for 2 years (control group). The first trial, in Kisumu, western Kenya, was conducted among men aged 18–24 years, and showed a 53% reduction in HIV incidence. The second study was conducted in Rakai, Uganda, among men aged 15–49 years, and showed a 51% reduction in HIV incidence. Following release of the study results, circumcision was offered without further delay to the men in both non-intervention group.

- A further trial in Rakai is focusing on differences in male-to-female transmission from circumcised and non-circumcised men to their female partners. Results are expected before late 2008.

Possible biological explanations for the protective effect of male circumcision

- The primary target cells through which HIV enters the body are Langerhans cells. These cells are present in high density in the epithelium of the inner foreskin, and are close to the surface because the layer of keratin is thin.

- In an in vitro study, viral uptake by cells from the mucosal surface of foreskin was 7 times more efficient than that by tissue from the female cervix. The inner mucosal surface of the foreskin lacks the thick layer of keratin that covers most exposed skin. This leaves numerous mucosal Langerhans cells and other immune cell targets easily accessible to HIV infection.

- The highly vascularized foreskin mucosa, and in particular the frenulum, is prone to tearing and bleeding during intercourse, especially with "dry sex", as practised in some parts of southern Africa. These micro-injuries allow easy access of HIV to the bloodstream.

- A further factor facilitating the entry of the virus is the presence of an ulcerative STI, such as herpes simplex, chancroid or syphilis; these infections are more common in uncircumcised men.

Protection for women

- A study in Uganda observed lower rates of male-to-female transmission of HIV if the man was circumcised. Among 47 couples in which the circumcised male partner was infected with HIV and whose viral load was below 50 000 copies per ml, none of the female partners became infected. By contrast, 26 of the 147 women whose HIV-infected partners were not circumcised became infected.

Other health benefits of circumcision

- A multicountry study found a lower prevalence of human papillomavirus (HPV) infection in circumcised men than in uncircumcised men. HPV infection is a necessary causal factor for cervical cancer and is associated with an increased risk of cancer of the vulva, vagina and anus in women, and of the penis and anus in men.

- The incidence of invasive penile cancer is significantly lower in circumcised men than in uncircumcised men, though this condition is extremely rare.

Acceptability of circumcision among African men

- Surveys and qualitative studies among young as well as older men in six African countries have found that a considerable proportion expressed interest in circumcision, ranging from 45% in Harare, Zimbabwe, to over 80% in a large survey in Botswana. These studies indicate that many men would willingly undergo circumcision if it could be performed safely and cheaply.

- In the surveys, the men reported that their main interest in circumcision was related to hygiene, infection control and, for some, a belief that condom use is easier for men who are circumcised.
REFERENCES

Chapter 2

Linking male circumcision to other male sexual and reproductive health services

Summary

- Men have different sexual and reproductive health needs at different ages.
- Male circumcision reduces the risk of acquiring HIV infection by 50–60%, but does not guarantee complete protection. In addition, it may provide some protection against other sexually transmitted infections, such as syphilis and herpes, but offers little or no protection against gonorrhea and chlamydia.
- Male circumcision does not prevent unwanted pregnancy. Comprehensive education and information programmes, and the provision of services for contraception and STI prevention and management, are needed to address male sexual and reproductive health needs.
- WHO and UNAIDS recommend HIV testing and counselling for all patients who have signs and symptoms of HIV infection. In certain epidemic situations they recommend routine offer of an HIV test at all contacts with health services.
- WHO and UNAIDS recommend that all men who request male circumcision to reduce their risk of HIV infection be offered and HIV test.
- The core goals for male sexual and reproductive health services include promoting responsible male sexual behaviour and encouraging men to support their female partners and children in meeting their sexual and reproductive health needs.
- Sexual and reproductive health education and services are important for men and adolescents, as well as for women. A wide range of people and organizations can provide information and services, including parents, teachers, nongovernmental organizations, churches and youth groups, as well as health care providers in outpatient, family planning, STI, and HIV clinics. Every opportunity to provide education and services should be taken.
- Male circumcision services for older boys and young men offer an opportunity to provide sexual and reproductive health education and counselling to these key groups.

MEN'S SEXUAL AND REPRODUCTIVE HEALTH NEEDS AND SERVICES

For many men, accessing circumcision services may be their first contact with health services. This contact offers an opportunity to address other aspects of men's sexual and reproductive health.

As noted in Chapter 1, male circumcision does not provide full protection against HIV, but appears to reduce the risk of infection by 50–60%. It gives little or no protection against STIs that affect the urethra, such as gonorrhea and chlamydia. It provides no protection against acquisition of HIV infection from unsafe injections, from infected blood products, or through receptive anal intercourse. It also does not prevent pregnancy.

To reduce the risk of STIs, including HIV, and unwanted pregnancy, comprehensive education and information programmes are needed, as well as services for contraception and STI prevention and management. A possible consequence of promoting male circumcision for HIV prevention is that circumcised men may perceive themselves as immune, and subsequently increase their exposure to HIV, ignoring other important strategies to reduce risk. These strategies include delaying the onset of sexual activity, reducing the number of sexual partners, and using condoms correctly and consistently every time they have sex.

In many societies where male circumcision is performed at the beginning of adolescence, as a rite of passage to adulthood, the circumcision festival period is used also to educate young men about various health and social issues. These cultural traditions can be harmonized with modern clinical practice, to ensure the safety of circumcision, and to use the opportunity to educate the young men about a number of sexual and reproductive health issues.

Male circumcision should therefore be regarded as an entry point for sexual, reproductive and other health services for men (Fig. 2.1), including:

- sexual and reproductive health education and counselling;
- screening and treatment for sexually transmitted infections;
- counselling and testing for HIV (with referral for care and support for those testing positive);
- family planning education, counselling and services, including provision of condoms and vasectomy;
- evaluation and treatment for infertility;
- counselling on gender issues, including promotion of respect for women’s and girls’ sexual and reproductive health needs and rights and the importance of preventing gender-based violence;
- education about cancers of the male reproductive organs (testes, penis and prostate);
- counselling for alcohol dependence and other substance abuse, which are associated with a number of health risks.
No opportunity should be missed for education and counselling about male sexual and reproductive health issues, before and after the initiation of sexual intercourse.

Fig. 2.1 Male circumcision as an entry point to other health services

Counselling and testing for HIV Infection

Men considering circumcision do not need to know their HIV status; circumcision can be offered to men irrespective of whether they are infected with HIV or not. The procedure can be performed safely on men who have HIV infection, and may confer some benefit by reducing the risk of HIV transmission to their female partners. The surgical staff who perform male circumcision should take full precautions to avoid acquiring HIV infection during surgery (“universal” or “standard” precautions).

WHO and UNAIDS promote testing and counselling for HIV at all contacts with health services, particularly in settings with high HIV prevalence and incidence. However, clients should have the option to refuse an HIV test, without affecting the care and services they receive. This approach is referred to as “routine offer of testing with optional opt-out”.

It is estimated that fewer than 10% of people in developing countries are aware of their HIV status, and access to, and uptake of, counselling and testing services are limited. Knowledge of HIV status is important, so that those infected can seek advice, support and proper care, and can take measures to avoid passing the infection to others. Care includes prophylaxis with cotrimoxazole to reduce the rate of progression to acquired immunodeficiency syndrome (AIDS), and antiretroviral treatment when clinically indicated. These treatments are becoming more widely available in developing countries. Specific information and messages can also be given to people known to be uninfected with HIV to help them remain free of infection.

Barriers to male sexual and reproductive health services

There are a number of barriers to the development and use of reproductive health services for men, including:

- a lack of information on men’s needs and concerns that could be used to design appropriate programmes and services;
- embarrassment and alienation among men to use health facilities that are primarily designed to address women’s reproductive health issues;
- men’s reluctance to seek medical care;
- inadequate training of health workers to address men’s sexual and reproductive health issues;
- limited availability of contraceptive methods for men;
- negative attitudes of policy-makers and service providers towards men; for example, viewing men as irresponsible, or not interested in playing a positive role to support women’s reproductive health needs, or not an appropriate clientele for sexual and reproductive health services;
- unfavourable legal and policy constraints, such as bans on promotion of condoms;
- logistic constraints such as lack of separate waiting and service areas for men, lack of trained male staff, lack of male-friendly clinics, and inconvenient clinic hours.

These barriers must be addressed if men are to become more involved in sexual and reproductive health matters.

MEETING THE SEXUAL AND REPRODUCTIVE HEALTH NEEDS OF MEN

Access to sexual and reproductive health services is a human rights issue for women, men and young people. The lack of services to address the sexual and reproductive health needs of men contributes to stress and anxiety among them. Various strategies have been used to extend sexual and reproductive health services to men, and to engage men as partners in improving women’s sexual and reproductive health:
• Services for men may be offered in existing clinic-based services.
• Separate services may be established to provide information, education and counselling on sexuality, physiological development, family planning, STIs and HIV, genital health and hygiene, interpersonal communication, and sexual and reproductive behaviour.
• Special services may be established to offer diagnosis and treatment of sexual dysfunction, STIs and HIV, cancer of the prostate, testis and penis, and medical indications for male circumcision.

Other approaches include:
• community-based distribution and social marketing of condoms;
• reaching men with information and services through the workplace, the military and men’s groups;
• special outreach campaigns to young men;
• educational campaigns through the media;
• special initiatives, such as outreach through football matches or other popular sporting events;
• promotion of vasectomy.

Because gender inequality has a strong influence on women’s sexual and reproductive health, programme managers need to consider the needs and perspectives of men, women and young people. It is also important to use gender-related and gender-disaggregated indicators when evaluating programmes.

MEN’S ROLE IN WOMEN’S AND CHILDREN’S HEALTH

Men can influence women’s health in numerous ways. As husbands, boyfriends, fathers, brothers, and friends, men can have a positive effect on women’s health by:
• preventing the spread of STIs by using condoms consistently and correctly and supporting and encouraging regular condom use by others;
• using, or supporting the use by partners, of contraception, so that women are better able to control the number and timing of pregnancies;
• supporting women during pregnancy, childbirth and the postpartum period;
• supporting women to take decisions about their health without reference to their partner;
• responding to the physical and emotional needs of women following abortion;
• refraining from and encouraging others to avoid all forms of violence against women and girls;
• working to end harmful sexual practices, such as female genital mutilation and “dry sex”;
• sharing financial resources with women, and supporting the notion of shared property rights;
• supporting women’s full participation in civil society, including their access to social, political and educational opportunities, many of which have a direct or indirect impact on women’s health;
• supporting the rights of daughters to the same health care, education, and respect as sons.

Who should provide sexual and reproductive health services and information to boys and men?

A wide range of people and organizations can provide sexual and reproductive health services and information to boys and men. Some of the key providers are listed below.
• Parents. Ideally, boys and young men should receive information and basic education on sexual and reproductive health from their parents. However, available data suggest that less than half of boys and young men discuss HIV/AIDS, STIs or family planning with their parents.
• Teachers. Many adolescent boys now receive some education on health, family life and sexuality in school. However, for some, the instruction comes after they have begun having sexual intercourse.
• Peers. Boys and men of all ages often get information on sexual and reproductive issues from their peers. Much of this information, however, may be inaccurate. One approach is to educate key youth leaders, who can then pass on accurate information to their peers. This has to be an ongoing process, to reach each new generation or group of young men.
• Community-based organizations. Places of worship and youth groups are important sources of information, and also provide an opportunity for counselling and skill-building in relation to sexuality, relationships, marriage and parenting. Unfortunately, in some cases, the only method taught for preventing pregnancy and STIs is sexual abstinence, despite the fact that young people find it difficult to adhere to abstinence. As a result, they may not know how to protect themselves from risk when they become sexually active.
• Family planning clinics. Some family planning clinics reach out to men, particularly to the partners of their female clients. The availability of male health care providers and separate consultation sessions for men may encourage men to use these services. Although family planning clinics have a long history of providing both medical and counselling services, many men see them as
being only for women; equally, some providers may be uncomfortable serving men.

- **Youth-friendly services.** Some countries have developed programmes that specifically address the needs of young people, either through special “youth-friendly services”, or by making existing services more welcoming and accessible to young people. Such programmes are an important way of reaching young men who often feel excluded from family planning and other reproductive health services;

- **STI clinics.** These facilities have a long experience addressing sexual health matters, and many men are comfortable seeking services in such settings. However, STI clinics tend to focus on treatment and secondary prevention. Primary prevention of STIs must, therefore, be addressed through other mechanisms.

- **HIV services.** HIV testing and counselling centres can also provide counselling on sexual and reproductive health. If such centres are integrated within primary health care services, they can also provide some sexual and reproductive health services. Services providing care for patients with HIV infection and AIDS also have a role to play in promoting sexual and reproductive health for men, women and young people.

- **Physicians, clinical officers, nurses and other health care professionals.** Health care professionals play a critical role, not just as health care providers, but also as educators and counsellors. Urologists and other specialists commonly deal with certain aspects of male sexual and reproductive health, such as diagnosing and ‘treating prostate cancer and performing circumcision or vasectomy. Primary care physicians treat large numbers of men for their general health needs, but may not have the necessary training to provide comprehensive sexual and reproductive health education and services, or be comfortable doing so. Staff providing male circumcision services should be trained to educate and counsel men about their sexual and reproductive health, and should take the time to do this. Male circumcision services provide a unique opportunity to reach men with education and counselling about men’s sexual and reproductive health.

**DETECTION AND TREATMENT OF SELECTED MALE SEXUAL AND REPRODUCTIVE HEALTH PROBLEMS**

Some common reproductive health problems are described below.

**Sexually transmitted infections**

More than twenty species of microorganism are known to be transmissible through sexual intercourse.

STIs in men include:
- gonorrhoea;
- chlamydial infection (this is the commonest cause of non-gonococcal urethritis);
- balanitis caused by *Candida albicans*;
- trichomoniasis;
- chancroid (soft chancre);
- syphilis;
- lymphogranuloma venereum;
- granuloma inguinale (donovanosis);
- genital herpes;
- genital warts (condylomata acuminata).

The most common symptom of an STI is pain on urination, a burning sensation in the penis, or an ulcer on the genitals. Male patients who complain of urethral discharge or pain when passing urine should be examined for evidence of a discharge. If none is seen, the urethra should be gently massaged from the ventral part of the penis towards the meatus. Examination of a urethral smear under a microscope may show an increased number of polymorphonuclear leucocytes, in men, more than 5 polymorphonuclear leucocytes per high power field (×1000) are indicative of urethritis. A Gram stain may demonstrate the presence of gonococci.

If a urethral discharge or genital ulcer is confirmed, the patient should be managed according to local treatment guidelines and procedures (syndromic approach). For both conditions, non-medically indicated male circumcision should be delayed until the condition has been satisfactorily resolved.

**Balanitis**

Balanitis is an inflammation of the foreskin and the glans of the penis. The condition occurs most often in men and boys who have not been circumcised and who have poor personal hygiene. The inflammation can occur if the sensitive inside surface of the foreskin is not washed regularly.

Symptoms of balanitis include redness or swelling, itching, rash, pain, and foul-smelling discharge.

Factors that predispose to or cause balanitis include:
- Phimosis. This is a condition in which the foreskin is too tight to be retracted. Dead skin cells, smegma (a white substance excreted by small glands around the corona of the glans penis) and bacteria accumulate under the foreskin. It is difficult to keep the area clean and inflammation can easily develop.
- Dermatitis. This is an inflammation of the skin, with irritation, itching and rash, often caused by an irritating substance or an allergic reaction to chemicals in certain products, such as soaps, detergents, perfumes and spermicides.


Infection with the yeast *Candida albicans* can result in an itchy, spotty rash.

Certain sexually transmitted infections (including gonorrhoea, herpes and syphilis) can produce symptoms of balanitis. In addition, men with diabetes are at greater risk of balanitis. Glucose (sugar) in the urine that is trapped under the foreskin serves as a breeding ground for bacteria.

**Treatment for balanitis**

Treatment for balanitis depends on the underlying cause. If there is an infection, treatment should include an appropriate antibiotic or antifungal medication, according to national guidelines. In cases of severe or persistent inflammation, or if there is difficulty in retracting the foreskin, circumcision is usually the best treatment.

If the diagnosis or treatment of balanitis is uncertain, the patient should be referred to a higher level of care. Maintaining good personal hygiene can help prevent balanitis. In addition, the patient should be advised to avoid strong soaps or chemicals, especially those known to cause a skin reaction.

**Phimosis**

Phimosis is a condition in which the foreskin of the penis is so tight that it cannot be pulled back (retracted) from the head of the penis (Fig. 2.2).

**Causes of phimosis**

Phimosis can occur at any age and may be present at birth. It may be caused by an infection (balanitis) or by scar tissue formed as a result of injury or chronic inflammation. A tight phimosis can interfere with urination, resulting in a thin urinary stream. In extreme cases, urine may collect between the foreskin and the glans, causing ballooning of the foreskin. In this situation an urgent circumcision is necessary, usually using the dorsal slit method.

**Treatment for phimosis**

If seen at a peripheral health facility, patients with phimosis should be referred to a higher level of care for proper assessment and treatment; this will usually involve circumcision.

**Paraphimosis**

Paraphimosis occurs when the retracted foreskin cannot be put back in place because of swelling (Fig. 2.3). This usually occurs when the penis is erect and during sexual intercourse. The retracted foreskin swells and tightens around the penis. This tightening in turn causes more swelling. Men with paraphimosis should be referred to the district hospital for emergency treatment. If left untreated the condition can result in serious complications, such as skin loss and infection; in extreme cases, it could result in loss of the penis.
Treatment of paraphimosis

Treatment depends on how long the paraphimosis has been present. For acute paraphimosis, wrap the swollen area in gauze and apply increasing pressure on the gauze to squeeze the tissue fluid (edema) out of the penis. This may take 10–15 minutes. Once the fluid has been squeezed out, it is usually possible to replace the foreskin over the glans. Circumcision can then be done as a planned procedure a few days later. If this procedure fails, or in cases of chronic paraphimosis, the man should be sent to the nearest surgical referral centre.

Urinary tract infections

Urinary infections are infrequent in adult men, but more frequent in children and older men. Usually there is an underlying cause, for example, kidney or bladder stones. Symptoms include:

- passing only a small amount of urine, despite an intense urge to urinate;
- milky or cloudy urine; sometimes urine may be reddish, indicating that blood is present;
- fever (suggesting that the infection has reached the kidneys);
- pain in the back or side, below the ribs;
- nausea;
- vomiting.

Urinary infections in men should be distinguished from urethral discharge caused by sexually transmitted infections. A patient with a urinary infection should be told to drink plenty of water, starting immediately. He should also be given an appropriate antibiotic to treat the underlying cause of the infection. Men and boys with recurrent urinary tract infection, or who do not respond to treatment at the first level of care, should be referred for further investigations.

Infertility

Between 60 and 80 million couples around the world are infertile, and most of them live in developing countries. Infertility is defined as failure to conceive after at least 12 months of unprotected vaginal intercourse. Most cases of infertility in developing countries are attributable to STIs, which damage the fallopian tubes in women and obstruct the sperm ducts in men. Reproductive tract infections in men can affect the prostate (prostatitis), the epididymis (epididymitis), and the testes (orchitis). In many societies, childlessness is highly stigmatizing, and the couple’s emotional response to their infertility is often exacerbated by family, peer and media pressure. Frequently the female partner is considered responsible for the failure to conceive, commonly resulting in marital tension divorce, polygamy and ostracism. However, a WHO investigation of 5800 infertile couples found that reduced male reproductive capacity was a contributory factor in at least 50% of infertile couples. In order to provide more efficient, systematic, and economic care for infertile couples, and to improve the accuracy of diagnoses, health care providers managing an infertile couple should ensure that all essential information is collected. The WHO manual on infertility provides clear guidelines and a logical sequence of steps for clinicians to follow in evaluating both partners in an infertile couple.
REFERENCES

Chapter 3

Educating and counselling clients, and obtaining informed consent

Summary

- Group education is used to support counselling services. It allows clients to be given basic information on sexual and reproductive health, including HIV, before an individual counselling session.
- Providers of male circumcision services have a duty to: (a) ensure that voluntary and informed consent is obtained before the procedure is performed; (b) maintain confidentiality; and (c) provide services without discrimination.
- Where tradition demands group circumcision for boys, health care providers should work with the community to design a way of combining the surgical procedure with education, integrating traditional customs and practices with modern clinical techniques.
- All counsellors need basic counselling skills in order to talk with clients in a helpful way.

EDUCATION ABOUT SEXUAL AND REPRODUCTIVE HEALTH AND MALE CIRCUMCISION

Group education is used to support individual counselling services. It allows clients to be given basic information about male circumcision before an individual counselling session. Counsellors can then work with clients, and their parents, on specific issues related to male circumcision, or sexual and reproductive health in general. Group education allows the first counselling session to be shorter, which is an advantage for busy clinics.

The information given to clients during an education session may differ slightly from site to site. Counsellors should be familiar with the standard education on male circumcision offered at the place where they work, so that messages and information given are consistent.

In conducting group education on male circumcision, you should include the following main messages:

- Underline that, like women and girls, men and boys have sexual health and reproductive health needs.
- Explain what male circumcision is, outline the benefits and risks, and describe how the surgical procedure is performed and what happens afterwards.
- Emphasize that male circumcision does not provide complete protection against HIV infection. Explain that circumcised men can become infected and can pass on HIV infection to their sexual partners.
- Describe the measures that the service takes to ensure that patient records are kept confidential, and provide assurance that confidentiality will be maintained.
- Discuss the importance of knowing one’s HIV status. Explain how HIV is transmitted, how a person can protect himself or herself from HIV infection, and where people with HIV infection can find support.
- Explain that patients with an STI have a greater risk of becoming infected with, and transmitting, HIV.
- Emphasize the importance of avoiding HIV infection, and outline different ways of reducing the risk of acquiring the infection.
- Explain that patients with an STI have a greater risk of becoming infertile in the future.
- Emphasize that only condoms, consistently and properly used, protect against STIs, HIV, and unwanted pregnancy. Other methods of contraception, even those that are highly effective in preventing pregnancy, do not protect against STIs, HIV or possible future infertility.
- Emphasize that vasectomy is the most effective and permanent method of contraception available for men, but that it does not protect against STIs or HIV.
- Emphasize that men should treat women as equal partners in decision-making related to sexual and reproductive health.
- Emphasize that men should support the sexual and reproductive health of women and the well-being of their children, with equal regard for female and male children.
- Underscore the importance of not perpetrating gender-based violence, especially against women and girls. Emphasize that responsible men do not force or coerce their partners to have sex against their will (rape).

Group education script

Below is a sample script that shows how a group education session might be conducted.1 The script should be adapted to the specific situation in the clinic or region.

The text in italics contains instructions for the group educator.

Opening

- Hello, my name is ________, and I am a _________ here at this clinic.

For some time we have been aware that the reproductive health needs of men and boys have not been receiving as much attention as those of women and girls.

As you may know, at this clinic we provide the following services for men:

- information and education on male circumcision (including the management of postoperative complications);

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1 Adapted from JHPIEGO’s Counselling and Testing reference manual.
Male circumcision for men who choose to have the procedure performed;
information and counselling on sexual intercourse, safer sex, and health problems related to the reproductive system;
diagnosis and management of sexually transmitted infections;
counselling and testing for HIV and AIDS and referral for care and support;
contraception, through vasectomy or the use of condoms; condoms will prevent both pregnancy and infections (dual protection).

Physical and sexual maturity comes with many social responsibilities. These include:
- Recognizing that safer sex can prevent STIs and HIV infection. Safer sex includes using condoms correctly and consistently, reducing the number of sexual partners, delaying the start of sexual relations, and avoiding penetrative sex.
- Never putting yourself in a situation in which you lose control of your judgement, for example because you are under the influence of alcohol or drugs. This may lead to behaviour that will increase your risk of becoming infected with STIs and HIV, such as having unprotected sexual intercourse with strangers or with multiple sexual partners.
- Treating women as equal partners in sexual relations and deciding together whether and when to have children.
- Respecting the sexual and reproductive health rights of teenage girls and women, including the right to refuse sexual intercourse, both within and outside marriage.
- Supporting women’s sexual and reproductive health and children’s well-being, with equal regard for female and male children. Such support is particularly important during pregnancy.
- Stopping gender-based violence against women and girls, and not forcing or coercing girls or women to have sex against their will.

**Male circumcision**

For those of you who are here to find out more about male circumcision, let’s talk a bit about that.

- What is male circumcision? Male circumcision is the surgical removal of the foreskin of the penis (also called the prepuce). It is one of the oldest surgical procedures in history.
- Male circumcision has been shown to have several health benefits including:
  - a reduced risk of urinary tract infections in childhood;
  - a reduced risk of some sexually transmitted infections, such as herpes and syphilis;
  - some protection against cancer of the penis;
  - a reduced risk of cervical cancer in female sex partners;
  - prevention of several medical problems of the penis and foreskin, such as inflammation, scarring and swelling of the foreskin (balanitis, phimosis and paraphimosis).

Some of you may have heard that male circumcision reduces the risk of HIV infection. This is correct. However, I must remind you that male circumcision does not protect completely against HIV infection – it only reduces the risk of becoming infected. It is very important to continue using other ways of reducing the risk of infection – using condoms correctly and consistently, reducing the number of sexual partners, delaying the start of sexual relations, avoiding penetrative sexual intercourse, and avoiding unsafe injections.

As with any surgical procedure, complications may occur after the operation. However, in our clinic we do everything we can to reduce this risk. Possible problems include pain, bleeding, swelling of the penis caused by bleeding under the skin (haematoma), infection of the surgical wound, and increased sensitivity of the exposed head of the penis (glans). On average, if we operate on 50 men or boys, one will need to come back to the clinic for the treatment of a complication. However, the problems usually settle down quickly with additional treatment.

Many men ask how soon after circumcision sexual intercourse can be resumed. It takes about 4 to 6 weeks for the wound to become strong enough to withstand sexual intercourse and about 3–4 months for the wound to heal completely. We always advise clients to avoid sexual intercourse or masturbation for the first four to six weeks after circumcision, and to use a condom during sexual intercourse for at least 6 months until the wound has completely healed. It is always best to use a condom whenever there is any risk of HIV infection.

At this clinic, we perform circumcision as a day case. We use local anaesthesia to take away the pain of the procedure. Patients can go home the same day but it is important that they come back for follow-up.

Do any of you have any questions or concerns about male circumcision? I know that there are many myths about male circumcision that circulate. For example, some people think that circumcision can cause impotence (failure of erection) or reduce sexual pleasure. Others think that circumcision will cure impotence. Let me assure you that none of these is true.

If time permits, other sexual and reproductive health topics can be covered (see Appendix 3.1).

**Summary**

We have talked about the different services that we offer in this clinic. It is up to you to let us know what services are of interest to you. If you are worried that you may be infected with an STI or HIV, or if you want to be tested, counselling and testing services are available here. If you want to register yourself or your son for circumcision, please let us know. We will be very pleased to assist you in any way you wish.

Please take some of the information leaflets we have here. They may answer other questions that you may have. Thank you for your attention.
COUNSELLING

Basic facts about counselling

Counselling is a process in which individual communication is used to help people examine personal issues, make decisions, and make plans for taking action. In some types of counselling, the counsellor and client talk about whatever the client wishes. In counselling for male circumcision, the provider ensures that the client (or, if the client is a child, his parents) has all the information he needs to make a decision about undergoing the procedure. HIV counselling concentrates on helping clients reduce their risk of becoming infected with HIV – or for those already infected – transmitting the virus to others. In family planning counselling, the provider helps the clients make an informed decision based on their reproductive intentions and personal situation.

Counselling may involve some or all of the following:

- Listening to clients (or parents, for circumcision in boys who are too young to understand fully the reasons for circumcision and the risks associated with it).
- Respecting clients’ needs, values, culture, religion, and lifestyle.
- Talking with clients about the risks and benefits of the service requested, in this case male circumcision.
- Answering questions about the male circumcision procedure and correcting any false information.
- Allowing clients and/or their parents to make their own informed decision on whether or not to choose male circumcision.
- Asking clients questions that help them identify behaviour that puts them at risk of STIs or HIV infection, or might do so after circumcision.
- Helping clients understand the benefits of knowing their HIV status.
- Helping clients understand their HIV or STI test results.
- Helping HIV-negative clients understand that male circumcision does not provide full protection against HIV infection, and suggesting how they can stay negative.
- Helping HIV-positive clients find support and treatment services, and discussing ways to avoid transmitting HIV to others.
- Helping clients obtain other services, such as family planning, screening and treatment for STIs, and counselling and treatment for alcohol and drug abuse.

Confidentiality

Confidentiality is an important characteristic of all sexual and reproductive health services. Counsellors should keep all client information private and allow clients to decide when and with whom to discuss their sexual and reproductive health problems. Clients will feel more comfortable about sharing personal information with counsellors and being tested for STIs or HIV if they know that this information will remain secret. This also applies when the client’s main interest is male circumcision. An atmosphere of trust will encourage clients to discuss other sexual and reproductive health needs.

Another reason why confidentiality is so important is that many people have negative feelings about STIs, HIV/AIDS and sexual health concerns. There is strong social pressure to conform, and considerable social stigma is associated with behaviours or conditions perceived as unusual.

Sometimes, health care workers at a clinic need to know a client’s HIV status. This happens, for example, when a client is sick and the best treatment depends on knowing whether the person is HIV-positive or HIV-negative. The counsellor should tell the client about this possibility during counselling. In the case of male circumcision, an HIV test is recommended for all clients requesting circumcision, but a test is not required for the operation to go ahead. Male circumcision can be safely performed in men whose HIV status is unknown and in those with HIV infection, provided that they are clinically healthy. However, except in some rare cases where circumcision is necessary to correct a health problem of the glans or foreskin in a man with HIV infection, there are no medical or public health reasons to perform circumcision in men with HIV infection. HIV testing of clients before circumcision is not necessary to protect the clinic or surgical staff during the operation. It is important that the clinic applies high infection-control standards, including proper implementation of universal precautions, to minimize the risk of transmission of HIV and other infections to health care workers or other patients. Universal precautions are discussed in full in Chapter 8.

Counselling skills

All counsellors need certain basic counselling skills in order to talk with clients in a helpful way. Some of these skills are explained below.

Empathizing

Empathy is the ability to see the world through another person’s eyes and understand how that person feels. Counsellors should listen to clients carefully and show them that they understand without judging. Empathy is not sympathy; it is not feeling sorry for the client. Empathy is understanding the client’s feelings.

Example:

An adolescent says to the counsellor: “My girlfriend keeps asking me to go for circumcision. I feel embarrassed and angry.”

Counsellor’s empathic response: “So you often feel irritated, uncomfortable, and pressured by your girlfriend. That must be difficult for you.”

Footnote:

2 Adapted from JHPIEGO’s Counseling and testing reference manual for lay counselors, 2002.
Active listening

Active listening involves paying attention to what a client says and does, in a way that shows respect, interest and empathy. Active listening is more than just hearing what clients say. It is paying attention to the content of the message, as well as the client’s feelings and worries that show through his movements, tone of voice, facial expressions, and posture.

Example:

The client looks very nervous and is biting his nails, but tells the counsellor he is fine.

Counsellor: “Sometimes when we think we are relaxed, we can still feel quite anxious inside. I see you are biting your nails. Perhaps something is bothering you that you do not know how to express. Do you have any idea what that might be?”

Open questioning

Open questions are questions that require more than a one-word answer. They usually begin with words such as “how”, “what” or “why”. Open questions encourage clients to express their feelings and share information about their situation.

Examples:

“Why have you decided to come for male circumcision?”

“How do you think circumcision can reduce your risk of STI or HIV infection?”

“What do you do that may make it possible for you to get infected with an STI or HIV?”

“What are you currently doing to protect yourself against STIs and HIV? How is this working?”

Probing

Probing is using questions to help clients express themselves more clearly. Probing is necessary when the counsellor needs more information about the client’s feelings or situation. Asking a probing question is a good way to follow up on a question that has been answered by “yes” or “no.”

Examples:

“Can you tell me more about that?”

“How do you feel about that?”

Focusing

Clients are often overwhelmed by emotional or personal problems related to their particular sexual and reproductive health problems. They may want to address all the issues at once. If clients start to talk about problems or situations that will be discussed later in the session, the counsellor may want to bring the topic of discussion back to the current issue.

Example:

At the beginning of the first counselling session, the client begins talking about the most recent situation when he may have been exposed to HIV. He asks about where and how he can get condoms.

The counsellor does not want to interrupt the flow of the discussion, so says: “Using condoms is an excellent way to reduce your risk of getting an STI or HIV infection. We can talk about that in a few minutes. Right now, let’s continue talking about your HIV situation.”

If the client wants to talk about other emotional or personal issues, such as problems at home or a partner’s drug use problem, the counsellor should help the client find appropriate support.

Affirming

Affirming is congratulating or complimenting clients on the positive actions that they have taken. It is important to encourage success. Complimenting clients helps them feel respected and valued and encourages them to try to make other changes to reduce their risk of HIV infection. It may also make them more willing to share information about other actions they have taken.

Example:

Client: “I’ve recently started using condoms each time I have sex”.

Counsellor: “That’s a really positive step in protecting yourself against HIV and sexually transmitted infections. Well done!”

Clarifying

Counsellors clarify in order to make sure that they understand a client’s statements or questions. Clarifying also helps the client understand his own situation or feelings better and identify uncertainty or conflict between his thoughts and behaviour.

Example:

Client: “My partner gave me gonorrhoea. I’m afraid of getting HIV. But I’m also afraid that, if I use condoms when I have sex with her, she’ll think I am not faithful.”
Counsellor: “Help me understand this. You are afraid you might get HIV from your partner, but you do not want to use condoms with her.”

Pointing out a conflict may help the client identify which of two issues is more important to him. It is better than the counsellor telling the client to do something that he is not ready to accept. Clarifying also helps clients make their own choices and draw their own conclusions. Saying “help me understand this” is a good way to begin this type of discussion.

**Correcting false information**

It is important to provide correct information to clients and to correct any myths and false information. There are many incorrect rumours about HIV, AIDS, sexually transmitted infections, male circumcision and vasectomy. These should be corrected. However, this needs to be done in a sensitive way, without making the client feel stupid or defensive. Counsellors should acknowledge false information and then correct it quickly. It is not necessary to give detailed explanations.

**Example:**

Counsellor: “You mentioned that it is possible to cure HIV by having sex with a virgin. Many people believe this, but it is untrue. You would be endangering the virgin; it is considered a criminal act in many countries. At present, there is no cure for HIV or AIDS.”

Counsellor: “You mentioned that you want to have a circumcision in order to prevent you from getting HIV from your multiple sexual partners. I think you need to know that male circumcision does not fully protect a man against HIV infection. Circumcised men who do not use protection or who engage in risky sexual behaviour are more likely to contract HIV infection than uncircumcised men who practise safer sex. Having sex with multiple sexual partners certainly is risky behaviour. You can reduce your risk of HIV infection by cutting down on the number of your sexual partners, avoiding full sexual intercourse (penetrative sex) and using condoms correctly every time you have sex.”

**Summarizing**

Counsellors summarize in order to present the main points of the conversation to the client. Summarizing can be useful when moving to another topic or ending the session, and to make sure that counsellor and client have understood each other correctly. Summarizing also helps clients see the whole picture and understand the situation better.

**Example:**

Counsellor: “We have discussed several ways in which you can reduce your risk of getting infected with an STI or HIV. For example, you seem comfortable with starting to use condoms during sex and drinking less alcohol when you go out with friends. You have many choices and we will develop a specific plan later. First, let’s talk about HIV testing because your plan could change depending on your test result.”
INFORMED CONSENT FOR SURGERY

General

Clients (or parents, in the case of a child) must give informed consent before a circumcision is performed. Health care providers should give clients all the information they need to make a fully informed decision. The following elements should be included.

- Provide information. Clients (or parents) should be given an explanation, in plain language, of male circumcision and the nature of the surgery. They should be informed about the risks and benefits of the procedure and of other ways to reduce the risk of HIV infection. They should know that they can choose not to be circumcised.
- Assess whether the client understands the information provided.
- Assess the capacity of the client to make the necessary decisions.
- Assure the client that he is free to choose whether or not to be circumcised. If there is any suggestion that the client is not ready to provide consent, advise him to reflect on it for a few days.
- Ask clients who decide to undergo circumcision to sign a consent document.

The goal of this consent process is to ensure that the clients (or parents) understand the surgical procedure. At the same time, they should be given the opportunity to make use of other sexual and reproductive health services.

Only clients who have appropriate decision-making capacity and legal status can give their informed consent to medical care. Where a child (usually defined as under the age of majority in national law, though some countries allow consent for certain types of medical care to be given by minors) lacks the legal status required to provide independent informed consent, or lacks the capacity to appreciate the risks and benefits associated with the procedure, written consent based on full information must be obtained from the parents or legal guardian. The parents or legal guardian should make the decision according to the best interests of the child.

Children nevertheless have a right to participate in decisions affecting their health, according to their evolving capacities. Even where the law does not allow a child to give his own consent, providers of circumcision should explain the risks and benefits to the child in a way appropriate to his capacity. If the child has sufficient capacity, he should be given the opportunity to give or withhold assent to the procedure.

Adolescent boys: consent and confidentiality

Male circumcision is often performed during adolescence or early adulthood. It is important that health care workers know how to respond to an adolescent boy’s request for circumcision in a way that respects confidentiality, but does not put the health care worker in conflict with the law.

Health care workers need to know what the law says about consent for minors. They need to know at what age and in what circumstances minors can legally make an independent decision to seek clinical or medical services without the agreement of their parents or guardian. The age at which an adolescent is allowed to give his own consent may differ for different procedures. For example, in some countries, an adolescent may be able to consent to be tested for HIV or receive condoms at a younger age than that at which he can consent to circumcision. The Ministry of Health and the National Medical or Nursing Associations should be able to provide information on national rules and regulations.

Adolescent boys who are mature enough to appreciate the risks and benefits associated with a medical procedure, such as circumcision or HIV testing, should not be subjected to the procedure without their informed consent, whether or not parental consent is required by law. All health services provided to adolescents should be confidential. Where the law allows minors to provide independent informed consent, providers must ensure that information is not disclosed to the parents without the child’s consent.

"Children are more likely to use services that are friendly and supportive, provide a wide range of services and information, are geared to their needs, give them the opportunity to participate in decisions affecting their health, are accessible, affordable, confidential and non-judgemental, do not require parental consent and are not discriminatory."


Health care workers should be guided in their response to adolescents by human rights principles: all adolescents have a right to use health services. Health care workers should act in the best interest of the adolescent with an understanding of his evolving capacities and ability to make independent decisions. In some situations, health care workers may need to judge whether an adolescent has the maturity to request, and consent to, circumcision, independent of his parent or guardian.
Circumcision is an opportunity to make contact with adolescent boys, and provide them with information and counselling about their own sexual and reproductive health and that of their current or future partners. Adequate time should be allowed for counselling before and after the operation. Adolescents should be advised that it is important to return after the procedure for a check-up and further counselling and information on condom use and other aspects of sexual and reproductive health.

**Documenting informed consent for surgery**

The circumcision team should ensure that the client has been informed about the risks and benefits of male circumcision, that the information has been given in an understandable way, using everyday local language. The oral information should be backed up by written information sheets in the local language (see Sample Information Sheet for Adult and Adolescent Clients in Appendix 3.2). After receiving the information the client should be allowed to ask questions. He should then be given time to reflect before being asked to sign the consent document (see Sample Certificate of Consent for Adults and Adolescents in Appendix 3.3).

**INFANT CIRCUMCISION**

Circumcision can be performed with the least physical risk on infants. When counselling parents who have been offered, or have requested, circumcision for their infant, health care providers have a responsibility to explain all the associated benefits and risks. Any benefits with regard to preventing HIV infection will be realized only many years in the future when the child becomes sexually active.

Parents or guardians should use the information they are given to evaluate what is in the best interests of the child. They may also wish to consider cultural and religious factors in reaching a fully informed decision.

More information on counselling parents who wish to have their baby circumcised is given in Chapter 6.

**INTEGRATION OF TRADITIONAL CIRCUMCISION EVENTS WITH CLINICAL CIRCUMCISION**

In some countries, groups of boys are circumcised at the same time, by a traditional circumciser who uses a traditional technique without anaesthesia. This group activity coincides with the “rites of passage” from adolescence to adulthood, and often take place in “circumcision camps” or “circumcision ceremonies”. The event is usually both festive and educational for the participants and the community. The goals are to acknowledge the boy’s physical and emotional maturity and readiness to face the challenges of adulthood, as well as to support him during the painful circumcision procedure. In these camps, young boys attend various civic education classes, facilitated by the traditional circumciser, community leaders or event organizer. Essentially, they are taught how to behave as men.

Some parents prefer to have their sons circumcised individually. They may take the boy to a hospital or clinic, and have the health care provider perform a medical circumcision under local anaesthesia. If they choose to have the boy circumcised at home, they may engage either a nurse or a traditional circumciser. They may also specify which technique they prefer.

The increasing interest in medical circumcision in countries with a culture of traditional circumcision provides an opportunity to integrate the traditional event with safer clinical procedures including appropriate follow-up. There are many reports of high complication rates following traditional circumcision ceremonies and circumcisions performed by traditional providers. Safety can be improved by introducing medical circumcision into traditional ceremonies, or by performing the circumcision under local anaesthesia in a clinic separate from, but linked to, the traditional ceremony.

Educational topics during a circumcision event may include the following:

- the physical and psychological changes that occur in boys and girls during adolescence;
- sexuality and gender issues;
- male and female sexual and reproductive health and rights;
- sexually transmitted infections;
- HIV infection;
- safer sex practices [correct and consistent use of condoms, reducing the number of sexual partners, delaying the start of sexual relations, and avoiding penetrative sex];
- family planning;
- substance use (drugs, alcohol, tobacco);
- violence, including gender-based violence;
- community expectations of men;
- goal-setting and decision-making.

Health institutions that want to organize group circumcision events should do so in partnership with traditional circumcisers and the community. A joint educational programme can be drawn up, under shared responsibility. The decision to circumcision boys in camps will depend on resources, customs and traditions in the community. A mobile outreach service during the holidays is a convenient way to reach many boys and their parents. Whichever approach is adopted, the quality of the clinical circumcision should be ensured, in order to build and maintain confidence in the community regarding the safety and advisability of medical circumcision.
Appendix 3.1

Additional script for counselling on reproductive health

HIV testing and counselling

- You have all probably heard of HIV, the virus that causes AIDS. We do not talk about it much in the community, but we are going to talk about it here because it is important to your health and the health of your partner and children.

- HIV is increasing all over the world. How many of us know family members or friends who have HIV or who have died from illnesses related to HIV and AIDS?

- During this session, I will give you some basic information about HIV and AIDS and how being tested for HIV can be beneficial to you, your partner and your family. You will also learn about the relationship between male circumcision and HIV infection.

- I will also tell you about services that are available locally, especially about the counselling and testing services that are offered here or at __________ facility. We will also talk about family planning.

- HIV testing is recommended for individuals who have put themselves at risk of HIV infection, for example by having unprotected sexual intercourse with an HIV-infected person or with someone whose HIV status is unknown. Using non-sterile needles to inject drugs is another risk for HIV.

- For those who are tested and find out they have HIV, there are medicines that help them stay healthy longer and that may reduce the risk of infecting others with HIV.

- People living with HIV have the same rights as everyone else. Discrimination against people living with HIV is against the law. There are organizations such as __________ that can provide legal and other types of support if needed for people with HIV infection.

- While medicines do not provide answers to all of our problems in dealing with HIV, they do allow people with HIV to live longer, healthier and productive lives. Before going into detail about the services we offer, here are a few facts about HIV and AIDS.

The difference between HIV and AIDS

- HIV stands for human immunodeficiency virus. It is the virus that causes AIDS. HIV is a slow-acting virus and it is possible for a person to be infected with HIV for many years without knowing it or feeling ill. AIDS is a condition caused by HIV. AIDS stands for acquired immunodeficiency syndrome. Immune deficiency means that the immune system, which protects your body from infection, does not function properly. AIDS develops because HIV weakens the body’s defence system.

- There is no cure for HIV infection, but medicines are available that can help prevent other infections in people who are living with HIV. Other medicines can slow down the virus and help HIV-infected people stay healthy longer.

- The increasing availability of medicines and other resources to support people with HIV means that more and more people with HIV infection can live a full and productive life, including a healthy sexual life.

Country statistics on HIV

- Here is some information on HIV infections in our country and region. (Share with the group recent national statistics on the prevalence of HIV and the numbers of clients with HIV in antenatal and STI clinics.)

How HIV is transmitted

HIV is transmitted:

- through unprotected sexual intercourse, vaginal or anal, with a person who has HIV infection;

- through infected transfused blood or blood products, or by using needles that an HIV-infected person has already used for injecting drugs, body piercing or tattooing; and

- from an infected mother to her baby during pregnancy and childbirth and through breast milk.

Sexually transmitted infections

- Sexually transmitted infections are quite common in our community, especially among sexually active men. The most common STIs are syphilis, gonorrhoea, chlamydia and herpes.

- It is important that these infections are promptly diagnosed and treated, in order to avoid complications such as infertility.

- Men should be responsive to requests from STI clinics to come for testing if their spouse or partner is diagnosed with an STI. Treatment of both partners is an important element of STI control in the family and the community at large.

- Having a sexually transmitted infection (especially one that causes sores or ulcers on the genital area) increases the risk of getting HIV by up to five times. People living with HIV are more likely to infect others when they also have such an STI.

- Individuals with a sexually transmitted infection should carefully consider the benefits of HIV testing.
Preventing HIV infection and reducing risk behaviour

- A person may be exposed to HIV once or many times before he or she becomes infected. The more often exposure occurs, the more likely a person is to become infected. Most people do not know their HIV status or whether they have been infected, and may continue to behave in a way that puts them at risk of infection or risks transmitting infection to others.

- HIV infection can be avoided by avoiding penetrative sexual intercourse, by having only one partner, who is HIV-negative and faithful, by using condoms correctly and consistently, and by using only clean needles for injections.

- Correct and consistent condom use prevents not only HIV, but also other sexually transmitted infections (thereby protecting future fertility) and unwanted pregnancy. When used correctly every time, condoms are an excellent method of family planning and help prevent the spread of HIV and other STIs.

Reducing the risk of getting infected with HIV

- Do you know of ways in which people can reduce their risk of getting infected with HIV? (Add to participants’ suggestions: not having sex with high-risk partners, talking to a partner about testing, talking about HIV concerns with a partner or friend, decreasing alcohol or drug use, increasing condom use, avoiding places where you often have high risk behaviour, abstaining from sex, avoiding penetrative sex, correctly using condoms every time until you and your partner have been tested, etc.)

- Try to think of some ways in which you personally could decrease your risk of getting infected with HIV.

- When you think of some ways that you can reduce your risk of getting infected with HIV, share them with someone you trust, such as a close friend.

- Now I will show you the proper use of a condom. (Include a condom demonstration here if appropriate. Use models and ask participants to do some demonstrations themselves.)

HIV testing

- Our health facility offers HIV testing and counselling. Each person has the right to choose whether or not to be tested for HIV.

- Before you make a decision about HIV testing, you will have the chance to talk with a counsellor about your specific situation with regard to STI and HIV infection, and about ways to reduce your risk of getting infected.

- The test result shows your HIV status as of 3 months earlier. These 3 months are called the window period. If you became infected within those 3 months, it may not be detected by the test. For this reason, some people will need to be retested. For example, if you had unprotected sex on 15 May and were tested on 3 June, you may want to be tested again after 15 August.

- A positive HIV test means you have been infected with HIV. It does not mean you have AIDS, and it does not tell us when you were infected or when you will get sick.

- A negative HIV test means you have not been infected with HIV or that you are in the window period. (Share information on how to remain HIV-negative).

- If you are ill with signs and symptoms of HIV infection, medical staff will recommend an HIV test in order to determine the best way of treating and helping you.

Medicines

- In this facility, medicines are available to slow down the progression of HIV infection to AIDS and therefore prolong life. The medicines are safe to take.

Contraception for men

- Two methods of male contraception are available in this clinic: a temporary method (male condoms) and a permanent method (male sterilization or vasectomy).

- The male condom is suitable for those wanting to space pregnancies and to protect themselves against STIs, HIV and preserve their future infertility. In fact, the condom is the only method that both prevents pregnancy and provides protection against HIV and other sexually transmitted infections.

- Vasectomy is a surgical procedure, in which the tubes (vas deferens) that transport sperm cells from the testes to the penis are cut and tied off (show drawing of male reproductive system to illustrate vasectomy). Vasectomy is a permanent method of contraception, and should be used only by men who are very sure that they do not want to have more children. You will still need to use a condom to protect yourself against STIs, including HIV.
Vasectomy is done in this clinic as an outpatient procedure under local anaesthesia. That means that patients go home the same day.
Vasectomy does not change a man’s ability to have erections and does not interfere with sexual intercourse.

Does anyone have any questions or concerns?

Appendix 3.2
SAMPLE INFORMATION SHEET FOR ADULT AND ADOLESCENT CLIENTS

Normal anatomy
The head (glans) of the penis is covered by a fold of skin (foreskin). As the penis becomes erect, this skin withdraws freely so that the head of the penis is fully exposed.

What is circumcision?
Circumcision is surgical removal of the foreskin. It is an ancient practice that has its origin in religious and traditional rites. Many parents have their sons circumcised for religious reasons. More and more men are now choosing circumcision for health reasons.

Who will do the operation?
A specially trained member of the circumcision team will do the operation.

Is circumcision a painful operation?
Normally, circumcision is done with a local anaesthetic. This is given by injection through the skin near the base of the penis. Although you will be awake during the operation, you will not feel it being done. When the local anaesthetic wears off after the operation, it is usual to feel some discomfort; this can be reduced by taking pain-relieving tablets. For some clients, it is preferable to do the operation in a hospital or under general anaesthesia, rather than in a clinic.
Effects of circumcision

After the operation, the head of the penis is exposed all the time. The skin on the shaft of the penis is left intact. In adults, it is left slightly lax to allow enough skin for erection. The penis looks different and this may take some getting used to. It takes some months for the stitch marks to fade away. The wound may look slightly untidy for the first few months after the operation.

Benefits of circumcision

There is more and more evidence that men who are circumcised have a lower risk of catching HIV infection. In countries where most men are circumcised, the number of people with HIV is much lower than in countries where most men are not circumcised. However, male circumcision gives only partial protection against HIV infection; correct and consistent use of condoms is the best form of protection. Other ways of reducing the risk of acquiring HIV infection include not having sex and reducing the number of sexual partners. Sexual behaviour remains the most important factor in HIV transmission. Avoiding multiple partners and high-risk sexual behaviour, and always using condoms, reduce substantially the risk of acquiring or transmitting HIV.

Circumcision also reduces the risk of some other sexually transmitted infections, such as herpes and genital ulcers.

Sometimes circumcision is performed for medical reasons, such as when the foreskin is too tight to be pulled back from the glans. After circumcision, it is much easier to wash the head of the penis and keep it clean.

Problems and complications after the operation

Immediate problems

Some swelling and discomfort can be expected after the operation, but this normally gets better after the first day or two. No special treatment is needed.

One of the possible complications of circumcision is bleeding or accumulation of blood under the skin. This is because the skin of the penis is less tight than other parts of the body and has a very good blood supply. If a large blood clot forms, it is sometimes necessary to perform another small operation to remove it. If this happens, it may be necessary to stay in hospital for a few days and rest for a week or two.

The wound can become infected, particularly in men with diabetes. The operation is performed in sterile conditions, but the penis is in an area that is not as clean as other parts of the body. The first signs of infection are increasing pain, redness and swelling at the site of the operation. If this happens, you should return to the clinic for follow-up, as antibiotic treatment may be needed. Antibiotics are not given routinely and antibiotic ointment should not be used, as this may make things worse. The actual risk of having a complication, such as bleeding or infection, is about one for every fifty men who have the operation.

If you are unable to pass urine or have any difficulty in doing so, you should return to the clinic for assessment.

Most men get erections during the night while sleeping. If this occurs after the circumcision operation, you may experience some minor discomfort because of pulling on the stitches. This is nothing to worry about, and will settle down after 1–2 weeks.

Other complications

Occasionally the head of the penis may remain very sensitive after the operation. This increased sensitivity will become less over the first few weeks, as the skin of the glans becomes slightly thicker.

Instructions to follow before the operation

Please bring a pair of well-fitting clean underpants to wear after the operation. They will hold the wound dressing in place for the first day or two. A day or two after the operation, once the dressing has been removed, it is better to wear loose underwear. On the morning of the operation, wash the genital area and the penis carefully with water and mild soap, giving special attention to the area under the foreskin. If you have long pubic hair, it is a good idea to clip this with scissors before the operation, so that it does not interfere with the dressing that will be put on after the circumcision. There is no need to shave your pubic hair in advance of the operation.

You will be more comfortable if you empty your bladder before the operation.

Instructions to follow after the operation

In the first three days after the operation, it may help to rest at home. Lying on your back means that the penis is the highest point in your body and this takes the pressure off the area. However, you should also walk about regularly, for example to get meals or visit the toilet. You should not ride a bicycle for the first five days after the operation.

Keep the area of the operation dry until the next day; keep the area clean; do not use any antiseptic cream, ointment or any other substance. If clean water is available, wash carefully twice a day in a shower or sitz bath (a warm-water bath taken in the sitting position, in which the hips and buttocks are in the water). Do not remove the bandage until told to do so by the clinic staff.

The circumcision wound is closed with absorbable stitches. These dissolve by themselves and it is not necessary to return to the clinic to have them removed.

If you are unable to pass urine or have any difficulty in doing so, you should return to the clinic for assessment.

Avoid any sport or other strenuous activity for 4–6 weeks. The healing process will be well advanced after 7 days, but it takes 4–6 weeks for the wound to become strong. Full healing takes longer (3 to 4 months). It is best to avoid sexual intercourse or masturbation for the
first four to six weeks after circumcision. It is very important to use a condom during sexual intercourse to protect the healing wound for at least six months after the operation. It is always wise to use a condom whenever there is any risk of HIV infection.

Contact number for emergencies.

__________________________________________________

__________________________________________________

Appendix 3.3

SAMPLE CERTIFICATE OF CONSENT FOR ADULTS AND ADOLESCENTS

My name is ______________________________ (BLOCK CAPITALS)

I am asking you to do a circumcision operation (removal of my foreskin) on me. I give you my permission to do this operation.

Signed ………………………………………………………………………………………………………

(client requesting circumcision)

If the patient is too young to give legal consent, the form should be countersigned by a parent or legal guardian.

I am the parent/legal guardian. I am asking you to do a circumcision operation on my son/ward and I give you permission to do this operation.

Signed ………………………………………………………………………………………………………

(parent or guardian requesting circumcision on behalf of a minor)

My name is  ________________________________ (BLOCK CAPITALS)

I am the counsellor/surgeon who has given information to the above client.

I have given information about:
• what circumcision is;
• the benefits of circumcision;
• how circumcision is done;
• the risks of circumcision;
• what to do before circumcision;
• what to do after circumcision;
• what to do if there are any complications or problems after circumcision;
• an emergency contact number and information about where to go in an emergency;
• why it is important to use condoms after circumcision.

I have given the client an opportunity to ask me questions about all the above.

I have asked the client some questions to make sure that he understands the information I have given.

To the best of my belief the client is capable of giving consent and has enough information to make a proper decision about whether to proceed with the operation of circumcision (removal of the foreskin).

Signed ………………………………………………………………………………………………………

(Circumcision clinic counsellor or surgeon)
Chapter 4

Facilities and supplies, screening patients and preparations for surgery

Summary

- Circumcision should be performed in appropriate facilities with proper equipment and supplies.
- Surgical instruments wear out with use and with repeated disinfection and sterilization. Therefore, each clinic should carry out a periodic review of all surgical instruments.
- The surgeon must use good aseptic technique to prevent infection.
- Before circumcision, clients should be assessed for contraindications to surgery and conditions that need treatment or referral.
- The assessment includes history-taking and physical examination.

INTRODUCTION

Although male circumcision has been performed on boys and young men in some countries for centuries for religious and cultural reasons or as a rite of passage to mark transition to adulthood, in other countries it is almost unknown, or performed only for medical reasons. Following evidence that circumcised men have a lower risk of HIV infection than uncircumcised men, demand for circumcision has increased, particularly in countries with high HIV incidence. Although circumcisions are widely performed by surgeons and general practitioners in an appropriate clinical environment, resources are not adequate to meet this increased demand. In order for circumcision services to be safely expanded given limited resources, additional providers must be trained and equipped to offer surgery in settings that meet minimum standards of care. Depending on what is permitted by law in different countries, circumcision may be performed by specially trained and supervised nursing or clinical officers. This technical manual describes provision of safe male circumcision services in a properly equipped clinic, at the lowest peripheral level of care, supported by a system for referral to better qualified or equipped services for support and management of complicated or unusual cases. A full description of surgery and anaesthesia best practices at the district hospital in resource-limited settings is given elsewhere.1

The following equipment and instruments are required for standard adult male circumcision:

- instrument tray wrapped with sterile drape
- dissecting forceps (finely toothed)
- artery forceps (2 straight, 2 curved)
- curved Metzenbaum’s scissors
- stitch scissors
- Mayo’s needle holder
- sponge-holding forceps
- “O” drape (80 cm x 80 cm, with ~5 cm hole)
- gallipot for antiseptic solution (e.g. povidone iodine)
- povidone iodine (50 ml of 10% solution)
- plain gauze swabs (10 x 10 cm; 10 for the procedure, 5 for dressing)
- petroleum-jelly-impregnated gauze (5 x 5 cm or 5 x 10 cm) (tulle gras) and sticking plaster
- 15 ml of 1% plain lidocaine (without epinephrine) anaesthetic solution
- syringe, 10 ml (if single-use syringes and needles are unavailable, use equipment suitable for steam sterilization)
- injection needles (18- or 21-gauge)
- suture material (chromic gut or vicryl 3-0 and 4-0) with 3/8 circle reverse-cutting needle
- gentian violet (no more than 5 ml) or sterile marker pen
- gloves, masks, caps and aprons
- condoms and information materials for client.

A specimen list of the disposable materials required for one adult circumcision is given in Appendix 4.2. Equipment should be disinfected and cleaned as described in Chapter 8.

MAINTENANCE AND REVIEW OF EQUIPMENT

Surgical instruments wear out with use and with repeated disinfection and sterilization. Each clinic should therefore carry out a periodic review of all surgical instruments. Failure to maintain instruments in good working condition can cause operative difficulties and complications. A haemostatic artery forceps with bent blades, for instance, will not properly occlude a bleeding vessel, while blunt dissection scissors can result in a ragged wound.

Checklist for haemostatic artery forceps

- Do the points meet accurately?
- Is the grip on the points worn?
- Does the ratchet lock securely or is it worn?

Checklist for surgical dissection scissors

- Is the cutting edge of the blade sharp?
- Do the blades meet securely?
- Is the screw loose?

Checklist for needle holders

- Do the points meet accurately?
- Is the grip on the points worn?

Checklist for dissection forceps (tweezers)

- Do the points meet accurately (crossed points are a common problem with old instruments)?
- If toothed, are the teeth worn?

SCREENING ADULT CLIENTS

The circumcision team needs to ensure that clients are fit for surgery, are well informed about the surgery and are suitable for circumcision under local anaesthesia in their clinic. If there is any doubt as to a client’s suitability, he should be referred to a the district hospital or higher level of care.

The circumcision team should take a focused medical history and perform a clinical examination of the penis. Both the history and the examination should be documented (see sample record form in Appendix 4.1).

History

When taking the medical history, enquire about:

- current general health;
- whether the client is taking any medicines;
- whether the client has any known allergies to medicines;
- history of haemophilia, bleeding disorders or anaemia;
- any current genital infection, ulcer or penile discharge (see Chapter 2);
- whether the client has problems with penile erection or any other concerns about sexual function.

There are few medical contraindications to circumcision under local anaesthesia. However, as for all elective surgery, circumcision should not be performed on anyone suffering from an acute disorder, infection or febrile illness. In this case, the operation should be deferred until the problem has been resolved.
Physical examination

The anatomy and structure of the normal penis is described and illustrated in Appendix 4.3. When examining the penis, retract the foreskin and inspect the glans. The urinary opening (urethral meatus) should be near the tip of the glans, and should not be scarred or diseased. The foreskin should be easily retractable and not inflamed or narrowed. If the penis, glans, meatus and foreskin are healthy, the client is suitable for circumcision in the clinic.

![Image](image1)

**Fig. 4.1** Appearance of the normal penis. A: Before circumcision. B: after circumcision

Absolute contraindications to clinic-based circumcision include:

- **Anatomical abnormality** of the penis. Men whose urethral meatus is on the underside of the penis (hypospadias) or on the upper side of the penis (epispadias) must not be circumcised, because the foreskin may be needed in a repair operation (see illustrations in Appendix 4.4).
- **Chronic paraphimosis**. In this situation the foreskin is permanently retracted. It is thickened and swollen, and the client will indicate that this is a longstanding problem (see illustration in Appendix 4.4).
- **Genital ulcer disease**. This should be investigated and treated (see Chapter 2). Once treatment has been completed, the client may be suitable for clinic-based circumcision.
- **Urethral discharge**. This should be investigated and treated (see Chapter 2). Once treatment has been completed the client may be suitable for clinic-based circumcision.
- **Other obvious visible pathology, such as penile cancer**. The client should be referred to a specialist.
- **Chronic disorders of the penis** and foreskin, such as filariasis (a parasitic infestation that blocks the lymph ducts and prevents drainage). The client should be referred to a specialist.
- **Bleeding disorders**, such as haemophilia. The client should be referred to a higher level. Careful preoperative assessment and medical preparation are required, and there may be a need to give a preoperative infusion of factor VIII, or to give vitamin K or other medication.

There are a number of relative contraindications to clinic-based circumcision. Whether circumcision can go ahead in these circumstances will depend on the experience of the surgeon. They include:

- **A tight foreskin as a result of scar tissue** (phimosis). This may make it impossible to retract the foreskin (see illustration in Appendix 4.4). If there is a history of penile discharge or repeated infections (balanitis), the client should be referred to a specialist. Thick adhesions between the glans and foreskin may also require referral to a specialist.
- **Scar tissue at the frenulum**. Sometimes young men suffer from repeated tearing of the frenulum. This can result in thick scar tissue in the frenulum area and may make circumcision and healing more difficult.
- **Penile warts**. Penile warts can cause a lot of bleeding. Whether the circumcision can proceed will depend on the extent of the warts. It is usually possible to proceed with circumcision if there are one or two small warts on the foreskin, as these will be removed with the foreskin. However, if there are extensive warts, circumcision is best undertaken in a specialist hospital where diathermy is available.
- **Balanitis xerotica obliterans**. This is a plaque of scar tissue that extends onto the surface of the glans and involves the urethral meatus and the foreskin. It is also called lichen planus et atrophicus. In mild cases, circumcision can proceed as normal. If the process involves the urethral meatus, the client should be referred to a district hospital or specialist centre where, in addition to the foreskin being removed, the meatus may be widened.
- **Other abnormalities of the genitalia**, such as hydrocele causing scrotal swelling. The patient should be referred to a specialist centre for assessment.
HIV testing and informed consent for surgery

All men requesting circumcision for HIV prevention should be recommended to have an HIV test, followed by appropriate post-test counselling. The purpose of this test is to ensure that more people in the community know their HIV status and are thus better able to take care of themselves to either remain free of HIV infection, or to take medicine that will slow the progression to AIDS. Co-trimoxazole taken twice daily has been shown to delay the time when it is necessary to start treatment with antiretroviral drugs.

While and HIV test is recommended for all men requesting circumcision to reduce their risk of HIV infection, the test is not mandatory before the operation can be performed. No person should be forced to have an HIV test against their will, and men have the right to refuse without affecting their clinical care. The purpose of the HIV test is not to protect the clinic staff from HIV infection — they take standard precautions to avoid infection from HIV and other organisms, and avoid passing such infections from one patient to another. Men who are found to be infected with HIV can safely have the circumcision procedure provided they are clinically healthy, but there is no point in having a circumcision to reduce the risk of acquiring or transmitting HIV infection. It is most important that men with HIV infection take steps to reduce the likelihood of transmitting the virus to others by avoiding penetrative sexual intercourse or always using condoms.

The circumcision team should ensure that the client has been informed about the risks and benefits of male circumcision as described in Chapter 3. This information should be given in an understandable way, using everyday local language. The oral information should be backed up by written information sheets in the local language. After receiving the information the client should be allowed to ask questions. He should then be given time to reflect before being asked to sign the certificate of consent. An example information sheet and consent certificate can be found in the appendices to Chapter 3.

Preoperative washing by the patient

On the day of surgery, the client should wash his genital area and penis with water and soap, retracting the foreskin and washing under it. This ensures that the genital area is clean before he comes to the clinic. Immediately before the operation, the skin should be further cleaned with povidone iodine (see Chapter 5).

If the pubic hair is long and likely to get in the way of surgery or interfere with the dressing, it should be clipped before the patient enters the operating room. The patient can do this at home on the day of surgery, or it can be done at the clinic. Shaving is not necessary.

The patient should be given the opportunity to empty his bladder before going into the operating room.

Scrubbing and putting on protective clothing

Before entering the operating room area, all members of the surgical team should:

- Remove all jewellery and ensure nails are trimmed or filed.
- Remove any artificial nails or nail polish.
- Wash hands and arms up to the elbow with a non-medicated soap.
- Make sure hands and nails are not visibly soiled.

Before the circumcision operation, anyone who will touch the sterile surgical field, the surgical instruments or the wound should scrub their hands and arms to the elbows. Scrubbing cannot completely sterilize the skin, but will decrease the bacterial load and risk of wound contamination from the hands. Each scrub should take 6 minutes, and the process should be done at the start of the operating session and, if more than one circumcision is planned, between each operation.

The scrub can be done with a medicated soap and water, or with an alcohol-based preparation.

Surgical scrub with a medicated soap (Fig. 4.2)

- Start timing.
- Using a medicated soap, scrub each side of each finger, between fingers, and the back and front of each hand.
- Wash each side of the arms from wrists to elbows.
- Keep your hands higher than your arms at all times during the procedure.
- Rinse hands and arms by passing them through the water in one direction only, from fingertips to elbow. Do not move your arms back and forth.
- After scrubbing, hold up your arms to allow the water to drip off your elbows.
- Turn off the tap with your elbow.
Fig. 4.2 Scrubbing hands with medicated soap and water

- Dry the hands and arms with a sterile towel. Make sure the towel does not become contaminated by coming into contact with non-sterile surfaces;
- Hold your hands and forearms away from your body and higher than your elbows until you have put on the gloves (or gown and gloves, if worn) (Fig. 4.3).

Surgical scrub with an alcohol-based preparation

- Start timing.
- Use sufficient alcohol hand rub to keep the hands and forearms wet throughout the scrub.
- Rub each side of each finger, between fingers, the back and front of each hand, and each side of the arms from wrist to elbow.
- Allow hands and forearms to dry thoroughly.

After scrubbing, put on sterile operating gloves, taking care not to contaminate the sterile outer surface of the gloves (Fig. 4.3).

Fig. 4.3 Putting on surgical gloves

Surgical gloves prevent transmission of HIV, hepatitis and other infections through contact with blood. However, there is always a possibility that a glove will be accidentally punctured. If this happens during an operation, promptly remove the glove, rinse the hand with antiseptic, and put on a new sterile glove. If the glove has leaked as a result of the puncture, re-scrub before putting on new gloves. Patient safety is of primary concern; do not compromise it. Change gloves only when it is safe for the patient. For example, if the patient is bleeding a lot, stop the bleeding with an artery forceps before changing the punctured glove.

Whether to use a gown

A circumcision operation may be performed with the surgeon wearing sterile operating gloves but without a sterile gown, or using full operating theatre gowning techniques. It is less expensive to use gloves only, and this is the practice in many clinic settings. The surgeon should, in any case, wear a clean theatre uniform, cap and theatre shoes. If a surgical gown is not used, it is important that the surgeon wears a clean apron to protect clothes from splashes during the operation.

Face masks and protective eyewear

Face masks are recommended, as they reduce droplet contamination if the surgeon coughs or sneezes, and protect the surgeon’s mouth from any spray of blood droplets. Eyewear is also recommended, and should be worn (together with a mask) whenever an accidental splash of blood onto the face is likely.
Appendix 4.1

SAMPLE CLIENT RECORD FORM FOR ADULTS AND ADOLESCENTS

GENERAL INFORMATION

1. Name: _____________________________________________________

2. Address: ___________________________________________________

3. Date of visit: [Day] [Month] [Year]

4. Patient’s ID Number: [ ] [ ] [ ]

5. Hospital ID Number: [ ] [ ] [ ] if different from above


7. Date of birth: [Day] / [Month] / [Year] Age: ___________ years


10. Tribe/ethnicity: ____________________


13. Is client sexually active? Yes ☐ No ☐


15. Does the patient have a history of any of the following?
   a. Haemophilia or bleeding disorders: Yes ☐ No ☐
   b. Diabetes: Yes ☐ No ☐

16. Is patient currently being treated for any of the following?
   a. Anaemia Yes ☐ No ☐
   b. Diabetes: Yes ☐ No ☐
   c. AIDS: Yes ☐ No ☐
   d. Other (specify) ____________________ Yes ☐ No ☐

17. Does the patient have any known allergy to medications? Yes ☐ No ☐

18. Has patient had a surgical operation? Yes ☐ No ☐

19. Does the client have any of the following complaints?
   a. Urethral discharge: Yes ☐ No ☐
   b. Genital sore (ulcer): Yes ☐ No ☐
   c. Pain on erection: Yes ☐ No ☐
   d. Swelling of the scrotum: Yes ☐ No ☐
   e. Pain on urination: Yes ☐ No ☐
   f. Difficulty in retracting foreskin: Yes ☐ No ☐
   g. Concerns about erection or sexual function: Yes ☐ No ☐
   h. Other (specify) ____________________ Yes ☐ No ☐
PHYSICAL EXAMINATION OF GENITALS
20. Any significant abnormality on general genital examination (e.g., hypospadias, epispadias)?
   Yes □ No □

   If yes, specify____________________

21. Examination of penis:
   □ Normal  □ Abnormal (e.g. phimosis, paraphimosis, discharge, genital warts, genital ulcer disease)
   specify____________________

SUITABILITY FOR CIRCUMCISION PROCEDURE
22. Has client given informed consent for circumcision? Yes □ No □

23. Is client suitable for circumcision at the clinic? Yes □ No □

24. Is client in good general health? Yes □ No □

   If client is not in good general health, circumcision procedure should be delayed until recovery. If client shows signs of immunodeficiency (e.g., severe unexplained weight loss, unexplained recurrent opportunistic infections, requires bed rest for at least half the day) client should be referred to higher level of care and an HIV test should be performed to verify that client does not have HIV infection.

CIRCUMCISION PROCEDURE
25. Type of anaesthesia:
   □ Local (penile nerve block with lidocaine)
   □ General
   □ Other (specify)____________________

26. Type of circumcision procedure:
   □ Dorsal slit method  □ Forceps-guided method
   □ Sleeve method  □ Other method (e.g. appliance), specify____________________

27. Date of operation:   /   /   
   Day           Month          Year

28. Surgeon:_____________________ Nurse: __________________________

29. Start time:________ End time:________ Duration:____________ minutes

30. Postoperative medications: ______________________________________

31. Complications:
   □ None
   □ Yes (fill in Male Circumcision Adverse Events form)
Appendix 4.2

SAMPLE DISPOSABLE CONSUMABLES FOR ONE ADULT MALE CIRCUMCISION

- Sponge-holding forceps (1)
- Disposable scalpel (1)
- "O" drape (80 × 80 cm drape with ~5 cm diameter hole)
- Gallipot for antiseptic solution (e.g. povidone iodine)
- Povidone iodine (50 ml 10% solution)
- Plain gauze swabs (10 × 10 cm for procedure, 5 × 10 × 10 cm for dressing)
- Petroleum-jelly impregnated gauze (5 × 5 cm or 5 × 10 cm) ("tulle gras") and sticking plaster
- 15 ml 1% plain lidocaine (without adrenaline) anaesthetic solution in a single-use syringe with 21-gauge needle
- 18" chromic gut 4-0 sutures with 13 mm to 19 mm 3/8 circle reverse-cutting needle
- Sterile marker pen
- Gloves (size 6½ or 7½), mask, cap and disposable apron (two sets)
- Condoms
Appendix 4.3

DETAILED ANATOMY OF THE PENIS

It is important for the surgeon to have a good understanding of penile anatomy before undertaking male circumcision.

The penis is composed of two interconnected erectile bodies, the corpora cavernosa, which are attached and thus anchored to the underside of the front of the pubic bones. During erection, these bodies fill with blood, making the penis rigid. The wall of the erectile bodies is made of tough elastic tissue – the tunica albuginea. The urethra is on the underside of the corpora cavernosa. Surrounding the urethra is a quilt of erectile tissue, the corpus spongiosum, which continues and expands at the distal end of the penis to form the glans; this is like a helmet across the ends of the corpora cavernosa. The corpus spongiosum contributes to engorgement of the glans and to some expansion of the girth of the penis, but does not contribute significantly to its rigidity.

The urethra runs along the underside of the penis to the tip of the glans. The urethral meatus should be at the tip of the glans. In the malformation called hypospadias, it may emerge on the underside of the glans in the corona. Minor variations in the position of the urethral meatus are very common and do not require any treatment, provided that the man is able to pass urine freely and has a straight penile erection. The foreskin is the fold of skin that covers the glans when the penis is soft; during sexual intercourse, the foreskin is pulled back away from the glans. In the midline of the underside of the penis, there is a band of skin – the frenulum – which helps the foreskin to return to its usual position. Immediately underneath the frenulum is the frenular artery, which can cause troublesome bleeding during adult circumcision procedures. Immediately underneath the frenular artery is the urethra. It is important to understand the relative positions of the urethra, the frenular artery and the frenulum, because the urethra can easily be injured during attempts to stop bleeding from the frenular artery. The urethra is also vulnerable to injury in babies, because the tissue between the frenulum and the urethra is very thin and delicate.

The erectile bodies (corpora cavernosa), the urethra and its erectile tissue (corpus spongiosum) are in turn held together by a tough penile fascia (Buck’s fascia). The penis has a plentiful blood supply from the internal iliac arteries in the pelvis via the pudendal arteries. These in turn divide to give rise to the dorsal penile artery on each side and an artery in the centre of each erectile body. In addition there are many small arteries linking these.

The dorsal penile nerves are located on the upper aspect of the penis, slightly to the side of the midline and deep to the penile fascia. At the base of the penis, these nerves are relatively compact but as they run towards the glans the nerve fibres fan out. This is why, in a penile block, most of the local anaesthetic is injected at the 1 o’clock and 11 o’clock positions at the base of the penis.
Fig. 4.6. Longitudinal section of the penis
Reproduced with permission from www.netterimages.com (image no. 7829)
Appendix 4.4

SELECTED ANATOMIC ABNORMALITIES OF THE PENIS

Fig. 4.7 Hypospadias
(www.netterimages.com, #7424, with permission)

Fig. 4.8 Epispadias
(www.netterimages.com, #7424, with permission)

Fig. 4.9 Phimosis
(www.netterimages.com, #1468, with permission)

Fig. 4.10 Paraphimosis
(www.netterimages.com, #1468, with permission)
Chapter 5

Surgical procedures for adults and adolescents

### SUMMARY

This chapter gives step-by-step instructions for performing a circumcision on an adult or an adolescent. It covers tissue handling, skin preparation, local anaesthesia, the circumcision itself, suturing, and dressing the wound.

Three surgical techniques are described:

- the forceps-guided method;
- the dorsal slit method;
- the sleeve resection method.

### SURGICAL SKILLS REQUIRED FOR SAFE CIRCUMCISION

#### Anatomy of penis and choice of surgical technique

It is important to have a good understanding of penile anatomy before undertaking male circumcision. This is described and illustrated in detail in Chapter 4 and Appendix 4.3.

Three widely used surgical techniques for adult and adolescent circumcision are illustrated in detail in this manual. They have been selected on the basis of extensive worldwide experience with circumcision, as well as the experience with the three randomized controlled trials of circumcision performed in Kenya, South Africa and Uganda. It is not recommended that a nursing, clinical or medical officer learn all three surgical techniques – it is best to become a master of one adult technique and, if appropriate, one paediatric technique. This will produce the best results with the least complications. Providers should become expert in the technique most suited to the circumstances of their practice or the preferred technique adopted nationally. All three recommended techniques are fully illustrated and can be referred to in the context of a training course. After the training the illustrations and step-by-step guide can be used to reinforce what has been learnt and for retraining. Experienced surgeons should be able to perform all three techniques with little difficulty, as well as be able to train less experienced providers in any of the three techniques described.

#### Tissue handling

The surgeon should handle tissue gently. Unnecessary crushing of tissue causes more scarring, delays healing and increases the risk of infection. Use dissecting forceps (tweezers) to hold the skin edge when suturing the circumcision wound; do not use artery forceps. Place haemostatic sutures accurately, taking care to avoid inserting the needle too deep into the surrounding tissue.

### Haemostasis

Minimizing blood loss is part of good surgical technique and safe medical practice. It is very important, particularly for men who are anaemic. (Ideally, these men should not be circumcised in the clinic, but should be referred to a hospital.) Another important reason to minimize blood loss is to reduce contamination of instruments, operating theatre drapes and gowns, to lower the risk of transmitting blood-borne diseases, such as HIV and hepatitis B, to theatre staff.

The following techniques can be used to reduce blood loss.

#### Compression

After the incision has been made, and at any time during the procedure, oozing of blood from cut surfaces can be controlled by applying pressure over a gauze swab for a few minutes. Usually, this will stop the bleeding.

#### Temporary occlusion of blood vessels

Control individual bleeding vessels by applying an artery forceps (Fig 5.1), taking care not to grasp too big a chunk of tissue.

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1 Adapted from *Surgical care at the district hospital* (1).
Tying and under-running. Either tie the vessel or under-run and tie it. The simplest procedure is to tie the vessel below the artery forceps (Fig. 5.3). It is important to ensure that the tie is securely placed and not liable to slip off. The basic tie consists of two throws (Fig. 5.3A), but many surgeons make a third throw (Fig. 5.3B) to give the knot extra security.

Diathermy. Bleeding can be stopped by coagulation using a diathermy machine. This requires a secure electricity supply and may not be available in a clinic setting. The techniques described in this manual can all be undertaken safely without diathermy equipment. Surgeons undertaking male circumcision should be adept at stopping bleeding without diathermy. If diathermy is available, it should be bipolar. Monopolar diathermy should not be used for penile surgery because of the risk of extensive coagulation of the base of the penis, which can lead to the loss of the penis. When using diathermy, apply the forceps as precisely as possible. The best results will be obtained if the blood vessel is between the diathermy tongs with minimal other tissue. If too much tissue is grasped, diathermy will not stop the bleeding. Large-area diathermy and large black burns should be avoided. Large amounts of burnt tissue cause infection and scar formation. Bipolar diathermy can help reduce bleeding from small blood vessels, but bleeding from larger blood vessels should be stopped with an artery forceps first. The vessel can then be tied or under-run with a suture as described above.

Suture material

Suture size is a compromise between ensuring adequate tensile strength and keeping the amount of foreign material to a minimum. Larger suture sizes produce a more unsightly scar and small lumps can persist where large suture sizes have been used to tie the blood vessels. The preferred suture size for adult male circumcision is 3-0 or 4-0 chromic gut or vicryl rapide. Vicryl rapide is more expensive than chromic gut. The suture may be mounted on a taper-cut, round-bodied or reverse-cutting needle, according to the surgeon’s preference.
taper-cut needle passes more easily through the skin, but easily tears
the skin on the inner aspect at the corona.

**Suturing**

The following are the basic suturing techniques:

**Simple interrupted suture.** This is the simplest type of stitch, and
results in good apposition. The point of the needle should pass through
the skin at 90 degrees to the skin surface and exit at the same angle
(Fig. 5.5). The nearer to the skin edge the needle goes in, the better
the skin edge apposition but the higher the risk of the stitch cutting out.
If the stitches are placed at a greater distance from the wound edge,
there is a risk of inversion (burying) of the skin edges and poor healing.
For this reason, in male circumcision, a combination of simple and
mattress sutures is recommended.

![Fig. 5.5 Simple interrupted suture. A: suture in place holding the skin edges together. B: simple sutures closing the circumcision incision.](image)

**Mattress sutures.** Mattress sutures give a more precise apposition
of the wound edges and reduce the risk of burying the skin edges. They
are more complex than simple interrupted sutures, and therefore more
time-consuming to put in.

**Vertical mattress suture:** The technique is illustrated in Fig. 5.6.
1. Start the first bite wide of the incision and pass to the same
   position on the other side of the wound.
2. The second step is a similar bite which starts on the side that the first ends.
3. Tie the knot so that it does not lie over the incision line. This suture
   approximates the subcutaneous tissue and the skin edge.
When suturing the circumcision wound, vertical mattress sutures are
usually placed in the 12 o’clock, 3 o’clock and 9 o’clock positions
(taking the frenulum as the 6 o’clock position).

![Fig. 5.6 Vertical mattress suture. A, B: the technique. C: vertical mattress suture holding the skin edges and subcutaneous tissues together. D: A vertical mattress suture in the 9 o’clock position.](image)

**Horizontal mattress:** The technique is illustrated in Fig. 5.7.
1. The two sutures are aligned beside one another. The first stitch is
   aligned across the wound; the second begins on the side that the
   first ends.
2. Tie the knot on the side of the original entry point.
A horizontal mattress suture is placed in the 6 o’clock position
(frenulum).

![Amended drawing To come](image)
Fig. 5.7 Horizontal mattress suture. A, B, C: the technique. D: A horizontal mattress suture at the frenulum (6 o’clock position).

Fig. 5.8 shows the orientation and positions of the horizontal and vertical mattress sutures, and the simple interrupted sutures, to close the male circumcision wound.

Fig. 5.8 Sutures used to close the circumcision wound.

Vertical mattress sutures at the 9, 12 and 3 o’clock positions
Horizontal mattress suture at the 6 o’clock frenulum position

Simple sutures between the mattress sutures

Tying knots

Knots can be tied by hand or using instruments. It is more economical to tie knots using instruments, as this uses less suture material (Fig. 5.9).

Fig. 5.9 Tying a knot, using instruments
SKIN PREPARATION AND DRAPING

Skin preparation with povidone iodine

Prepare the skin with povidone iodine antiseptic solution, starting with the glans and the shaft of the penis, and moving out to the periphery. Holding the penis with a swab, retract the foreskin in order to clean the glans. The prepared area should include the penis, the scrotum, the adjacent areas of the thighs and the lower part of the abdomen (suprapubic area), so that there is no risk of the surgeon touching unprepared skin during the procedure. If the patient has a history of allergy to iodine, use an alternative solution, such as chlorhexidine gluconate. The solution should remain wet on the skin for at least two minutes.

Fig. 5.10 Preoperative skin preparation with povidone iodine

Draping

Draping provides a sterile operative field and helps prevent contamination of the wound. The edges of the drapes that hang below the operating table are considered to be non-sterile.

Scrub and put on gown (if worn) and gloves before covering the patient with sterile drapes. Leave uncovered only the operative area and the areas where the anaesthetic will be administered. A single drape with a hole in it for the penis is better than four drapes secured with towel clips (fig 5.11).

Fig. 5.11 Draping for male circumcision. The minimum sterile operative field is shown by the dotted lines.

ANAESTHESIA

Circumcision can be done under general or local anaesthesia. Local anaesthesia is preferred, because it is less risky, less expensive and the man can return home the same day. There are two possible techniques for local penile anaesthesia: the penile nerve block and the ring block. The ring block technique is used for circumcision of adults and adolescents, and is described below. The penile nerve block is used for circumcision of infants, and is described in Chapter 6.

Penile nerve supply

The nerve supply of the penis is the twin dorsal penile nerves. These nerves are located on the top and sides of the penis, at the 11 o’clock...
and 1 o'clock position near the base of the penis. They fan out towards the glans.

Fig. 5.12 Nerve supply to the penis. The twin dorsal penile nerves emerge from under the pubic bone at the 11 o'clock and 1 o'clock positions and fan out towards the glans.

Maximum dose of local anaesthetic

The local anaesthetic most often used is 1% plain lidocaine. The maximum dose that can safely be given is 3 mg per kg of body weight. The table below gives example volumes so that this maximum dose is not exceeded.

<table>
<thead>
<tr>
<th>Patient</th>
<th>0.5% lidocaine (5 mg per ml)</th>
<th>1% lidocaine (10 mg per ml)</th>
<th>2% lidocaine (20 mg per ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-kg infant (e.g. 8 days old)</td>
<td>1.8 ml</td>
<td>0.9 ml</td>
<td>Not applicable</td>
</tr>
<tr>
<td>40-kg youth</td>
<td>24 ml</td>
<td>12 ml</td>
<td>6 ml</td>
</tr>
<tr>
<td>70-kg man</td>
<td>Not applicable</td>
<td>21 ml</td>
<td>10.5 ml</td>
</tr>
</tbody>
</table>

Lidocaine with epinephrine should not be used because there is a risk of constriction of the blood vessels to the whole penis, which can cause gangrene and loss of the penis.

The advantage of lidocaine is that it works rapidly. An alternative is a mixture of 5 ml of lidocaine, 1%, and 5 ml of plain bupivacaine, 0.25%. This is more expensive but has the advantage of providing longer-lasting anaesthesia (up to 4–5 hours after the operation).

Safe injection of local anaesthetic

It is the surgeon’s responsibility to check the vial of anaesthetic, to ensure that the correct agent at the correct concentration has been selected, and to check the expiry date. It is important to verify that the anaesthetic is clear and that there are no visible particles, which may suggest that the vial is contaminated.

Once the needle is in place, but before injecting any anaesthetic, the surgeon should gently aspirate to make sure that no blood enters the syringe. This is to ensure that anaesthetic is not injected into a blood vessel. This safety precaution should be repeated each time the needle is moved, before any additional anaesthetic is injected.

Additional analgesia

Analgesics, such as paracetamol, may be given after the operation. However, best practice is to give one paracetamol tablet (adult dose 500 mg) 1-2 hours before surgery, and one tablet for the patient to take 6 hours later. This produces better postoperative analgesia than postoperative tablets alone.

Ring block technique

Using a fine (23-gauge) needle, inject approximately 0.1 ml of anaesthetic subcutaneously at the 11 o'clock position. Then, without withdrawing the needle, advance it into the subdermal space, making sure that the needle is freely mobile. At this point, inject 2–3 ml of anaesthetic to block the dorsal penile nerves (Fig. 5.13). Then advance the needle subcutaneously around the side of the penis and inject an additional 1 ml of anaesthetic. Withdraw the needle and repeat the procedure starting at the 1 o'clock position so as to complete a ring of anaesthetic. In some cases it may be necessary to make an additional injection on the underside of the penis to fully complete the ring of anaesthetic. After injection, massage the base of the penis for 10–20 seconds to increase the diffusion of the lidocaine into the surrounding tissues. Once the anaesthetic has been injected, the surgeon should wait for 3–5 minutes (timed by the clock). A common mistake is to start the procedure before the anaesthetic has had time to work. Sensation should be tested before starting the surgery. This can be done by gently pinching the foreskin with an artery forceps. If there is any residual sensation, the surgeon should wait for a further 2–3 minutes and test again. If there is still sensation, more local anaesthetic should be given. Sometimes, it helps to give additional local anaesthetic separately to the frenulum area, but usually the ring block at the base of the penis is sufficient.
RETRACTION OF THE FORESKIN AND DEALING WITH ADHESIONS

This step is common to all the methods of circumcision described below. After effective local anaesthesia has been achieved, the foreskin should be fully retracted. If the opening of the foreskin is tight, it may be necessary to dilate it with a pair of artery forceps (Fig. 5.16), but this is not usually necessary in adults and adolescents. Care must be taken just to stretch the aperture of the foreskin and not to push the forceps in too far, because there is a risk of dilating the urethra and causing injury to the urethra and glans.

MARKING THE LINE OF THE CIRCUMCISION

This step is common to all the methods of circumcision described below. With the foreskin in a natural "resting" position, indicate the intended line of the incision with a marker pen. The line should correspond with the corona, just under the head of the penis (Fig. 5.17). Some uncircumcised men have very lax foreskins which are partially retracted in the resting position. In such cases it is better to apply artery forceps at the 3 and 9 o'clock positions to apply a little tension to the foreskin (Fig. 5.28) before marking the circumcision. However, it is important not to pull the foreskin too hard before marking the line of incision which will result in removal of too much skin.

If a marker pen is not available, dabs of gentian violet may be applied with a blunt probe, the tip of an artery forceps or other sterile instrument. Pinch marks made with a toothed forceps are also an alternative.
SURGICAL METHODS

Three widely used methods of circumcision are described below. All three methods produce a good long-term result, but require different levels of skill. The sleeve method produces an excellent result, but requires the highest level of surgical skill. The forceps-guided method produces a less tidy result initially, but has the advantage that it is a simple technique suitable for a clinic setting. In clinical trials it has been shown to produce consistently good results with low complication rates. It cannot be used for men with phimosis, since the foreskin cannot be fully retracted. The dorsal slit method is probably the most widely used method worldwide.

At present, devices similar to those used for paediatric circumcision (see Chapter 6) are either not available or not suitable for adult circumcision. Evidence is needed from clinical trials before such devices can be recommended.

Forceps-guided method of circumcision

This is a simple step-by-step procedure, which can be learnt by surgeons and surgical assistants who are relatively new to surgery. It can be used in clinics with limited resources, and it can be done without an assistant. A disadvantage of the procedure is that it leaves between 0.5 and 1.0 cm of mucosal skin proximal to the corona. The forceps-guided technique was used in the in the South African and Kenya trials. The version described here was standardized by the Kenyan study team.

Step 1. Prepare skin, drape and administer anaesthesia, as described above.

Step 2. Retract the foreskin and separate any adhesions, as described above.

Step 3. Mark the intended line of the incision, as described above.

Step 4. Grasp the foreskin at the 3 o'clock and 9 o'clock positions with two artery forceps. Place these forceps on the natural apex of the foreskin, in such a way as to put equal tension on the inside and outside surfaces of the foreskin. If this is not done correctly, there is a risk of leaving too much mucosal skin or of removing too much shaft skin.

Step 5. Put sufficient tension on the foreskin to pull the previously made mark to just below the glans. Taking care not to catch the glans, apply a long straight forceps across the foreskin, just proximal to the mark, with the long axis of the forceps going from the 6 o'clock to the 12 o'clock position (taking the frenulum as the 6 o'clock position). Once the forceps is in position, feel the glans to check that it has not been accidentally caught in the forceps.

Fig. 5.18 Forceps-guided method. The forceps is applied taking care not to catch the glans.
**Step 6.** Using a scalpel, cut away the foreskin flush with the outer aspect of the forceps. The forceps protects the glans from injury, but nevertheless you should proceed carefully.

![Fig. 5.19 Forceps guided method. Cutting off the foreskin.](image)

**Step 7.** Pull back the skin to expose the raw area. Clip any bleeding vessels with artery forceps. Take care to catch the blood vessels as accurately as possible and not to grab large amounts of tissue. Tie each vessel (see Fig. 5.3 and 5.4) or under-run with catgut and tie off. Take care not to place haemostatic stitches too deeply. When dealing with bleeding in the frenular area or on the underside of the penis, care must be taken not to injure the urethra.

![Fig. 5.20 Applying artery forceps to blood vessels to stop bleeding](image)

**Step 8.** Place a horizontal mattress suture at the frenulum. The technique is shown in Fig. 5.5.

![Fig 5.22 Horizontal mattress suture at the frenulum (6 o’clock position)](image)

When placing the frenulum suture, take care to align the midline skin raphe with the line of the frenulum (Fig. 5.23). A common error is to misalign the frenulum and the midline skin raphe, which results in misalignment of the whole circumcision closure.
Step 9. Place a vertical mattress suture opposite the frenulum, in the 12 o’clock position (Fig. 5.24). The suture should be placed so that there is an equal amount of skin on each side of the penis between the 12 and 6 o’clock positions. The technique of vertical mattress suture is shown in Fig. 5.4. Place two further vertical mattress stitches in the 3 o’clock and 9 o’clock positions (see Fig. 5.6).

Fig. 5.24 Placing a vertical mattress suture in the 12 o’clock position

It is helpful to leave a long end on the horizontal mattress suture at the frenulum (at the 6 o’clock position) and on the vertical mattress suture opposite (at the 12 o’clock position). The long ends of the sutures can be held by an assistant with artery forceps to stabilize the penis during suturing (fig 5.25).

Step 10. After placement of the sutures at the 6, 12, 3 and 9 o’clock positions, place two or more simple sutures in the gaps between them. The technique of simple interrupted sutures is shown in Fig. 5.5.

Fig 5.25 Penis is stabilized by an assistant holding two artery forceps (arrows) attached to the long ends of the 6 and 12 o’clock sutures

Step 11. Once the procedure is finished, check for bleeding. If there is none, apply a dressing (see “Dressing” at the end of this chapter).
Dorsal slit method of circumcision

The dorsal slit method requires more surgical skill than the forceps-guided method. It is helpful to have an assistant present during the procedure, although it can be done without one. There is a risk that more skin is cut away from one side than the other, giving an asymmetric result. Nevertheless, the technique is widely used by general and urological surgeons throughout the world. It is the technique illustrated in the WHO manual, Surgical care at the district hospital.¹

**Step 1.** Prepare skin, drape and administer anaesthesia, as described above.

**Step 2.** Retract the foreskin and remove any adhesions, as described above.

**Step 3.** Mark the intended line of the incision, as described above.

**Step four (optional).** Some surgeons prefer to mark the line of incision with a very shallow incision using a scalpel: This is useful on a deeply pigmented man on whom it is difficult to see the line of the marking pen or dabs of gentian violet. Before making the shallow incision, the surgeon must check carefully that the incision line is level with the corona and even amounts of skin are marked for removal from each side of the penis. The incision should be made just through the skin; it is very important not to cut too deeply and divide blood vessels (fig 5.27).

The disadvantage of marking the line of incision with a scalpel is an increased risk of accidental injury to the surgical staff. In addition, a less experienced surgeon may cut too deeply. However, this must be balanced against the risk of a poor result of the circumcision operation if the marking is difficult to see and too much or uneven amounts of skin are removed.

**Step 5.** Grasp the foreskin with artery forceps at the 3 o’clock and 9 o’clock positions. Take care to apply the artery forceps so that there is equal tension on the inner and outer aspects of the foreskin.

**Step 6.** Place two artery forceps on the foreskin in the 11 o’clock and 1 o’clock positions (Fig. 5.29). Check that the inside blades of the two artery forceps are lying between the glans and foreskin, and have not been inadvertently passed up the urethral meatus.

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¹ Surgical care at the district hospital.
Step 7. Between the two artery forceps, in the 12 o’clock position, use dissection scissors to make a cut (the dorsal slit) up to the previously marked incision line (Fig. 5.30).

Step 8. Using dissection scissors, cut the foreskin free, following the previously marked circumcision line (Fig. 5.31).

Step 9. Any skin tags on the inner edge of the foreskin can be trimmed to leave approximately 5 mm of skin proximal to the corona (Fig. 5.32). Care must be taken to trim only the skin and not to cut deeper tissue.

Step 10. Stop any bleeding and suture, as described in steps 7–10 of the forceps-guided method.

Step 11. Check for bleeding. If there is none, apply a dressing (see “Dressing” at the end of this chapter).
**Sleeve resection method of circumcision**

The sleeve resection method requires good surgical skill and is better suited to a hospital rather than a clinic setting. The technique requires an assistant. If bipolar diathermy is available the procedure can be virtually bloodless. Although the cosmetic results are better than with the other two techniques, there is more room for surgical error, either by cutting too deep when making the two circular incisions or cutting too deep when dissecting the skin flap free.

**Step 1.** Prepare skin, drape and administer anaesthesia, as described above.

**Step 2.** Retract the foreskin and remove any adhesions, as described above.

**Step 3.** Mark the intended outer line of the incision, as described above (Fig. 5.33), with a V shape, pointed towards the frenulum, on the underside (ventral aspect) of the penis (Fig. 5.34). The apex of the V should correspond with the midline raphe.

**Step 4.** Retract the foreskin and mark the inner (mucosal) incision line, 1–2 mm proximal to the corona. At the frenulum, the incision line crosses horizontally (Fig. 5.35).

**Step 5.** Using a scalpel, make incisions along the marked lines, taking care to cut through the skin to the subcutaneous tissue but not deeper (Fig. 5.36 and 5.37). As the incision is made, the assistant should retract the skin with a moist gauze swab.

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**Fig. 5.33** Marking the line of the outside cut, just below the corona

**Fig. 5.34** A V is marked on the ventral side (underside) of the penis, with its point towards the frenulum.

**Fig. 5.35** Marking the inner incision line

**Fig. 5.36** Incising along the marked line
Any significant bleeding vessels should be clipped with an artery forceps and tied or secured with an under-running suture. Provided the cut has not been made too deeply, most bleeding will be from the skin edge and can be stopped by simple pressure over a swab.

**Step 6.** Cut the skin between the proximal and distal incisions with scissors, as shown in Fig. 5.39.
DRESSING

Irrespective of the method of circumcision, a standard penile dressing technique is used.

Check that there is no bleeding. Minor bleeding from a skin edge will often stop after five minutes of pressure with a gauze. Once all bleeding has stopped, place a piece of petroleum-jelly-impregnated gauze (tulle gras) around the wound. Place a sterile dry gauze over this, and secure in position with adhesive tape. Take care not to apply the dressing too tightly, as it could restrict the blood supply and cause necrosis of the glans.

![Fig 5.41: Standard dressing.](image)

The dressing should be left in position no longer than 48 hours. Either the patient can return to the clinic where the circumcision was performed, or to another clinic for post-operative follow up and removal of the dressing. If the dressing has dried out it should be gently dabbed with antiseptic solution (aqueous cetrimide, savlon) until it softens. It can then be removed gently. It is important not to disrupt the wound by pulling at a dressing that has dried to the wound.

![Fig 5.42. a) after removal of the gauze swab, b) using cetrimide to soak off a paraffin gauze that has dried to the wound, c) appearance of a wound healing normally 48 hours after the operation](image)
Appendix 5.1

VARIATIONS IN TECHNIQUE FOR MINOR ABNORMALITIES OF THE FORESKIN

The techniques described in this manual assume that the foreskin and frenulum are normal. However, clinic-based circumcision can be undertaken in the presence of minor abnormalities, if the circumcision team has sufficient experience. Any abnormalities should be detected in the preoperative examination of the penis, which should include full retraction of the foreskin. Two abnormalities—both of which are common indications for circumcision—require a slight variation in technique.

Phimosis

Phimosis is scarring of the aperture of the foreskin to the extent that the foreskin cannot be retracted. Often the tip of the foreskin will appear white because of scar tissue. If the scar tissue is extensive, then the man is not suitable for clinic-based circumcision and should be referred to a higher level of care.

The first step in all circumcision operations is to mark the foreskin with the line of the incision. If the sleeve resection method is used, the phimosis will prevent retraction of the foreskin and the line of incision near the corona cannot be marked. In this case, a small dorsal slit should be made, which is just long enough to allow the foreskin to be retracted. Once retracted, any adhesions can be divided and any debris under the foreskin cleaned with a swab soaked in povidone iodine or cetrimide. Once all adhesions have been divided, the second line of incision on the foreskin near the corona can be marked and the circumcision operation can proceed as usual.

In the forceps-guided or dorsal slit methods, the line of incision is marked on the outer aspect of the foreskin in the normal manner. However, with minor degrees of phimosis, it may be necessary to make a small dorsal slit to allow full retraction and cleaning under the foreskin before proceeding with the operation. The forceps-guided method should not be used if there is evidence of gross scarring.

Tight or scarred frenulum

All males have a band of tissue (the frenulum) on the ventral side of the penis, just below the glans. Usually the frenulum does not interfere with retraction of the foreskin. During the early sexual experience, the frenulum may be stretched as the foreskin is retracted, and minor tears are a frequent problem. Such tears can heal, leaving inelastic scar tissue, which tightens and makes further tearing and scarring more likely. The problem can be seen when the foreskin is retracted during physical examination. Instead of the normal pink frenulum, a tight band of white tissue is seen (Fig. 5.43A). This restrictive frenular band can be easily corrected during circumcision.

Spread open the foreskin and retract it ventrally to put the frenular band under tension. Using dissection scissors, snip the band at its centre, taking care not to injure the urethra, which is just under the frenulum. Any bleeding from the frenular artery should be controlled by careful ligature or under-running. After the frenulum has been cut, there will be an inverted V-shaped defect (Fig. 5.43B).

The circumcision can then be performed as usual. In this case, however, do not suture the penile skin up to the edge of the foreskin defect, since this will cause increased tension on the ventral side. This tension may cause curvature of the penis or possibly make erection or coitus uncomfortable. Instead, close the V-shaped defect by placing the frenular suture 1–2 cm (depending on age and penis size) back from the apex of the V, taking both sides of the defect (Fig. 5.43C). The V incision is thus converted into an inverted T. Suture the rest of the skin as in a normal circumcision (Fig. 5.43D).

REFERENCES

Chapter 6

Circumcision of infants and children

SUMMARY
This chapter gives step-by-step instructions for performing a circumcision on an infant or young child. Four surgical techniques are described:

- the dorsal slit method;
- the Plastibell method;
- the Mogen clamp method;
- the Gomco clamp method.

Circumcision of infants is simpler than circumcision of adults and older boys, because the penis is relatively underdeveloped and the foreskin less vascular. Healing is quick and complication rates are low. A major disadvantage is that the child cannot give consent for the procedure. In addition, the primary health benefit – reduced risk of HIV infection – is not realized until many years later when the boy becomes sexually active. Circumcision can be delayed to an older age, when the boy can understand the risks and benefits of circumcision and consent or assent to the procedure himself. Programmes that promote circumcision in infancy are likely to have lower morbidity rates than programmes targeting adolescents and adults. However, this must be balanced by concerns about consent.

Four recommended techniques for circumcision of infants and young boys are illustrated in detail in this manual. They have been selected on the basis of extensive worldwide experience with circumcision and documented low complication rates. It is not recommended that providers learn all the surgical techniques – it is best to become skilled in one paediatric technique. This will produce the best results with the least complications. Providers should become expert in the technique most suited to the circumstances of their practice or the preferred technique adopted nationally. All recommended techniques are fully illustrated and can be referred to in the context of a training course. After the training the illustrations and step-by-step guide can be used to reinforce what has been learnt and for retraining. Experienced surgeons should be able to perform all four techniques with little difficulty, as well as be able to train less experienced providers in any of the techniques described.

SCREENING MALE BABIES AND YOUNG BOYS FOR CIRCUMCISION

The screening procedures for infants and young children are similar to those for adolescents and adults, and are aimed at ensuring that the client is suitable for surgery at the clinic. If there is any doubt, surgery should be deferred or the boy referred to a specialist centre. The circumcision team should enquire about the health of the baby or young boy. In the case of very young babies, enquiries should be made about whether the pregnancy and delivery were normal. Neonatal circumcision (within the first 28 days) should be undertaken only if the birth was a normal full-term delivery, and the baby has had no significant medical problems. Known haematological disorders and jaundice are contraindications to circumcision. Thus any baby with yellow sclera or purpuric skin lesions should not be accepted for clinic-based circumcision. Hypospadias, epispadias and other congenital abnormalities of the genitalia are contraindications to circumcision, because the foreskin may be needed for surgical reconstruction.

CONSENT

In all cases, the procedure can be undertaken only with the full consent of the parents or legal guardian. The parent or legal guardian should be fully informed about how the procedure will be done, what type of anaesthetic will be used, what complications are possible, and what type of postoperative care should be provided. A summary of the information that needs to be provided is given in Appendix 6.1. The consent of the child should also be obtained, if he is able to give it (Chapter 3 addresses this issue in more detail). An example of a consent form is given in Appendix 6.2.

PREPARATION

Before the procedure, the baby should be clean and have a clean, freshly laundered or new disposable nappy. Because mothers may need to travel some distance to the clinic, any clinic offering infant circumcision should have facilities for washing babies and changing nappies.

ANAESTHESIA

Anaesthesia is recommended for paediatric circumcision. Many studies have shown that babies react to pain, and that the best method of local anaesthesia is a dorsal penile nerve block. The maximum safe dose of lidocaine in children is 3 mg/kg of body weight. For a 3-kg baby, this corresponds to 0.9 ml of 1% solution or 1.8 ml of 0.5% solution (see Table 5.1). Anaesthetic solutions containing epinephrine (adrenaline) should never be used.
**Safe injection of local anaesthetic**

It is the surgeon’s responsibility to check the vial of anaesthetic, to ensure that the correct agent at the correct concentration has been selected, and to check the expiry date. It is important to verify that the anaesthetic is clear and that there are no visible particles, which may suggest that the vial is contaminated.

Once the needle is in place, but before injecting any local anaesthetic, the surgeon should gently aspirate to make sure that no blood enters the syringe. This is to ensure that anaesthetic is not injected into a blood vessel. This safety precaution should be repeated each time the needle is moved and before any additional local anaesthetic is injected.

**EMLA cream**

EMLA 5% cream (eutectic mixture of local anaesthetics, containing 2.5% lidocaine and 2.5% prilocaine) has been extensively used for Plastibell circumcision in children of all ages. It is safe and provides effective anaesthesia when correctly used. It must be applied with care in neonates, because of the potential risk of methaemoglobinemia from prilocaine metabolites, which can oxidize haemoglobin. Care must be taken to ensure that the cream is not accidentally rubbed onto a large area of the baby’s body, as a result of the hands and feet wriggling during the procedure. This can be done by covering the penis with a small piece of polythene held in place with a sticking plaster. It has been shown that, provided the cream is applied only to the penis, EMLA is safe for both term and preterm infants. Possible minor adverse events include transient local skin reactions, such as blanching and redness.

EMLA cream should be applied to the whole penis 1-2 hours before the procedure. In older boys whose foreskin can be retracted, the cream should be applied to the glans so that the glans and the underside of the foreskin are covered. Depending on local circumstances, it is often possible for the parent to apply the cream at home before coming to the clinic. If this is done, the clinic staff should ensure that the cream has been applied properly.

The maximum recommended doses and duration of exposure to EMLA cream are summarized in Table 6.1.

**SKIN PREPARATION AND DRAPING**

**Glucose by mouth**

In addition to the local anaesthetic, it helps calm the baby to give him a small amount (1–2 ml) of glucose (sugar) solution by mouth.

**Table 6.1. Recommended maximum exposures to EMLA cream for infants and children**

<table>
<thead>
<tr>
<th>Age group</th>
<th>Maximum dose</th>
<th>Maximum skin area</th>
<th>Period of application</th>
</tr>
</thead>
<tbody>
<tr>
<td>3–11 months</td>
<td>2 g</td>
<td>20 cm²</td>
<td>4 h</td>
</tr>
<tr>
<td>1–5 years</td>
<td>10 g</td>
<td>100 cm²</td>
<td>4 h</td>
</tr>
<tr>
<td>6–11 years</td>
<td>20 g</td>
<td>200 cm²</td>
<td>4 h</td>
</tr>
</tbody>
</table>

**SKIN PREPARATION AND DRAPING**

The penis and lower abdomen should be cleaned with povidone iodine solution. If local anaesthetic injections are
being used, the skin preparation should be done before the anaesthetic is injected. If EMLA cream is being used, skin preparation should be done 1–2 hours after the EMLA cream is applied, just before the procedure starts. The lower abdominal and thigh area should then be covered with a sterile operative drape with a hole to allow the penis through. The drape should not cover the baby’s face.

RETRACTION OF THE FORESKIN AND DEALING WITH ADHESIONS

In infants and children, the foreskin is commonly fused to the glans by fine adhesions. These adhesions are normal. Before circumcision is performed, it is necessary to separate them.

Before the foreskin can be retracted it may be necessary to stretch the opening with an artery forceps. Care must be taken to avoid putting the tips of the forceps into the urethral meatus, in order to avoid injury.

![Fig. 6.2 Stretching the foreskin opening with an artery forceps](image)

Once the opening has been dilated, slowly retract the foreskin and separate adhesions by gently running a blunt probe around the glans, until the corona is exposed. An alternative to a blunt probe is the tip of a closed pair of mosquito artery forceps. It sometimes helps to moisten the glans with chlorhexidine or povidone iodine, or to apply some sterile gel when separating adhesions.

![Fig. 6.3 Retraction of the foreskin and gentle division of adhesions with a blunt probe](image)

PAEDIATRIC SURGICAL METHODS

Four techniques for circumcision of children are described in this section: the dorsal slit method, the Plastibell method, the Mogen clamp method, and the Gomco clamp method.

In babies, the foreskin is long in relation to the penis, and there is little chance of penile erection. This has two important consequences. First, the glans will be further exposed towards puberty, as the penis grows relative to the foreskin. Second, clamping devices that remain on the penis for a few days (e.g. the Plastibell device) are more feasible than with adults, because there is less chance of the device being pushed off by an erection.

While the Mogen and Gomco clamps and conventional surgical technique require the ability to suture, the Plastibell does not.

The Plastibell is a disposable device, whereas the Mogen and Gomco clamps are reusable. The choice between the different techniques may depend on the cost of the Plastibell, the need to sterilize the Mogen and Gomco clamps, and the possible need for suturing skills.

The advantages and disadvantages of the different methods of paediatric circumcision are summarized in Table 6.2.

<table>
<thead>
<tr>
<th>Method</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dorsal slit</td>
<td>Can be performed in any hospital or clinic equipped with standard surgical instruments</td>
<td>Requires more surgical skill than other methods</td>
<td>Can be undertaken by skilled surgeons who do not regularly perform circumcision</td>
</tr>
<tr>
<td>Plastibell</td>
<td>Simple technique, Can be performed using EMLA cream anaesthesia</td>
<td>Requires stock of different sizes of Plastibell</td>
<td>Suitable for clinics dealing with large numbers of babies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Plastibell stays attached for 3–4 days until it drops off</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>May require second clinic attendance to have bell removed</td>
<td></td>
</tr>
<tr>
<td>Method</td>
<td>Advantages</td>
<td>Disadvantages</td>
<td>Comments</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Mogen clamp</td>
<td>Technique using one-piece instrument, which is simple to use; simple to teach</td>
<td>Risk of partial amputation of glans, if device is not applied carefully</td>
<td>Although suturing is not usually needed, it may be on occasion. Thus surgical skills must be available in the clinic where these devices are used.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Risk of glans being buried by cross-adhesions</td>
<td></td>
</tr>
<tr>
<td>Gomco clamp</td>
<td>Simple technique., Can be performed with EMLA anaesthesia</td>
<td>Clinic needs to have a set of Gomco clamps with different bell sizes</td>
<td>Although suturing is not usually needed, it may be on occasion. Thus surgical skills must be available in the clinic where these devices are used.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Multipart device, with risk that parts will be lost or damaged</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parts not readily interchangeable between different clamp sets</td>
<td></td>
</tr>
</tbody>
</table>

**Suture material**

Sutures are used in the Dorsal slit method, and may occasionally be required for the Gomco and Mogen clamp methods. Suture size is a compromise between ensuring adequate tensile strength and keeping the amount of foreign material to a minimum. The preferred suture size for paediatric surgery is 5-0 or 4-0 chromic catgut or vicryl rapide. The suture should be mounted on a round-bodied needle.

**Dorsal slit method for children**

The Dorsal slit technique can be undertaken by any skilled surgeon, using standard operating instruments. The technique is useful in clinics undertaking limited numbers of paediatric procedures. The penis of an infant is small, and any surgeon who is going to undertake paediatric circumcision should already be competent with general surgical skills and adult procedures. There is a need for fine movements and small tissue bites. In particular, the surgeon must take care in the region of the frenulum, because the urethra is close to the skin, and can easily be injured by careless or clumsy technique.

**Step 1.** With a sterile marker pen or dabs of gentian violet, mark the line of the circumcision over the corona, with no tension on the foreskin, using the technique described in Chapter 5.

![Fig. 6.4 Marking the line of the circumcision.](image_url)

**Step 2.** Clamp the foreskin at the 12 o’clock position, taking care not to place the tip of the clamp beyond the previously marked circumcision line (Fig. 6.5). Close the clamp to crush the skin and leave in place for one minute. This reduces bleeding.
Hold the foreskin with artery forceps on each side of the crushed area, at the 11 o'clock and 1 o'clock positions. Using scissors, make a cut at the 12 o'clock position, through the crushed skin (Fig. 6.6).

**Step 3.** Using scissors, cut the foreskin free, following the previously marked circumcision line (Fig. 6.7). Some surgeons use the bell of the Plastibell as a guide. This has the advantage of protecting the glans but the disadvantage that a new Plastibell device is required each time.

It may be necessary to trim the mucosal layer of the foreskin to 2–3 mm from the corona. If this layer is left too long, the suture line can slip back over the glans, constricting it and making it appear as if the foreskin has not been removed (“concealed glans”).

Control any significant bleeding by clipping the blood vessel with an artery forceps and then tying. Bipolar diathermy may be used, if available. Minor bleeding can be controlled with simple pressure for five minutes.

Control any significant bleeding by clipping the blood vessel with an artery forceps and then tying. Bipolar diathermy may be used, if available. Minor bleeding can be controlled with simple pressure for five minutes.

**Step 4.** Suture the edges of the foreskin together with 5-0 or 4-0 vicryl or catgut sutures (depending on the age of the child) and a round-bodied needle. Cutting needles should not be used.

Approximate the skin edges and the frenulum using simple sutures; mattress sutures are not necessary. Take great care at the frenulum, because the urethra is near the surface and can easily be injured by too deep a stitch bite. Place all sutures approximately 1 mm from the skin edge. Place the first two sutures at the 12 o'clock and 6 o'clock positions, leaving them long and temporarily held with forceps (Fig. 6.8). This keeps the penis stable while the remaining sutures are completed. In babies, only two further stitches may be needed on each side. In older children, it is helpful to place sutures at the 3 o'clock and 9 o'clock positions, and then to place the final sutures in between.

Finally, inspect the wound and apply a piece of gauze impregnated with petroleum jelly or with petroleum jelly plus antibiotic.
Information for parents

The parents of infants and children who have had a dorsal slit circumcision should be told that it is not necessary to use a dressing, and the baby can be looked after in the regular way, including normal washing and use of nappies. Healing is usually complete after about one week.

The parents should be told to come back to the clinic if:
- the child appears to be distressed or in pain;
- the child has fever;
- the child does not wake for feeding as per his usual pattern;
- the glans or wound becomes discoloured;
- there is any separation of the skin edges;
- there is any unusual swelling or bleeding;
- the child has any difficulties with urination;
- the parents have any other worry about healing.

The Plastibell method

The Plastibell technique is widely used around the world and has been shown to be acceptable and practical in developing country situations. This technique requires less surgical skill than the dorsal slit method to produce a neat result. It can be used in children up to the age of 10–12 years, and can be used with EMLA anaesthetic cream. However, as for other surgical methods, incorrect technique can result in complications. Any clinic offering Plastibell circumcision needs to have in stock the full range of bell sizes. If the bell used is too small, it may cause pressure necrosis and injury to the glans. If the bell is too large, it may slip over the glans onto the shaft of the penis and cause skin loss. For these reasons, the Plastibell technique is only recommended for use in clinics that regularly perform paediatric circumcisions; it is not recommended for occasional use.

The Plastibell is manufactured by the Hollister company and comes in a sterile package.

Fig. 6.9 The Plastibell device (manufactured by Hollister Inc., 2000 Hollister Drive, Libertyville, Illinois 60048, USA)

**Step 1.** Select the correct size of Plastibell.

**Step 2.** After preparing and draping the patient, perform a dorsal nerve block (not required if EMLA cream anaesthesia used). Retract the foreskin and separate adhesions to expose the corona, as described above.

**Step 3.** It is usually necessary to make a dorsal slit (see above) before the Plastibell can be placed on the glans. The slit needs
only to be sufficiently long to allow the Plastibell to be placed over the glans. Each Plastibell is supplied in a sterile packet with a ligature – the Plastibell tie. The procedure is easier if, after opening the Plastibell package, the Plastibell tie is placed loosely around the shaft of the penis before the dorsal slit is made (Fig. 6.10).

Fig. 6.10 The dorsal slit, allowing access to the glans

**Step 4.** Place the Plastibell on the glans, as shown in Fig. 6.11.

![Fig. 6.11 Placing the Plastibell on the glans](image)

**Step 5.** Pull the foreskin back over the Plastibell. It is sometimes helpful to hold the foreskin in position by clipping it to the Plastibell handle with an artery forceps (Fig. 6.12).

![Fig. 6.12 An artery forceps is used to secure the foreskin to the handle of the Plastibell](image)

**Step 6.** Carefully place the ligature in the groove of the Plastibell. Ensure that it is in the correct position, then pull it tight and tie. Cut off the foreskin using scissors, leaving 1–2 mm of cuff to prevent the ligature from slipping off.

![Fig. 6.13 Cutting away the foreskin](image)

**Step 7.** Snap off the handle of the Plastibell.
Fig. 6.14 Snapping off the Plastibell handle

**Step 8.** Check that there is no bleeding. If all is well, the child can be sent home and looked after in the normal way, including normal washing and use of nappies. The rim of tissue distal to the ligature will become necrotic and the Plastibell will drop off after 5–8 days. Alternatively the infant can be checked after 36–48 hours and the ligature cut.

**Information for parents**

The parents of infants and children who have had a Plastibell circumcision should be told that it is not necessary to use a dressing, and the baby can be looked after in the normal way, including normal washing and use of nappies. Healing is usually complete after about one week. Bleeding is rare because the clamp crushes the edge of the foreskin. The parents should be told to come back to the clinic if:

- the child appears to be distressed or in pain;
- the child has fever;
- the child does not wake for feeding as per his usual pattern;
- there is any separation of the skin edges;
- there is any unusual swelling or bleeding;
- the child has any difficulties with urination;
- the plastic ring slips onto the shaft of the penis;
- one part of the foreskin remains pink or has not shrivelled after 48 hours;
- the plastic ring has not fallen off within 8 days;
- the parents have any other worry about healing.

Fig. 6.15 The Mogen clamp

**The Mogen clamp method**

The Mogen clamp is widely used in North America, but less so elsewhere. There have been several studies comparing it with the Gomco clamp, another widely used device. The Mogen clamp ("a shield") compares favourably, because it is easy to use and has no parts to assemble. The fewest complications with this method have been reported in the context of circumcision in 8-day-old babies. However, because the Mogen clamp is reusable, careful precautions have to be taken to ensure the device is properly cleaned and sterilized between procedures. Also there is a risk that the glans can be pulled into the slit and crushed or partially severed.

**Step 1.** After preparing and draping the patient, perform a dorsal nerve block. Retract the foreskin and separate adhesions to expose the corona, as described previously. It is important to separate all adhesions in order to prevent the glans getting accidentally pulled into the Mogen clamp and injured.
Step 2. Put traction on the foreskin, and introduce it into the slit in the device, with the concavity facing the glans. It is important to ensure that the glans is not pulled into the slit. If there is any doubt, remove the clamp, inspect the glans for any sign of crushing injury and reapply the clamp.

Fig. 6.16 The Mogen device in situ

Step 3. Close the device, crushing the foreskin. Leave in the closed position for 3–5 minutes, to reduce the risk of bleeding.

Step 4. Cut off the foreskin on the outer side of the clamp with a scalpel. Open the device and remove.

Fig. 6.17 The foreskin is cut flush with the clamp using a scalpel. The Mogen clamp device protects the glans from injury.

Step 5. Manipulate the penis, using gentle pressure from the side, to allow the glans to emerge from under the crushed foreskin. This is an important step to prevent adhesion between the edges of the foreskin across the glans, and to prevent the condition of buried (concealed) glans. If too much pressure is applied the skin edges may separate. If this occurs, place some 5-0 simple sutures to approximate the edges.

Fig. 6.18 Liberating the glans after removing the Mogen clamp

Step 6. Wrap a piece of petroleum-jelly-impregnated gauze loosely around the penis.

Information for parents

The parents of an infant or child who has had a circumcision using the Mogen clamp technique should be told that it is not necessary to use a dressing and the child can be looked after in the normal way, including normal washing and the use of nappies. Healing is usually complete after about one week. Bleeding is rare because the clamp crushes the edge of the foreskin.

The parents should be told to come back to the clinic if:
- the child appears to be distressed or in pain;
- the child has fever;
- the child does not wake for feeding as per his usual pattern;
- there is any separation of the skin edges;
- there is any unusual swelling or bleeding;
- the child has any difficulties with urination;
- the parents have any other worry about healing.
The Gomco clamp method

The Gomco clamp has different bell sizes that can be used for infants, older children and adults. In addition, the crushing of the foreskin is circular (unlike with the Mogen clamp) and there is no risk of the opposite sides of the foreskin sticking together to result in a concealed glans. The disadvantage of the Gomco clamp is that, unlike the Mogen clamp, it consists of four parts – base plate, rocker arm or top plate, nut and bell. A number of bells of different sizes are also needed. There is a risk that parts of the clamp may be mislaid or lost during cleaning and sterilization. The surgeon must check that all the parts of the Gomco clamp and the necessary bell sizes are available before any anaesthetic is given and the procedure starts.

The Gomco clamp should be thoroughly checked before use. It should not be used if it has stripped threads, a warped or bent base plate, a bent arm, twisted forks on the rocker arm, or a scored or nicked bell. Component parts from different clamps are not interchangeable. It is essential that each clamp is assembled from its original set of parts. Parts from different clamps, even from the same manufacturer, should not be mixed. The clinic may mark clamp parts to ensure that they are correctly reassembled. If so, the manufacturer should be consulted on the best way to do this. Some marking methods may weaken the device or make it difficult to sterilize it.

Step 1.
After preparing and draping the patient, perform a dorsal nerve block (not required if EMLA cream anaesthesia used). Retract the foreskin and separate adhesions to expose the corona, as described previously.

Step 2.
It is usually necessary to make a small dorsal slit to allow the clamp to be placed on the glans (see p. XX for details). It is important not to make the dorsal slit too long. Otherwise, it will extend beyond the ring of crushed tissue produced by the Gomco clamp and may produce an untidy result with increased risk of bleeding. The dorsal slit should be long enough to allow all adhesions to be divided and the bell of the Gomco clamp to be placed over the glans.


Fig. 6.20 Photograph of Gomco clamp.

Fig. 6.21 Making a small dorsal slit in preparation for placing the Gomco clamp.
Step 3. Choose the correct size of Gomco clamp bell to fit the glans. For neonatal circumcision, a bell size of 1.3 cm is usually appropriate. Introduce the bell through the aperture in the foreskin and place over the glans. Then pull the foreskin over the bell.

Fig. 6.22 Placing the bell and base plate of the Gomco clamp.

Step 4. Place the base plate of the Gomco clamp over the bell, keeping the foreskin pulled over the bell. Put the rocker arm of the clamp in position, taking care to place the crossbar at the top of the bell correctly in the yoke. The clamp is now ready for tightening.

Before tightening the clamp, make sure that the foreskin is symmetrical over the bell. The apex of the dorsal slit should be visible. Finally, the crossbar at the top of the bell should sit squarely in the yoke of the clamp, otherwise there will be uneven crushing and a risk of bleeding.

Fig. 6.23 Placing the base plate over the bell

Step 5. Once you are sure that the clamp is in the optimal position, tighten the nut until the foreskin is crushed.

Fig. 6.24 Tightening the clamp.

Step 6. Using a scalpel, excise the foreskin circumferentially against the bell, distal to the clamp. The head of the penis is protected from being cut by the bell of the clamp. Leave the clamp in position for 3–5 minutes, then loosen and remove.

Fig. 6.25 Excising the foreskin.
Fig. 6.26 Completed circumcision using the Gomco clamp procedure.

**Step 7.** Once the clamp has been removed, the skin edges will be stuck together by pressure. Normally sutures are not required. Occasionally the skin edges may separate. This is most frequently because:
(a) the dorsal slit is too long, so that its apex has extended beyond the crushed skin edge;
(b) the crossbar of the bell was placed unevenly in the yoke of the rocker arm, resulting in an uneven distribution of the crushing force; or
(c) the foreskin was not symmetrical over the bell.

If the edges have separated, you may need to insert one or two absorbable sutures.

**Information for parents**

The parents of an infant or child who has had a Gomco clamp circumcision should be told that it is not necessary to use a dressing, and the baby can be looked after in the normal way, including normal washing and the use of nappies. Healing is usually complete after about one week. Bleeding is rare because the clamp crushes the edge of the foreskin. Parents should be told to bring the child back to the clinic if:
- the child appears to be distressed or in pain;
- the child has fever;
- the child does not wake for feeding as per his usual pattern;
- there is any separation of the skin edges;
- there is any unusual swelling or bleeding;
- the child has any difficulties with urination;
- the parents have any other concern about healing.

**REFERENCES**

2. [www.brismilah.com/pic1.jpg](http://www.brismilah.com/pic1.jpg) (accessed 31Dec06)
Appendix 6.1

INFORMATION FOR PARENTS CONSIDERING CIRCUMCISION FOR THEIR CHILD

Parents should be given information about circumcision so that they can give informed consent to the procedure. The information should be given verbally. In addition, the clinic should print information sheets that the parents can take home. Information given needs to be specific to the clinic, and should include the following topics.

- **What circumcision is.** Circumcision is removal of the foreskin. This means that the head of the penis is exposed all the time. It does not affect the ability to pass urine normally and does not affect the ability to father children in adult life.
- **The benefits of circumcision.** The main benefits of circumcision are increased penile hygiene, reduced risk of sexually transmitted infections, including HIV, and reduced risk of cancer of the penis.
- **How circumcision is done.** The technique to be used should be described, i.e. dorsal slit with sutures, Plastibell, Mogen or Gomco clamp methods.
- **The risks of circumcision.** There is a very small risk of bleeding or infection after the operation. Even if these problems occur, they can easily be treated. There are no significant long-term risks associated with the procedure, when it is performed correctly in a clinic-based setting.
- **What to do before circumcision.** No special precautions are needed before the operation. If the child becomes ill before the planned operation date, the parents should contact the clinic to postpone the procedure until after the child recovers.
- **What to do after circumcision.** The instructions will depend on the procedure that has been used (see descriptions of techniques in Chapter 6).
- **What to do if there are any complications or problems after circumcision.**
- **An emergency contact number or information about where to go in an emergency.**

Appendix 6.2

SAMPLE CONSENT DOCUMENT FOR A MINOR

The name of my son is __________________________ (BLOCK CAPITALS)

My name is __________________________ (BLOCK CAPITALS)

I am the boy’s parent/legal guardian.

I am asking you to do a circumcision operation (removal of the foreskin) on my son/ward and I give you permission to do this operation.

Signed …………………………………………

(parent or legal guardian)

My name is  __________________________________  (BLOCK CAPITALS)

I am the counsellor/surgeon who has given information to the parent or guardian of the above-mentioned boy.

I have given information about:

- what circumcision is;
- the benefits of circumcision;
- how circumcision is done;
- the risks of circumcision;
- what to do before circumcision;
- what to do after circumcision;
- what to do if there are any complications or problems after circumcision;
- an emergency contact number and information about where to go in an emergency.

I have given the client an opportunity to ask me questions about all the above.

I have asked the parent or guardian some questions to make sure that he or she understands the information I have given.

To the best of my belief the client is capable of giving consent and has enough information to make a proper decision about whether to proceed with the operation of circumcision.

Signed ………………………………………………………

(Circumcision clinic counsellor or surgeon)
**Chapter 7**

**Postoperative care and management of complications**

**Summary**

- Possible complications of male circumcision include excessive bleeding, formation of haematoma, infection, an unsatisfactory cosmetic effect, lacerations of the penile or scrotal skin, and injury to the glans.
- Certain complications can be managed in the clinic. For others, the patient may need to be referred to a higher level of care.
- Complications of circumcision can be avoided by ensuring asepsis during the procedure, performing careful and accurate excision of the inner and outer preputial layers, ensuring adequate haemostasis, and paying attention to the cosmetic result.

**POSTOPERATIVE CARE**

**Postoperative monitoring**

It is very important to monitor the client for at least 30 minutes after surgery, because it is during this period that the effects of surgical trauma and other complications become apparent. Nurses or other staff members can carry out the tasks related to postoperative recovery and discharge, but the surgeon is ultimately responsible for the quality of post-circumcision care.

The summary below assumes that the circumcision has been performed in a clinic under local anaesthetic.

- Receive the client from the theatre; review the client record.
- Monitor the client’s vital signs: check blood pressure, breathing, and pulse twice, at 15-minute intervals.
- Check the surgical dressing for oozing or bleeding.
- Ask the patient if he has any pain.
- Observe the general condition of the client.
- Administer any drugs or treatment prescribed.
- Provide bland carbohydrates and liquids to raise blood sugar levels.
- Handle the client gently when moving him.
- Make the client comfortable, according to the climate.
- Complete the client record form.

Where circumcision was performed in a hospital under general anaesthetic, the normal hospital recovery room protocols should be followed.

All men have occasional penile erections during sleep, and young men frequently get erections during the day. After the circumcision, the man will still have erections, which will not disrupt the process of wound healing. If, during the immediate recovery period, there is a particularly prolonged or painful erection, it can be stopped by letting the client inhale one ampoule of amyl nitrate.

**Instructions for the client**

It is very important to inform the client that he should avoid sexual intercourse and masturbation for 4–6 weeks after the procedure, to prevent breakdown of the wound. A condom should then be used to protect the wound during every act of sexual intercourse for at least six months.

The dressing applied during surgery should be removed 24–48 hours later, provided that there is no bleeding or oozing. Any bleeding or oozing may require a new dressing for a further period of 24 to 48h with a subsequent review. No further dressing is necessary, and the patient should be instructed to wear freshly laundered, loose-fitting underwear. Underwear should be changed each day. After the dressing has been removed, the man can shower twice a day, and should gently wash the genital area with mild soap (baby soap) and water. (This advice may be adapted according to local conditions, including the availability of facilities for washing and showering.)

Before discharging the client, make sure that he understands that complications are infrequent, but that he should:

- Look for signs of potential problems, namely:
  - increasing bleeding,
  - severe pain in the penis or genital area,
  - inability to pass urine, or severe pain when passing urine,
  - discharge of pus from the surgical wound, and increased swelling;
- Return to the clinic immediately or seek emergency care if a problem develops.

Make sure the client knows where to go if complications arise.

Give the client postoperative instructions, verbally and in writing, if appropriate (see Appendix 7.1). Ask him to repeat the instructions, to make sure that he has understood them. Give him any medications prescribed, and arrange an appointment for follow-up (see below). Check that a responsible adult is available to accompany the client home (this is of particular importance for clients who are below the age of consent). It is helpful if the instructions given to the client are also given to any accompanying adult.
The surgeon or designated member of the team should assess whether the client is ready for discharge. Finally, the client record should be completed.

Transfer of client records

All client records should be kept 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 indicate the date of the procedure, the type of procedure, and any special instructions. If it is necessary to transfer the client’s records, a copy should be made and the original kept at the facility where the surgery took place.

FOLLOW-UP VISITS

Ideally, the surgeon who performed the circumcision should conduct the follow-up examination. However, if this is not possible, a trained non-physician can perform the examination and manage minor complications. If the client goes to a different health centre for follow-up, it is important that the staff at that facility are trained to do a careful follow-up examination and report any complications to the facility where the circumcision took place.

Routine follow-up

The follow-up visit should be within 7 days of surgery. The provider should assess the progress of healing and look for signs of infection. The operation site should be examined, and additional examinations should be done as required by the case history, symptoms or complaints of the client. If the client has a problem that cannot be resolved, another visit should be scheduled or he should be referred to a higher level of care.

At the follow-up visit:

- Check the medical record or referral form for background information on the client and the surgical procedure.
- Ask the client if he has had any problems or complaints since the surgery. Specifically, ask if he has experienced any of the following:
  - discharge or bleeding from the wound,
  - difficulty urinating,
  - fever,
  - pain or other distress, or
  - swelling of the penis or scrotum.
- Examine the operation site to assess healing and ensure that there is no infection.
- Treat any complications found during the examination, or refer the client to a higher level.
- Ask the client whether he is satisfied with the service provided or has any comments to make that will help improve the service.
- Document the follow-up visit in the client’s medical record, including any complaints, diagnosis, treatment and comments.

Emergency follow-up

Clients who come for an emergency follow-up visit should be seen immediately. Staff should be alert to the possibility of excessive bleeding or infection.

At an emergency visit:

- Examine the client immediately. Check all areas related to his complaint.
- Read the medical record, if available.
- Ask the client about the sequence of events since the operation. Ask about:
  - any problems during the surgery or in the recovery period;
  - how problems developed;
  - any increase in discomfort;
  - and any medication or other treatments obtained.
- Arrange for treatment of any problems that can be handled on an outpatient basis.
- Refer the client to a higher level of care for treatment of potentially serious complications.
- Note on the client record all problems and actions taken.
- Inform the facility where the male circumcision was performed about the emergency follow-up visit (if applicable).

RECOGNITION AND MANAGEMENT OF COMPLICATIONS

This section describes the complications that can be managed in the clinic setting, and the indications for referral to a higher level of care.

If complications occur during or after the circumcision, the team should take the time to inform the client, and if possible his family, about what has happened and the plans to deal with the complication. Anxiety and fear of the unknown add to the distress caused by
complications. These can be greatly reduced if the client is given clear explanations about what is happening.

For example, a complaint of increasing penile pain and fever 4–5 days after surgery is indicative of wound infection. If there are signs of infection on examination, the client should be given antibiotics and the situation reviewed after 24–48 hours, depending on the severity of the complaint. In these circumstances, the client and his family should be told there is an infection, that antibiotics are needed, and when the situation will be reviewed.

Organizing referrals

A circumcision team working in a clinic setting should have standing arrangements with the nearest referral centre, so that there are no bureaucratic obstacles when referral is required. When strengthening or establishing national or local circumcision services, adequate funding for referrals should be included as part of the cost of the circumcision service.

Many complications can be managed in the clinic setting, but occasionally emergency transfer may be needed. When there is a need for emergency transfer, the following general rules apply:

- The client should be transferred by ambulance, lying flat.
- The client and his family should be given a full explanation of what is happening and why.
- A clear note should be sent to the referral centre with the client.
- The client should be told not to eat and, depending on the length of the journey, not to drink, as a general anaesthetic may need to be given at the referral centre. Any accompanying family member should also be given this information.

Complications occurring during surgery

- Excessive adhesions. If the client has phimosis, so that the foreskin cannot be retracted prior to surgery, there is uncertainty about what will be found once the dorsal slit has been made and the foreskin retracted. If there are excessive adhesions, it may be difficult to separate the foreskin from the glans. Depending on the experience of the circumcision team, it may be better to stop the procedure and refer the man to a hospital. In this situation, the dorsal slit will have to be repaired, using stitches to stop bleeding. It will not be possible to put on a dressing because the man will need to urinate. Nevertheless, the area should be kept as clean as possible. The wound should be covered with a gauze swab, which the man can keep in place by wearing tight underpants. Arrangements should be made for the man to attend the local referral hospital as soon as convenient, and in any case within 24–48 hours.

- Excess bleeding during surgery. If there is excessive bleeding during the surgery, the first rule for the surgeon is not to panic. More damage is caused by panic attempts to stop bleeding than by the original injury. Place a swab under the penis and a second swab over the bleeding point, apply firm pressure, and wait five minutes (timed by the clock). After five minutes, slowly lift off the swab. Often, the bleeding will have stopped. Do not be tempted to look under the swab before five minutes have elapsed. If the bleeding has not stopped after five minutes, the site of the bleeding will be obvious. Apply a haemostatic artery forceps to the bleeding point. If this does not control the bleeding, apply pressure over a gauze swab for a further 5 minutes (timed). At the end of this time, gently lift the swab again, and under-run the bleeding area with a figure of eight suture. Remember that the larger blood vessels generally run along the length of the penis, and place the suture proximal to the bleeding (that is, on the side towards the base rather than the tip of the penis). It is very likely that these measures will control bleeding. If, exceptionally, the bleeding continues, the man should be transferred to a referral centre as an emergency, or a more experienced surgeon should be called to help.

- Bleeding from the frenular artery. If there is excessive bleeding from the frenular artery, an under-running haemostatic stitch should be used to occlude the artery (Fig. 7.1). Great care is needed not to bite too deeply, because the urethra is near to the surface skin and can easily be damaged.

Fig. 7.1 Suture under running the frenular artery
- **Accidental injury.** Accidental injury can include injury to the glans (e.g. partial severing of the glans) or too deep an incision, resulting in bleeding that is difficult to control. Any bleeding should be controlled by applying pressure over a piece of gauze, and the man should be transferred as an emergency to a referral centre. If the transfer time is likely to be long, insert a urinary catheter, wrap the penis in sterile gauze, and tape the gauze in place. During the transfer, the client should lie flat. At all times, the client and his relatives should be kept informed about what has happened and what is going to be done. The risk of such accidents is reduced if the surgeon has received proper training and certification, and if there is a system of ongoing appraisal and recertification. Risks are higher if the surgeon becomes overconfident, or when timetable constraints result in operations being done in a hurry. To avoid this, countries need to have established and well funded training and recertification procedures, and clinics need to ensure that adequate time is allowed for surgery.

- **Severing of the glans.** If part or all of the glans has been severed, it should be wrapped in a sterile paraffin gauze to prevent drying and placed in a polythene bag. The man and his glans should be transferred as soon as possible to a referral centre, where it may be possible to reattach the glans.

### Complications occurring within the first 48 hours after surgery

- **Bleeding** is the most likely complication during the first 24–48 hours. A small amount of bleeding onto the gauze dressings is usual, but may alarm the client. If he comes back to the clinic with blood-soaked dressings, these should be removed and the circumcision wound inspected for an obvious bleeding point. If there is fresh blood from the skin edge, a further suture should be inserted. This will require a full sterile procedure, as for the original circumcision, including local anaesthesia and sterile draping. Usually, placing one or two additional mattress sutures over the area will stop the bleeding.

- **Haematoma** may form and may be associated with considerable bruising and skin discoloration. In general, haematomas are best left alone, unless they are very large or there is continued bleeding. The choice is between applying a further clean dressing and reviewing the situation in 24 hours, or applying a clean dressing and sending the client to a referral centre. If the circumcision team is relatively inexperienced, it is safer to send the man to the referral centre.

- **Wound disruption** is unusual in the first few days, but is sometimes seen in association with subcutaneous bleeding and haematoma formation, when the stitches cut out. In this situation the man should be sent to a referral centre. The specialist at the referral centre may decide either to suture the wound or to leave it to heal by secondary intention, depending on the state of the skin edges. If the disruption occurs within 48 hours of the operation, it is usually better for the clinic surgeon to explore and re-suture the wound.

### Complications that occur within the first two weeks after surgery

- **Infection.** After 2–3 days, the most likely problem is wound infection. An infection often causes increasing pain, and there may be visible signs, such as redness or purulent discharge. The patient should be given an appropriate antibiotic, and advised to take frequent showers and to put a clean dressing on the wound between showers. If the infection is severe, the man should be advised to lie on his back, so that his penis is the highest point of his body. This promotes drainage of lymphatic fluid and speeds up the healing process. Sitting in a chair is a bad position. Alternatively the wound can be left without a dressing, but should be protected from flies.

- **Wound disruption and cutting out of stitches.** When stitches come out, this usually indicates that there is an infection, and the patient should be given antibiotics (see above). If more than 48 hours have passed since the operation, do not try to re-suture the wound, as the new stitches are likely to become infected and also cut out, making the situation worse. The wound should be left to heal by secondary intention. The man should be seen regularly at the clinic until the wound has healed. In general, the healing process after infection leaves an untidy result, at least for the first few months. The man should be reassured that the appearance will usually become normal after about a year.

- **Worsening wound infection with signs of gangrene.** A rare risk of genital surgery is infection with multiple bacteria, causing progressive skin loss. In this situation, the blood supply is cut off, and the skin becomes necrotic and turns completely black. This condition is known as Fournier’s gangrene (synergistic gangrene or necrotizing fasciitis), and is more common in men who have diabetes. Any man with signs of spreading infection or black gangrenous skin should be urgently transferred to a referral centre. At the referral centre, it is usually necessary to give a general anaesthetic and remove all the dead skin.

### Late complications

In the long term, the client may complain of:

- decreased sensitivity of the glans;
- oversensitivity of the glans;
- unsightly circumcision wounds, ragged scars or other cosmetic concerns;
- persistent adhesions at the corona and inclusion cysts. These problems can be avoided if the foreskin is fully retracted during the operation and all adhesions carefully divided;
- Discomfort during erection from scrotal skin pulled up the shaft of the penis and a tight scrotal sac. This can result from removal of
too much skin during the circumcision. These problems can be avoided by careful preoperative marking of the incision lines.

- torsion (misalignment) of the skin of the penile shaft. This can be avoided by taking care during the operation to align the midline raphe with the frenulum.

Appendix 7.1

SAMPLE POSTOPERATIVE INSTRUCTIONS FOR MEN WHO HAVE BEEN CIRCUMCISED

- After the operation, rest at home for one or two days. This will help the wound to heal.
- You may bathe on the day after surgery, but do not let the dressing get wet.
- Remove the dressing 24–48 hours after surgery.
- Do not pull or scratch the wound while it is healing.
- Do not have sexual intercourse or masturbate for 4–6 weeks, and use condoms to protect the wound for every act of sexual intercourse for at least six months until the wound has healed completely. (Your health care provider will advise you about this during your follow-up visit.)
- You may have a little pain or swelling around the wound. This is normal. Check occasionally to make sure that it does not get worse. Take any medicines provided or recommended by the clinic. Be sure to follow the instructions given to you.
- Return to the clinic or call:
  - if you notice increased bleeding from the surgical wound;
  - if the pain or swelling at the surgical wound get progressively worse;
  - if you have difficulty in passing urine;
  - if you develop a fever within one week of surgery;
  - if you have severe pain in the lower abdomen;
  - if the wound is discharging pus.
- If you have any of these problems, go to: ________________________________
- Return to the clinic for a follow-up visit about one week after the operation. A health care worker will check to see how the wound is healing.

Your next appointment is:

Day ___________________________ Date ___________________________ Time ___________________________ Place ___________________________
Chapter 8

PREVENTION OF INFECTION

SUMMARY
- Health care workers need to follow recommended practices for preventing infection, in order to protect themselves, other health care workers, and their patients from exposure to HIV and other infections.
- Hand hygiene greatly reduces the number of disease-causing microorganisms on hands and arms. It is the most important way of limiting the spread of infection. If hands are visibly soiled, they should be washed with soap and water; otherwise, an alcohol-based handrub should be used.
- Personal protective equipment should be worn to protect both patients and staff from infectious microorganisms.
- Gloves should be worn: when there is a reasonable chance of hand contact with blood or other body fluids, mucous membranes, broken or cut skin; when performing any invasive procedure; and when handling contaminated items. A new pair of gloves should be worn for each new patient contact, to avoid spreading infection from person to person.
- Hypodermic (hollow-bore) needles can cause injuries to clinic staff at all levels: workers can be stuck by hypodermic needles during patient care, cleaning and housekeeping. Staff may be exposed to needle-stick and sharp injuries when washing soiled instruments and disposing of infectious waste material.
- All staff should be trained in the proper handling of sharp instruments.
- Soiled instruments and other reusable items can transmit disease if not properly cleaned, disinfected and sterilized (or high-level disinfected). High-level disinfection destroys all microorganisms, except some bacterial endospores. Sterilization destroys all microorganisms, including bacterial endospores.
- Proper waste management is important to prevent accidental injury to people who handle waste items, and to prevent the spread of infection to health care workers and the local community.
- Post-exposure prophylaxis with antiretroviral drugs may reduce the risk of infection after exposure to HIV. It will be effective only if it is started as soon as possible after exposure and if the full course of treatment is adhered to.
- Post-exposure prophylaxis for hepatitis B can reduce the risk of hepatitis B infection.

BASIC CONCEPTS

Measures to prevent infection in male circumcision programmes have two primary objectives:
- to prevent infections in people having surgery;
- to minimize the risk of transmitting HIV and other infections to clients and health care staff, including cleaning and housekeeping staff.

In the context of circumcision services, there are two important pathways for transmission of infection:
- **Direct transmission.** Enteric and skin infections can be transmitted by this route, as can bloodborne pathogens.
- **Airborne transmission.** Pneumonia, pertussis, diphtheria, influenza type B, mumps, and meningitis can be transmitted through droplets in the air, while active pulmonary tuberculosis, measles, chickenpox, pulmonary plague, and haemorrhagic fever with pneumonic can be transmitted via droplet nuclei.

In male circumcision programmes, a major concern is the potential transmission of bloodborne pathogens, such as HIV and hepatitis B virus, to health care workers or patients. This can occur as a result of exposure to blood, blood products or body fluids of an infected person, either by direct contact with an open wound, blood or body fluids, or through an accidental needle-stick injury. Such exposure may take place during patient care, clinical or surgical procedures, processing of soiled instruments, cleaning and waste disposal. Needle-stick injuries carry a high risk of infection; the actual level of risk will depend on the type of needle, the depth of the injury, the amount of blood or blood product on the needle, and the viral load in the blood.

The risk of acquiring HIV from an HIV-infected person through a needle-stick injury is estimated at 0.3% (three HIV infections for every 1000 injuries). The risk of acquiring hepatitis B virus infection, after being stuck with a needle that has been used on a person with hepatitis B infection ranges from 6% to 37%, with an average of 16%. Finally, the risk of acquiring hepatitis C infection after being stuck with a needle that has been used on a hepatitis-C-infected person is 1.8%.1

Most instances of transmission of infection in health care facilities can be prevented through the application of basic infection control precautions. In the circumcision clinic, standard precautions, as described below, should be applied to all patients at all times, regardless of their infection status.
STANDARD PRECAUTIONS

Standard precautions are a set of practices to prevent and control infection. They include the use of personal protective equipment, designed to protect health care workers and patients from contact with infectious agents.

Health care workers can protect themselves and their patients from exposure to HIV and other infections by following standard precautions.

Often, during clinical care, it is not known whether a patient is infected or colonized with potentially pathogenic microorganisms. Every patient, and every member of staff, should therefore be considered at risk both of infecting others and of acquiring an infection. Standard precautions should therefore be applied during all contact between health care workers and patients, in all health care facilities at all times.

The key components of standard precautions are:

- hand washing and antisepsis (hand hygiene);
- use of personal protective equipment when handling blood, blood products and other body fluids;
- prevention of needle-stick and sharp injuries;
- appropriate handling of patient care equipment, environmental cleaning and management of spills;
- appropriate handling of waste.

Each of these components is discussed in detail below.

HAND HYGIENE

Hand hygiene is the single most important and cost-effective measure to eliminate disease-causing microorganisms that contaminate hands, and to limit the spread of infection. Proper hand hygiene can be accomplished by frequent handwashing or frequent use of an alcohol-based handrub.

In most clinical situations, an alcohol-based handrub should be used for routine hand antisepsis. Commercial handrubs, liquid soaps and skin-care products are sold in disposable containers, and may be used provided they meet recognized international standards and are well accepted by health care workers. Where such products are not available or are too costly, an alcohol-based handrub can be produced locally at low cost.

Clean water should be available for hand hygiene in all health care settings providing services related to male circumcision (screening, surgery, and follow-up). All staff should wash their hands with soap and water before starting their clinic duties, and whenever hands are visibly soiled. In addition, staff should use an alcohol-based handrub frequently, particularly before and after direct contact with patients.

Hands should be washed or treated with a handrub:
- before and after direct contact with patients;
- after removing gloves;
- before handling an invasive device for patient care, whether or not gloves are used;
- after contact with blood, blood products, body fluids or excretions, mucous membranes, non-intact skin, or wound dressings;
- after using the toilet (normal personal hygiene).

Washing hands with soap and water

The steps, procedures and technique for washing hands are shown in Fig. 8.1, which is also available as a WHO poster. If single-use disposable paper towels are not available, ensure that towels are not used repeatedly or by multiple people.

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*a* If the tap water is contaminated, use either water that has been boiled for 10 minutes and filtered to remove particulate matter, or chlorinated water (water treated with a dilute solution of sodium hypochlorite (bleach) to give a final concentration of 0.001%).
Alcohol-based handrub

The steps, procedures and technique for using an alcohol-based handrub are shown in Fig. 8.2, which is also available as a WHO poster.

How to handrub?

WASH HANDS FOR HAND HYGIENE! WASH HANDS ONLY WHEN VISIBLY SOILED!

Duration of the entire procedure: 20-30 sec.

1. Apply a small amount of the product in a cupped hand and cover all surfaces.
2. Rub hands palm to palm.
3. Right palm over left dorsum with interlaced fingers and vice versa.
4. Palm to palm with fingers interlaced.
5. Backs of fingers to opposing palms with fingers interlaced.
6. Rotational rubbing of left thumb clasped in right palm and vice versa.
7. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa.
8. Rinse hands with water.
9. Dry thoroughly with a single-use towel.
10. Use towel to turn off faucet.
11. …and your hands are safe.

How to handwash?

WASH HANDS ONLY WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB!

Duration of the entire procedure: 48-60 sec.

1. Wet hands with water.
2. Apply enough soap to cover all hand surfaces.
3. Rub hands palm to palm.
4. Right palm over left dorsum with interlaced fingers and vice versa.
5. Palm to palm with fingers interlaced.
6. Backs of fingers to opposing palms with fingers interlaced.
7. Rotational rubbing of left thumb clasped in right palm and vice versa.
8. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa.
9. Rinse hands with water.
10. Dry thoroughly with a single-use towel.
11. Use towel to turn off faucet.
12. …and your hands are safe.

Fig. 8.1 Correct handwashing technique for health care workers

Fig. 8.2 Correct handrubbing technique for health care workers
Keep in mind the following:

- Alcohol-based handrubs do not remove soil or organic matter. If hands are visibly soiled, wash them with soap and water.
- Staff who frequently wash hands or use an alcohol-based handrub should use hand lotions and creams to minimize drying of the skin and reduce the risk of irritant contact dermatitis. Staff with an allergy or adverse reaction to handrubs should use alternative products.

If potentially infectious blood or other body fluid is splashed onto non-intact skin, or if there is a potentially infective percutaneous injury, do not use alcohol-based solutions or strong disinfectants; wash the affected part with water and soap, and seek advice on the need for post-exposure prophylaxis (PEP) (see page XX).

Personal protective equipment provides a physical barrier against microorganisms, helping to prevent them from contaminating hands, eyes, clothing, hair, and shoes, and from being transmitted to patients and staff. Personal protective equipment includes gloves, masks, protective eyewear (face shield or goggles), cap or hair cover, apron, gown, and footwear (boot or shoe covers).

Personal protective equipment should be used by health care workers who provide direct care to patients, support staff, including medical aides, cleaners, and laundry staff, and family members who provide care to patients in situations where they may have contact with blood, blood products and body fluids. Laboratory staff who handle patient specimens should always use personal protective equipment.

Protective equipment that is designed for single use (e.g. disposable gloves, eyewear, masks, caps, gowns, aprons and footwear) should not be reused. It should be disposed of according to the health care facility protocol. Reusable equipment should be decontaminated according to the manufacturer’s instructions or laundered according to the health care facility protocol.

Gloves

The use of gloves does not replace the need for hand hygiene by either hand rubbing or handwashing. Gloves should be worn whenever the person is likely to come into contact with blood or other potentially infectious materials, mucus membranes, or non-intact skin. Gloves should be removed immediately after caring for a patient. Gloves should not be used for the care of more than one patient.

Change or remove gloves in the following situations: during patient care if moving from a contaminated body site to a clean body site within the same patient; after touching a patient; after touching a contaminated site and before touching a clean site or the environment.

Avoid reusing gloves. If gloves are reused, an adequate and validated reprocessing method needs to be developed to ensure glove integrity and microbiological decontamination.

In countries with a high prevalence of hepatitis B, hepatitis C and HIV infection, wearing two pairs of gloves (double gloving) may be appropriate for surgical procedures lasting more than 30 minutes or involving contact with large amounts of blood or body fluids.

### Table 8.1 Gloving requirements for common tasks in a male circumcision service

<table>
<thead>
<tr>
<th>Activity</th>
<th>Gloves needed?</th>
<th>Type of gloves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Checking blood pressure or temperature, giving an injection</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Drawing blood and testing for HIV</td>
<td>Yes</td>
<td>Examination</td>
</tr>
<tr>
<td>Handling and cleaning instruments, handling contaminated waste, cleaning spills of blood or other body fluid</td>
<td>Yes</td>
<td>Utility</td>
</tr>
<tr>
<td>Surgery</td>
<td>Yes</td>
<td>Sterile surgical</td>
</tr>
</tbody>
</table>

Keep in mind the following:

- Wear gloves of the correct size, particularly for surgery.
- Use water-soluble (non-fat-containing) hand lotions and moisturizers, to prevent skin from drying, cracking, and chapping. Avoid oil-based hand lotions and creams, because they can damage latex rubber surgical and examination gloves.
- Keep fingernails short: they should not extend beyond the fingertip. Bacteria and other microorganisms that cause disease can collect under long nails. Long nails also tend to puncture gloves more easily.
- Store gloves in an area where they are protected from extremes of temperature.
- Glove reprocessing is strongly discouraged and should be avoided. There is currently no standardized, validated and affordable procedure for reprocessing gloves.
- Using gloves when they are not necessary represents a waste of resources.
Masks, caps and protective eyewear

Masks protect the mucous membranes of the mouth and nose from possible infections as well as reducing the risks of transmission of infections from the health care worker. They should be worn by anyone undertaking a procedure that is likely to generate splashes of blood, blood products and body fluids. Surgical masks are designed to resist fluids, and are preferable to cotton or gauze masks.

Caps or hair covers and eyewear, such as plastic goggles, safety glasses, face shields, and visors, protect against accidental splashes, spills and leaks of blood and other body fluids.

Protective eyewear should be worn by theatre staff during circumcision surgery. Masks and caps are recommended, but are not essential.

Aprons and the surgeon's gown

Aprons made of rubber or plastic provide a waterproof barrier to keep contaminated fluids off the health worker's clothing and skin. Staff should wear aprons when cleaning instruments, gloves, and other items used for patient care.

When preparing for surgery, aprons are worn under the surgical gown. During circumcision surgery a surgeon's gown is recommended, though some surgeons prefer to use a clean or disposable apron.

Footwear

Footwear (boots or shoe covers) is necessary to protect the feet from injury from sharp or heavy items. Rubber boots or leather shoes provide the best protection, but must be regularly cleaned. Avoid wearing sandals, thongs, or shoes made of soft material.

Immunizations

Certain vaccines, such as hepatitis B, can be useful in protecting health care workers against diseases they may be exposed to during their work. It is recommended that clinic staff should be tested for HIV; this should be done in accordance with national guidelines.

SAFE HANDLING OF HYPODERMIC NEEDLES AND SYRINGES

All clinic staff should be trained in the safe handling of sharp instruments. Hypodermic (hollow-bore) needles are the most common cause of injuries to all types of clinic workers:

- Health care workers are most often stuck by hypodermic needles during patient care.
- Cleaning staff are most often stuck by needles when washing soiled instruments.
- Housekeeping staff are most often stuck by needles when disposing of infectious waste material.

Tips for safe use of hypodermic needles and syringes

- Disposable needles and syringes must be used only once.
- Do not disassemble the needle and syringe after use.
- Do not bend or break needles before disposal.
- Dispose of the needle and syringe together in a puncture-resistant container.

If a needle must be recapped, use the “one-handed” recappping method:

- Place the needle cap on a firm, flat surface.
- Holding the syringe with one hand, use the needle to “scoop up” the cap (see Fig. 8.3).
- With the cap over the needle tip, turn the syringe upright (vertical), so that the needle is pointing towards the ceiling.
- With the forefinger and thumb of your other hand, grasp the cap just above its open end and push it firmly down onto the hub (the place where the needle joins the syringe).

Sharps containers

Sharps containers are a key component in efforts to keep injuries from disposable sharps to a minimum:

- Place sharps containers as close to the point of use as possible and practical (ideally within arm’s reach), but away from busy areas. Avoid placing containers near light switches, overhead fans, or thermostat controls, where people might accidentally put their hand into them.
- Attach containers to walls or other surfaces, if possible, at a convenient height, so that staff can use and replace them easily.
• Mark the container clearly, so that people will not mistakenly use it as a rubbish bin.
• Mark the fill line (at the three-quarters full level). Do not shake the container to settle its contents, to make room for more sharps.
• Never attempt to empty the sharps container.

**Fig. 8.4 Puncture-proof containers for disposal of sharps**

**PROCESSING OF INSTRUMENTS, ENVIRONMENTAL CLEANING AND MANAGEMENT OF SPILLS**

Soiled instruments and other reusable items can transmit infection if they are not properly reprocessed. Effective and safe reprocessing involves cleaning instruments and equipment immediately after use to remove all organic matter and chemicals, disinfection (with heat and water or chemical disinfectants) and sterilization.

**Cleaning**

All used instruments and equipment must be cleaned with detergent and water before being disinfected or sterilized. Otherwise, organic matter may prevent adequate contact with the disinfectant or sterilizing agent. The organic matter may also bind and inactivate chemical disinfectants.

**Instructions for manual cleaning**

• Wear thick household or utility gloves.
• Wear protective eyewear, mask and plastic apron, if available, to prevent contaminated fluids from splashing into your eyes or onto your body.
• Thoroughly wash items to be cleaned with soap and clean water:
  • Use liquid soap, if available. Do not use abrasive cleaners or steel wool, especially on metal (they cause scratches and increase the risk of rusting).
  • Using a soft brush, scrub instruments under the surface of the water to prevent splashing, paying particular attention to any teeth, joints, or screws.
  • Rinse the instruments with clean water.
  • Dry the instruments with a towel or allow them to air-dry.

**Disinfection**

Disinfection can be achieved using heat or chemicals. Disinfection is not a sterilizing process and must not be used as a substitute for sterilization. Thermal disinfection is not appropriate for instruments that will be used in critical sites, i.e. within the body, in sterile tissue, cavities or the bloodstream.

**High-level disinfection**

High-level disinfection destroys all microorganisms except some bacterial endospores. It is usually used for heat-sensitive instruments and equipment that is used in critical sites, but that cannot be sterilized. High-level disinfection is the only acceptable alternative to sterilization for heat-sensitive surgical instruments.

There is no single ideal disinfectant. Different grades of disinfectants are used for different purposes. Glutaral is generally the most appropriate chemical for high-level disinfection. It must be used under very strictly controlled conditions, in a safe working environment.

**Sterilization**

Sterilization is the destruction of all microorganisms, including bacterial endospores. Sterilization can be achieved by either physical or chemical methods. Sterilization is necessary for medical devices that will be used in sterile body sites.

Sterilization can be done using:

• high-pressure steam (autoclave) or dry heat (oven);
• chemicals, such as ethylene oxide or formaldehyde;
• radiation.

Items that have been sterilized need to be properly stored, to ensure that they do not become recontaminated.

• The storage area should be clean, dry, and free of dust and lint.
• The temperature should be kept at approximately 24 °C, and the relative humidity at less than 70%, if possible.
• Sterile packs and containers should be stored 20–25 cm off the floor, 45–50 cm from the ceiling and 15–20 cm from an outside wall.
• Do not use cardboard boxes for storage of sterile items, as they shed dust and debris and may harbour insects.
• Mark the date of sterilization on the package, and use the oldest packages first – “first in, first out”. Dates serve as an indicator of when packs should be used, but do not guarantee the sterility of the packs.
Environmental cleaning

Routine cleaning is important to ensure a clean and dust-free clinic environment. Visible dirt usually contains many microorganisms, and routine cleaning helps to eliminate such dirt. Administrative and office areas with no patient contact should be cleaned in the usual way. Most patient care areas should be cleaned by wet mopping; dry sweeping is not recommended. Hot water (80°C) is a useful and effective environmental cleaner. The use of a neutral detergent solution improves the quality of cleaning.

All horizontal surfaces and all toilet areas should be cleaned daily. The operating table and instrument trolley should be cleaned with detergent and water between cases.

Management of spills

Any area that is visibly contaminated with blood or body fluids should be cleaned immediately with detergent and water. After cleaning, disinfect the area with 0.5% sodium hypochlorite solution.

SAFE DISPOSAL OF INFECTIOUS WASTE MATERIALS

Waste management

The purpose of waste management is to:

- protect people who handle waste items from accidental injury;
- prevent the spread of infection to health care workers and the local community.

Tips for safe handling and disposal of infectious waste

- Place waste in plastic or galvanized metal containers, with tightly fitting colour-coded covers that differentiate infectious from non-infectious waste.
- Place all disposable sharps in designated puncture-resistant containers.
- Place waste containers close to where the waste is generated, in a position that is convenient for users.
- Ensure that equipment used to hold and transport wastes is not used for any other purpose.
- Regularly wash all waste containers with a disinfectant solution (0.5% chlorine solution), then wash with soap, rinse with water, and allow to air-dry.
- When possible, use separate containers for waste that will be treated or that will be disposed of in a particular manner. In this way, workers will not have to handle and separate waste by hand.

When patients are being cared for at home, contaminated waste, such as dressings and other items that may have been in contact with blood or other body fluids, can be buried in a covered pit or burned in a drum incinerator in the yard.

Disposing of sharp items

Disposable sharp items, such as hypodermic needles, require special handling. They are the items most likely to injure the health care workers who handle them. If these items are disposed of in a municipal landfill, they become a danger to people in the community.

Step 1. Do not recap a used hypodermic needle or disassemble the needle and syringe.
Step 2. Place the needle and syringe in a puncture-resistant sharps container. The opening should be large enough to allow items to be dropped through it easily, but small enough to prevent anything being removed from inside.
Step 3. When the container is three-quarters full, dispose of it.

When disposing of the sharps container:

Step 1. Wear heavy-duty utility gloves.
Step 2. Cap, plug, or tape the opening of the container tightly closed. Make sure that no sharp items are sticking out of the container.
Step 3. Dispose of the sharps container by burning, encapsulating, or burying it.
Step 4. Remove utility gloves.
Step 5. Wash hands and dry them with a clean cloth or towel or allow to air-dry.

Burning waste containers

Burning destroys the waste and kills any microorganisms, and is the best method of disposing of contaminated waste. It reduces the bulk volume of waste and also ensures that items cannot be scavenged and reused.

Encapsulating waste containers

Encapsulation is the easiest way to safely dispose of sharps containers. When the container is three-quarters full, pour cement (mortar), plastic foam, clay or other similar material into the container until it is completely full. After the material has hardened, seal the container and dispose of it in a landfill, store, or bury it.

Burying waste

In health care facilities with limited resources, burial of waste (such as excised foreskins) near the facility may be the only practical option for waste disposal. To limit health risks and environmental pollution, some basic rules should be followed:

- Restrict access to the disposal site. Build a fence around the site to keep animals and children away.
• Line the burial site with a material of low permeability (e.g., clay), if available.
• Select a site at least 50 meters away from any water source to prevent contamination of the water table.
• Ensure that the site has proper drainage, is located downhill from any wells, is free of standing water, and is not in an area that floods.

POST-EXPOSURE PROPHYLAXIS

Health care workers may occasionally be accidentally exposed to blood and other body fluids that are potentially infected with HIV, hepatitis virus or other bloodborne pathogens. Occupational exposure may occur through direct contact from splashes into the eyes or mouth, or through injury with a used needle or sharp instrument. Post-exposure prophylaxis (PEP) can help prevent the transmission of pathogens after such a potential exposure.

Managing occupational exposure to hepatitis B, hepatitis C and HIV

The immediate response to exposure to blood or other fluids that are potentially infected with hepatitis B virus (HBV), hepatitis C virus (HCV) or HIV is as follows.

Step 1. Provide immediate first aid care to the exposure site:
• Wash wounds and skin with soap and water. Do not use alcohol or strong disinfectants.
• Let the wound bleed freely.
• Do not put on a dressing.
• Flush mucous membranes with water.

Step 2. Determine the risk associated with the exposure, according to:
• the type of fluid (e.g., blood, visibly bloody fluid, other potentially infectious fluid, or tissue and concentration of virus).
• the type of exposure (e.g. percutaneous injury, exposure of mucous membrane or non-intact skin, bite).

Step 3: Evaluate the source of the potential exposure:
• Assess the risk of infection, using available information.
• The source person may be tested only with his or her informed consent.
• Do not test discarded needles or syringes for virus contamination.

Management of exposure to hepatitis B

A person’s response to exposure to hepatitis B virus depends on his or her immune status, as determined by the history of hepatitis B vaccination and vaccine response, and whether the exposure poses a risk of infection. HBV post-exposure prophylaxis is safe for pregnant and breastfeeding women.

Table 8.2. Recommendations for HBV post-exposure prophylaxis, according to immune status

<table>
<thead>
<tr>
<th>HBV immune status</th>
<th>Post-exposure prophylaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unvaccinated</td>
<td>HBV vaccination and HB immunoglobulin (HB Ig)</td>
</tr>
<tr>
<td>Previously vaccinated, known responder (anti-hepatitis B surface antigen positive)</td>
<td>None</td>
</tr>
<tr>
<td>Previously vaccinated, known non-responder</td>
<td>HBV vaccination and HB Ig</td>
</tr>
<tr>
<td>Antibody response unknown</td>
<td>Test. If antibody response is poor, give HB vaccination and HB Ig</td>
</tr>
</tbody>
</table>

People who receive hepatitis B vaccine should be tested for anti-hepatitis B surface antigen 1–2 months after the last dose. Note that the anti-hepatitis B surface antigen response to vaccine cannot be ascertained if the person was given HB Ig in the previous 3–4 months.

Management of exposure to hepatitis C

• There is no post-exposure prophylaxis regimen for HCV.
• Evaluate the person who has been exposed to hepatitis C virus by performing a baseline test for anti-HCV antibodies and alanine aminotransferase (ALAT).
• Perform follow-up testing for anti-HCV antibodies and ALAT 4–6 months after exposure.
• If an earlier diagnosis of possible HCV infection is desired, an HCV RNA test can be performed 4–6 weeks after exposure.
• Repeatedly reactive anti-HCV enzyme immunoassays (EIAs) should be confirmed with supplemental tests.
• Any person who is found to have HCV antibodies should be referred to a specialist for care.

Post-exposure prophylaxis for HIV

Post-exposure prophylaxis for HIV is a set of actions aimed at preventing infection in the exposed person. It includes first aid care, counselling and risk assessment, HIV testing following informed consent, and – depending on the risk assessment – the provision of a short course (28 days) of antiretroviral drugs, with follow-up and support.
Male circumcision under local anaesthesia

Prevention of Infection Chapter 8-17

Prevention of Infection Chapter 8-18

Step 1. First aid

- If a splash or a spill occurs on the skin, wash the area immediately with soap and water. Do not use caustic agents, alcohol or bleach because they will irritate the skin and may increase the risk of infection.
- Do not apply a dressing.
- If a splash or a spill occurs in the eyes, the nose, the mouth, or on any mucous membrane, rinse the area with clean water for at least 10 minutes.
- If an injury has been caused by a potentially contaminated sharp, wash the area with soapy water, and allow the wound to bleed freely for a while. Then give normal first aid.

Step 2. Report and risk evaluation

After the incident, the exposed person should be referred to a trained service provider, who can give counselling, evaluate the risk of HIV transmission having occurred, and decide on the need to prescribe antiretroviral drugs (ARVs) to prevent HIV infection.

The risk should be evaluated by determining the type of fluid, the severity and type of exposure (percutaneous or needle stick, mucous membranes, intact or non-intact skin) and source of infection.

If the source person is identified, it is important to obtain information on his or her serostatus and, if positive, an evaluation of the clinical status and treatment history.

The recommendation for HIV post-exposure prophylaxis is based on an evaluation of the risk of infection (see Table 8.3).

Table 8.3. Recommendations for HIV post-exposure prophylaxis

<table>
<thead>
<tr>
<th>Type of exposure</th>
<th>Source known HIV-positive</th>
<th>Source of unknown HIV status</th>
<th>Source known HIV-negative</th>
</tr>
</thead>
</table>
| Percutaneous: severe
| Two-drug regimen
| Consider HIV prevalence in population or subgroup PEP not recommended, unless there is risk that source is in window period |
| Percutaneous: not severe
| Two-drug regimen
| PEP not recommended |
| Splash:
| Consider HIV prevalence in population or subgroup PEP not recommended, unless there is risk that source is in window period |
| Splash: not severe
| PEP not recommended; two-drug regimen optional PEP not recommended |

* * *

Step 3. Testing and counselling

- If testing is available, the exposed person should be offered the chance to be tested for HIV and receive appropriate counselling. The person should always have the choice to refuse testing.
- Antiretroviral drugs for PEP should be started as soon as possible, and in any case within 72 hours after exposure.
- The drugs should be taken continuously for 28 days.
- Do not delay starting ARVs for PEP while waiting for HIV test results. The exposed person could start taking ARVs for PEP immediately, and stop the treatment if the test results reveal that he or she is already HIV-positive.
- Each circumcision clinic should either have the necessary drugs in stock or know where they can be obtained, so that treatment can be started within 72 hours.
- Whenever possible, the source patient should also be tested, with his or her informed consent.
- If the test results show that the source person is negative, PEP can be stopped.
- Counselling should include provision of information on the importance of adhering to treatment, and information on HIV prevention in general and in the workplace. The person should be advised to use condoms, and not to donate blood or organs for up to 6 months after exposure.
- Women of childbearing age should be advised to use contraception, and alternatives to breastfeeding should be discussed with women currently feeding their infants. There is a high risk of transmitting HIV to the infant if the mother becomes infected during breastfeeding.
**Step 4. Antiretroviral drugs for post-exposure prophylaxis**

If national guidelines on post-exposure prophylaxis exist, these should be followed. If not, WHO recommendations may be applied. WHO recommends a two-drug PEP regimen, unless there is suspicion or evidence of drug resistance. The standard PEP regimen consists of two nucleotide reverse transcriptase inhibitors (NRTIs). The possible regimens are given in Table 8.4.

Table 8.4 Recommended two-drug PEP regimens

<table>
<thead>
<tr>
<th>Preferred regimens</th>
<th>Alternative regimens</th>
</tr>
</thead>
<tbody>
<tr>
<td>zidovudine (AZT) + lamivudine (3TC)*</td>
<td>stavudine (D4T) + lamivudine (3TC)</td>
</tr>
<tr>
<td>tenofovir (TDF) + lamivudine (3TC)</td>
<td>tenofovir (TDF) + emtricitabine (FTC)*</td>
</tr>
</tbody>
</table>

*These combinations are currently commercially available as fixed-dose combinations.

Note that non-NRTIs are not recommended for PEP. In regions where the prevalence of drug resistance is above 15%, or when there is suspicion that the virus could be resistant to one or more of the drugs included in the standard PEP regimen, a third drug – a protease inhibitor – should be added to the two chosen NRTIs. In this situation, it is recommended to consult an HIV expert.

Table 8.5 Recommended three-drug PEP regimens

<table>
<thead>
<tr>
<th>Preferred regimens</th>
<th>Alternative regimens</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZDV + 3TC + LPV/r</td>
<td>ZDV + 3TC + SQV/r or ATV/r or FPV/r</td>
</tr>
<tr>
<td>TDF + 3TC + SQV/r or ATV/r or FPV/r</td>
<td></td>
</tr>
<tr>
<td>d4T + 3TC + SQV/r or ATV/r or FPV/r</td>
<td></td>
</tr>
</tbody>
</table>

- The exposed person should seek medical follow-up.
- Women of childbearing age should not be prescribed medications such as the combination didanosine + stavudine. They should be offered a pregnancy test before starting the PEP regimen.
- Lactating women should be aware that ARVs are excreted in breast milk, and that the virus itself can be transmitted through breastfeeding.
- When and where feasible, alternative options to breastfeeding should be discussed with the mother.

**Step 5. Follow-up and testing**

Follow-up visits should aim to support the person’s adherence to PEP, prevent or treat side-effects of the medicines, and detect seroconversion, if it occurs. The following steps are recommended:

- Perform HIV-antibody testing at baseline, 6–12 weeks and six months after exposure.
- Perform HIV-antibody testing if the person develops any illness compatible with an acute retroviral syndrome.
- Advise exposed persons to take precautions to prevent secondary transmission during the follow-up period. This includes:
  - avoiding pregnancy and seeking safe alternatives to breastfeeding;
  - avoiding donating blood, tissue or sperm;
  - using condoms during sexual intercourse, until the test at six months confirms that the exposed person remains seronegative.
- Evaluate exposed persons taking PEP within 72 hours after exposure and monitor for drug adherence and possible drug-related side-effects and toxicity for at least two weeks.
- If the person develops HIV antibodies, he or she should be referred for treatment, care and support.

The incident report and the evaluation of the risk of exposure should also lead to quality control and evaluation of working safety conditions. Appropriate correctional measures should be taken to prevent exposure to HIV and other bloodborne pathogens.

**REFERENCES**

2. World Alliance for Patient Safety (http://www.who.int/patientsafety/en/).
Chapter 9

MANAGING A CIRCUMCISION SERVICE

Summary

- The manager of the clinic circumcision service has a number of roles. These include ensuring quality of services, making sure that good quality records are kept, monitoring and evaluating the programme, and carrying out supportive supervision.
- To meet these responsibilities, the clinic manager must set the desired levels of performance for the services provided, assess current levels of performance, work with other clinic staff to analyse the causes of inadequate performance and find solutions for identified problems.

RECORD-KEEPING, MONITORING AND EVALUATION

The clinic manager should ensure that the health care providers maintain adequate records on all clients. Records should include information on the identity of the client, the type of service provided, and any special circumstances associated with it. Sample record forms to assist this task are given in Appendix 9.1 (Sample Stock Card), 9.2 (Sample Stock-Taking Card for Consumables), 9.3 (Sample Male Circumcision Adverse Event Form) 9.4 (Sample Male Circumcision Register).

Indicators

Health care facility managers need detailed information to allow them to make decisions about how best to use scarce resources. They might want to know the answers to questions such as:

- Are we reaching our target audience?
- Can we provide the necessary services (for example, do we have the appropriate equipment, the staff, the drugs)?
- Are our services of high quality (for example, do they meet national and international standards)?
- Do our services meet the needs of our clients?
- Are we referring clients who need it?

For each question, managers should develop one or more indicators to monitor the services or the impact of changes. For example, to assess the quality of the circumcision service provided, an appropriate indicator might be the percentage of male circumcision clients who are re-admitted or referred for management of an adverse event.

Answering these questions depends on careful record-keeping by staff who understand the purpose of the records.

What is monitoring?

Monitoring is the routine assessment (e.g. daily, monthly, quarterly) of information or indicators related to ongoing activities.

Monitoring helps to:

- track progress towards the programme targets or performance standards; and
- identify aspects of the programme that are working according to plan and those that are in need of adjustment.

What is evaluation?

Evaluation is the measurement of how much things have changed as a result of the interventions implemented.

There are, of course, many factors that can cause things to change. A formal evaluation tries to demonstrate how much a specific intervention contributed to an observed change.

Why evaluate male circumcision programmes?

The purpose of evaluating a male circumcision programme is to:

- assess progress made at particular points in time;
- assess progress towards objectives;
- provide feedback on whether targets are being met;
- identify reasons for successes and failures; and
- provide a basis for future planning.

What is a monitoring system?

Collecting information to track indicators requires the collaboration of dedicated and knowledgeable staff. Obtaining and reporting the required information represent an extra burden of work, and may even be impossible unless an effective monitoring system is in place. This implies:

- All those involved know what information is needed and by whom.
- The tools needed to collect the information are available.
- All those involved know how and when to report the information.
- One person is responsible for making sure the system is working, i.e. that indicators are up to date, that records are being properly kept, and that data are reported to appropriate partners.

The person responsible for the monitoring system must keep clinic staff informed about what needs to be recorded and reported. He or she must also adjust monitoring tools to reflect the information required.
Monitoring performance in male circumcision programmes

Fig. 9.2 is a graphic representation of how monitoring through routine data collection can help identify how programme performance (represented by the thick arrow) relates to programme objectives, using as an example the cumulative number of circumcisions performed per month.

Fig. 9.2. Monitoring and evaluation programme performance in relation to programme objective

Evaluation

Evaluation can be done by:

- reviewing available records and reports (client record forms, clinic register, theatre register, adverse events forms, drug inventory forms, referral forms, etc.);
- conducting supervisory assessments;
- having staff conduct self-assessments;
- conducting peer assessments;
- obtaining feedback from clients (e.g. through exit interviews);
- surveying community perceptions of the service;
- comparing the clinic’s services with those of other facilities.

What are “good data”?

A monitoring system will provide useful information only if the data recorded are “good”. Clinic managers should ensure that staff are aware of the following:

- Understanding the data. Staff responsible for keeping records should know exactly what information is needed, for example, adverse events associated with male circumcision.
- Recording the data every time. Every time a staff member performs a procedure, sees a client, prescribes medication, receives a test result, or makes a referral, it should be recorded on the appropriate form.
- Recording all the data. All the information requested on the monitoring forms should be completed. This might require noting when a particular treatment was not provided.
- Recording the data in the same way every time. The same definitions, rules, and tests should always be used for reporting the same piece of information. In the long term, this may not be possible, as tests and definitions change, treatment evolves and new technologies are developed. When it is not possible to record data in the same way, a note should be made describing the change.

It is not the role of clinicians (surgeons, medical, clinical and nursing officers) to develop a functional monitoring system for the facility. That is the role of the health planner or clinic manager. However, the clinicians need to know who is responsible for the monitoring system, to record data accurately and reliably, and to know how and when to report information related to the service or to patients.

Clinicians can also help those responsible for the system by providing feedback about how the system is working, how information is shared with other clinicians, and how easy the various forms are for clinicians to complete accurately and reliably. In this way, you can help refine the monitoring system to be as accurate and reliable as possible.

Using monitoring information for intervention-related decision-making

In the context of record-keeping and monitoring, information is good only if it can be used. Data that cannot be used should not be collected.

SUPERVISION

Traditional approaches to supervision emphasize inspecting facilities and checking individual performance. They focus on finding fault or errors, and sanctioning those responsible, or thought to be responsible. This type of supervision often causes negative feelings and rarely results in an improved service.

In contrast, supervision for performance and quality improvement focuses on:

- the goal of providing high-quality health services;
- a style of encouraging, inclusive and supportive interaction; and
- a process of continuous performance and quality improvement.
The goal

The goal of supervision is to promote and maintain the delivery of high-quality health services. In a traditional system of supervision, this goal is often lost, or at least is not apparent to those being supervised. By clearly stating that the goal of supervision is the delivery of high-quality health care services, the supervisor can transform the sometimes negative impression of supervision into a positive one.

The style

Supervision for performance and quality improvement should be done in a style that involves as many stakeholders as possible, achieves results through teamwork, and provides constructive and useful feedback. The underlying assumption is that people work better when they actively participate and are listened to, treated well, encouraged to do a good job, and recognized for a job well done.

The process

Supervisors can use the step-by-step process of performance and quality improvement presented here to help achieve a high-quality service. The process is illustrated in Fig. 9.3.

The process involves a cycle of logical steps, which are repeated until the desired performance is achieved. The cycle can be used to solve any type of performance problem, for instance involving infection prevention practices, management of stocks, or counselling.

Figure 9.3 The performance and quality improvement process

- Define desired performance. In order for people to perform well, they must know what they are expected to do. Performance standards need to be set. Staff must know not only what their duties are, but also how they are expected to perform them. The desired performance should be realistic and based on common goals, the expectations of the community and the resources available. Examples of desired performance standards related to male circumcision are:
  - All clients over the age of 18 years must complete a written informed consent form before undergoing male circumcision.
  - Instruments used during a male circumcision procedure must be decontaminated in 0.5% chlorine solution for 10 minutes before being cleaned and sterilized.
  - All clients undergoing male circumcision (and/or their parents) should be counselled about HIV.

- Assess performance. The team should continually assess its own performance in relation to how it is expected to perform. This assessment can be done on a continuous basis informally, or more formally at periodic intervals, by monitoring specific activities and steps, conducting self-assessments or obtaining feedback from clients. Using the above desired standards as examples, performance assessment may show the following:
  - 76% of clients over the age of 18 years completed a written informed consent form before undergoing male circumcision (a gap of 24%).

1 Adapted from: Performance improvement framework, developed through a collaborative effort by members of the Performance Improvement Consultative Group (PICG). The PICG includes representatives of USAID and USAID-funded cooperating agencies.
• Instruments used during male circumcision procedures were decontaminated in 0.5% chlorine solution for 10 minutes before being cleaned and sterilized 50% of the time (a gap of 50%).
• 36% of clients undergoing male circumcision (and/or their parents) were counselled about HIV (a gap of 74%).

Find the causes of performance gaps. A performance gap means that what is occurring does not meet the performance standards that have been set. If this is found to be the case, the manager needs to explore with staff why the gap is occurring. Sometimes the reasons for poor performance are not immediately obvious, and it may take some time to find the real cause. For example, if 74% of clients undergoing male circumcision are not being counselled about HIV infection, analysis of the gap may reveal the following possible causes:
• shortage of staff (especially counsellors and nurses);
• a high client load;
• no space in the clinic for counselling clients;
• shortage of test kits for HIV;
• staff not aware of facility policy; or
• no one in the facility has been trained in counselling and testing.

Select and implement interventions to improve performance. Once the causes of the performance gap have been determined, the manager and staff will need to identify, put in order of priority, plan and implement interventions to improve performance. These interventions can be directed at improving the knowledge and skills of staff, or the environment and support systems. Many different types of interventions can improve worker performance. To make the best use of resources, it is important to select the most appropriate ones.

Monitor and evaluate performance. Once an intervention has been implemented, it is important to determine whether it has had the desired result. In other words, did the intervention lead to improved performance? Did the team come closer to meeting established standards? If not, the team will need to look again at what is hindering performance, to make sure that the interventions were targeted at the real cause of the performance gap. If performance has improved, it is important to continue monitoring to make sure that the level of performance is maintained.
### Appendix 9.1

**SAMPLE STOCK CARD**

<table>
<thead>
<tr>
<th>Product: e.g. 1% plain lidocaine</th>
<th>Expiry dates:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost per item:</td>
<td></td>
</tr>
<tr>
<td>Selling price (if applicable):</td>
<td></td>
</tr>
<tr>
<td>Re-order level:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>In</th>
<th>Out</th>
<th>Balance</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td></td>
</tr>
</tbody>
</table>

### Appendix 9.2

**SAMPLE STOCK-TAKING CARD FOR CONSUMABLES**

<table>
<thead>
<tr>
<th>Date of stock taking:</th>
<th>Initials of stock taker: _______</th>
<th>Quantity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Stock taking</td>
<td>Stock card</td>
</tr>
<tr>
<td>1% plain lidocaine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paracetamol tins</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ampicillin tins</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sterile gloves</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Examination gloves</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(packets)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utility gloves</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spirit bottles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Betadine bottles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gauze rolls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cotton-wool rolls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.0 chromic catgut</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adhesive plaster rolls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal saline bottles/bags</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27 gauge needles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 gauge needles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 ml syringes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 ml syringes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 ml syringes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety pins</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taper 4/8 circle needles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JIK bottles</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Details</th>
<th>Quantity</th>
<th>Stock taking</th>
<th>Stock card</th>
<th>Difference</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1% plain lidocaine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paracetamol tins</td>
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<tr>
<td>Sterile gloves</td>
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<tr>
<td>Examination gloves (packets)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Utility gloves</td>
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<tr>
<td>Spirit bottles</td>
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<tr>
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<tr>
<td>Gauze rolls</td>
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</tr>
<tr>
<td>Cotton-wool rolls</td>
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<td></td>
</tr>
<tr>
<td>3.0 chromic catgut</td>
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<td></td>
</tr>
<tr>
<td>Adhesive plaster rolls</td>
<td></td>
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<td></td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>27 gauge needles</td>
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<td>30 gauge needles</td>
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<tr>
<td>10 ml syringes</td>
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<tr>
<td>5 ml syringes</td>
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<tr>
<td>2 ml syringes</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>Taper 4/8 circle needles</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>JIK bottles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## SAMPLE MALE CIRCUMCISION ADVERSE EVENT FORM

1. **Client's name:** ____________________________________________________

2. **Date of visit:**
   - **Day:**
   - **Month:**
   - **Year:**

3. **Patient's ID Number:** M C -

### Instructions:
Check (√) appropriate box for any adverse events

<table>
<thead>
<tr>
<th>Adverse event</th>
<th>Description</th>
<th>Severity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. During surgery</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain</td>
<td>3 or 4 on pain scale</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>5 or 6 on pain scale</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>7 on pain scale</td>
<td>Severe</td>
</tr>
<tr>
<td>Excessive bleeding</td>
<td>More bleeding than usual, but easily controlled</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Bleeding that requires pressure dressing to control</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Blood transfusion or transfer to another facility required</td>
<td>Severe</td>
</tr>
<tr>
<td>Anaesthetic-related event</td>
<td>Palpitations, vaso-vagal reaction or emesis</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Reaction to anaesthetic requiring medical treatment in clinic, but not transfer to another facility</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Anaphylaxis or other reaction requiring transfer to another facility</td>
<td>Severe</td>
</tr>
<tr>
<td>Excessive skin removed</td>
<td>Skin is tight, but additional operative work not necessary</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Requires re-operation or transfer to another facility to correct the problem</td>
<td>Severe</td>
</tr>
<tr>
<td>Damage to the penis</td>
<td>Mild bruising or abrasion, not requiring treatment</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Bruising or abrasion of the glans or shaft of the penis requiring pressure dressing or additional surgery to control</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Part or all of the glans or shaft of the penis severed</td>
<td>Severe</td>
</tr>
</tbody>
</table>

### Adverse event after surgery

<table>
<thead>
<tr>
<th>Adverse event</th>
<th>Description</th>
<th>Severity</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. &lt; 1 month after surgery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain</td>
<td>3 or 4 on pain scale</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>5 or 6 on pain scale</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>7 on pain scale</td>
<td>Severe</td>
</tr>
<tr>
<td>Excessive bleeding</td>
<td>Dressing soaked through with blood at a routine follow-up visit</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Bleeding that requires a special return to the clinic for medical attention</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Bleeding that requires surgical re-exploration</td>
<td>Severe</td>
</tr>
<tr>
<td>Excessive skin removed</td>
<td>Client concerned, but there is no discernable abnormality</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Skin is tight, but additional operative work not necessary</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Requires re-operation or transfer to another facility</td>
<td>Severe</td>
</tr>
<tr>
<td>Insufficient skin removed</td>
<td>Foreskin partially covers the glans only when extended</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Foreskin still partially covers the glans and re-operation is required</td>
<td>Moderate</td>
</tr>
<tr>
<td>Swelling/haematoma</td>
<td>More swelling than usual, but no significant discomfort</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Significant tenderness and discomfort, but surgical re-exploration not required</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Surgical re-exploration required</td>
<td>Severe</td>
</tr>
<tr>
<td>Damage to the penis</td>
<td>Mild bruising or abrasion, not requiring treatment</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Bruising or abrasion of the glans or shaft of the penis requiring pressure dressing or additional surgery</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Part or all of the glans or shaft of the penis severed</td>
<td>Severe</td>
</tr>
<tr>
<td>Infection</td>
<td>Erythema more than 1 cm beyond incision line</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Purulent discharge from the wound</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Cellulitis or wound necrosis</td>
<td>Severe</td>
</tr>
<tr>
<td>Delayed wound healing</td>
<td>Healing takes longer than usual, but no extra treatment necessary</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Additional non-operative treatment required</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Requires re-operation</td>
<td>Severe</td>
</tr>
<tr>
<td>Appearance</td>
<td>Client concerned, but no discernable abnormality</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Significant wound disruption or scarring, but does not require re-operation</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Requires re-operation</td>
<td>Severe</td>
</tr>
<tr>
<td>Problems with urinating</td>
<td>Transient complaint that resolves without treatment</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Requires a special return to the clinic, but no additional treatment required</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Requires referral to another facility for management</td>
<td>Severe</td>
</tr>
</tbody>
</table>

### Treatment provided:
- Adverse event completely resolved
- Adverse event partially resolved
- Adverse event unchanged

### Treatment outcome:
- Adverse event completely resolved
- Adverse event partially resolved
- Adverse event unchanged

### Was patient referred? Yes No If yes, to where __________________________
<table>
<thead>
<tr>
<th>C. ≥ 1 month after surgery</th>
<th>Erythema more than 1 cm beyond incision line</th>
<th>Mild</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Purulent discharge from the wound</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Cellulitis or wound necrosis</td>
<td>Severe</td>
</tr>
<tr>
<td>Delayed wound healing</td>
<td>Healing takes longer than usual, but no extra treatment necessary</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Additional non-operative treatment required</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Requires re-operation</td>
<td>Severe</td>
</tr>
<tr>
<td>Appearance</td>
<td>Client concerned, but no discernible abnormality</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Significant scarring or other cosmetic problem, but does not require re-operation</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Requires re-operation</td>
<td>Severe</td>
</tr>
<tr>
<td>Excessive skin removed</td>
<td>Client concerned, but there is no discernible abnormality</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Skin is tight, but additional operative work not necessary</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Requires re-operation or transfer to another facility</td>
<td>Severe</td>
</tr>
<tr>
<td>Insufficient skin removed</td>
<td>Foreskin partially covers the glans only when extended</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Foreskin still partially covers the glans and re-operation is required to correct</td>
<td>Moderate</td>
</tr>
<tr>
<td>Torsion of penis</td>
<td>Torsion is observable, but does not cause pain or discomfort</td>
<td>Mild</td>
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<tr>
<td></td>
<td>Causes mild pain or discomfort, but additional operative work not necessary</td>
<td>Moderate</td>
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<tr>
<td></td>
<td>Requires re-operation or transfer to another facility</td>
<td>Severe</td>
</tr>
<tr>
<td>Erectile dysfunction</td>
<td>Client reports occasional inability to have an erection</td>
<td>Mild</td>
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<tr>
<td></td>
<td>Client reports frequent inability to have an erection</td>
<td>Moderate</td>
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<tr>
<td></td>
<td>Client reports complete or near complete inability to have an erection</td>
<td>Severe</td>
</tr>
<tr>
<td>Psychobehavioural problems</td>
<td>Client reports mild dissatisfaction with the circumcision, but no significant psychobehavioural consequences</td>
<td>Mild</td>
</tr>
<tr>
<td></td>
<td>Client reports significant dissatisfaction with the circumcision, but no significant psychobehavioural consequences</td>
<td>Moderate</td>
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<tr>
<td></td>
<td>Significant depression or other psychological problems attributed by the client to the circumcision</td>
<td>Severe</td>
</tr>
</tbody>
</table>

Treatment provided:

Was patient referred? Yes [ ] No [ ] If yes, to where _______________ and when _______________

Treatment outcome:  Adverse event completely resolved [ ]  Adverse event partially resolved [ ]
# Appendix 9.4

## SAMPLE MALE CIRCUMCISION REGISTER

<table>
<thead>
<tr>
<th>Date (dd/mm/yy)</th>
<th>Patient number (from card)</th>
<th>ID</th>
<th>Surname</th>
<th>Given name(s)</th>
<th>Age</th>
<th>Procedure</th>
<th>Type of anaesthesia</th>
<th>Start time</th>
<th>End time</th>
<th>Surgeon’s name</th>
<th>Nurse’s name</th>
<th>Comments or notes</th>
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</thead>
<tbody>
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</tbody>
</table>
For more information, please contact:
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Switzerland
Fax: +41 22 791 4171
E-mail: reproductivehealth@who.int
www.who.int/reproductive-health