Organization and Management

Extracted from WHO manual Surgical Care at the District Hospital (SCDH) and WHO Integrated Management for Emergency & Essential Surgical Care (IMEESC) toolkit

For further details and anesthetic resources please refer to full text at: http://www.who.int/surgery/publications/imeesc/en/index.html
Ethics – Patient Consent

Before performing a procedure, it is important to receive consent from the patient:

- ask permission to make an examination
- explain what you intend to do before doing it
- ask the patient if he/she has questions & answer them
- check that the patient has understood
- obtain permission to proceed; and
- be mindful of the comfort and privacy of others

With invasive and surgical procedures, it is particularly important to explain fully:

- what are you proposing?
- what are your reasons for wishing to undertake the procedure?
- what you hope to find or accomplish?

Ensure that you:

- use language that can be understood
- draw pictures and use an interpreter, if necessary
- allow the patient and family members to ask questions
- think about what you have said

It may be necessary to consult with a family member or community elder who may not be present; allow for this if the patient’s condition permits.

If a person is too ill to give consent (for example, if unconscious) and their condition will not allow further delay, you should proceed, without formal consent, acting in the best interest of the patient.

Record your reasoning and plan.

Informed consent means that:

- patient and the patient’s family understand what is to take place,
- including the potential risks and complications of both proceeding and not proceeding, and
- have given permission for a course of action.

Some hospitals require patients to sign a document indicating that the surgical procedure and potential complications have been explained and that permission to proceed has been granted.

This paper is then included in the patient’s record. If this is not a formal requirement in your hospital, document the conversation in which consent was given and include the names of people present at the discussion.

- It should be a choice made free from coercion.

- Our duty as professionals to provide service and care can come into conflict with our personal opinions. It is important to be aware of these feelings when they occur and to understand where they are coming from.

- If we are asked to care for someone who is alleged to have committed a crime, it is not our responsibility to administer justice.
**Record Keeping**

- Admission note/preoperative note
- Operating room records usually includes:
  - Patient identity
  - Procedure performed
  - Persons involved
  - Complications
- Delivery book
- The operative note
- Postoperative notes can be organized in the “SOAP” format:
  - Subjective: how the patient feels
  - Objective: findings on physical examination, vital signs and laboratory results
  - Assessment: what the practitioner thinks
  - Plan: management plan, this may also include directives which can be written in a specific location as “orders”.
- Discharge note: record:
  - Admitting and definitive diagnoses
  - Summary of patient's course in hospital
  - Instructions about further management as an outpatient, including any medication and the length of administration and planned follow-up

**Operating Room (OR)**

The operating theatre is a room specifically for use by the anaesthesia and surgical teams and must not be used for other purposes.

O.R. requires:
- Good lighting and ventilation
- Dedicated equipment for procedures
- Equipment to monitor patients, as required for the procedure
- Drugs and other consumables for routine and emergency use

Keep all doors to the O.R. closed, except as needed for the passage of equipment, personnel and the patient;
Ensure that procedures are established for the correct use of the O.R. and all staff is trained to follow them:

- Keep to a minimum the number of people allowed to enter the O.R. especially after an operation has started
- Keep O.R. uncluttered and easy to clean
- Store some sutures and extra equipment in the O.R. to decrease the need for people to enter and leave the O.R. during a case
- Between cases, clean and disinfect the table and instrument surfaces
- At the end of each day, clean the O.R.: start at the top and continue to the floor, including all furniture, overhead equipment and lights, use a liquid disinfectant at a dilution recommended by the manufacturer
- Sterilize all surgical instruments and supplies after use and store them protected and ready for the next use.

**Sponge and Instrument Counts**

It is essential to keep track of the materials being used in the O.R. in order to avoid inadvertent disposal or the potentially disastrous loss of sponges and instruments in the wound.

It is standard practice to count supplies (instruments, needles and sponges)

- Before beginning a case
- Before final closure
- On completing the procedure

Aim is to ensure that materials are not left behind or lost. Pay special attention to small items and sponges.

Create and make copies of a standard list of equipment for use as a checklist to check equipment as it is set up for the case and then as counts are completed during the case.

Include space for suture material and other consumables added during the case.

When trays are created with the instruments for a specific case, such as a Caesarean section, also make a checklist of the instruments included in that tray for future reference.

*Leave the O.R. ready for use in case of an emergency*
Failure of Normal Methods of Sterilization of Equipment

Failure of an autoclave or a power supply may suddenly interrupt normal sterilization procedures.

If an extra set of sterile equipment and drapes are not available, the following “antiseptic technique” will allow some surgery to continue.

1. Immerse towels and drapes for 1 hour in a reliable antiseptic such as aqueous chlorhexidine, wring them out and lay them moist on the skin of the patient.

2. Treat gauze packs and swabs similarly, but rinse them in diluted (1:1000) chlorhexidine solution before using them in the wound. From time to time during the operation, rinse gauze in use in this solution.

3. Immerse instruments, needles, and natural suture materials in strong antiseptic for 1 hour and rinse them in weak antiseptic just before use.

Disinfection

Disinfectant solutions are used to inactivate any infectious agents that may be present in blood or other body fluids.

- They must always be available for cleaning working surfaces, equipment that cannot be autoclaved, nondisposable items, and for dealing with any spillages involving pathological specimens or other known infectious material.
- Needles and instruments should routinely be soaked in a chemical disinfectant for 30 minutes before cleaning.
- Disinfection decreases the viral and bacterial burden of an instrument, but does not clean debris from the instrument or confer sterility.
- Purpose of disinfection is to reduce the risk to those who have to handle the instruments during further cleaning.
- Reusable needles must always be used with great care. After use, they should be placed in a special container of disinfectant before being cleaned and sterilized.
- Thick gloves should be worn when needles and sharp instruments are being cleaned.
- There are many disinfectant solutions, with varying degrees of effectiveness. Most widely available is sodium hypochlorite solution (commonly known as bleach or chloros), which is a particularly effective antiviral disinfectant solution.
- To ensure effective disinfection, follow the manufacturer’s instructions or any other specific guidelines that have been given and dilute the concentrated solution to the correct working strength.
- It is important to use all disinfectant solutions within their expiry date as some solutions, such as hypochlorite, lose their activity very quickly.
- All disinfectants have a “contact time”, which means that they must be left in contact with an infectious agent for a certain period of time to ensure that it is completely inactivated. However, some disinfectants are themselves inactivated by the presence of organic material, so higher concentrations of disinfectant and longer contact times must be used in certain situations, such as a large spill of infected blood.
Linen soiled with blood should be handled with gloves, and should be collected and transported in leak-proof bags.

Wash the linen first in cool water, then disinfect with a dilute chlorine solution. Then wash it with detergent for 25 minutes at a temperature of at least 71°C.

**Sterilization**
The methods of sterilization in common use are:

1. **Autoclaving**
   - Autoclaving should be the main form of sterilization at the district hospital.
   - Before sterilizing medical items, they must first be disinfected and vigorously cleaned to remove all organic material. Proper disinfection decreases the risk for the person who will be cleaning the instruments.
   - Sterilization of all surgical instruments and supplies is crucial in preventing HIV transmission. All viruses, including HIV, are inactivated by steam sterilization (autoclaving) for 20 minutes at 121°C–132°C or for 30 minutes if the instruments are in wrapped packs.
   - Appropriate indicators must be used each time to show that sterilization has been accomplished. At the end of the procedure, the outsides of the packs of instruments should not have wet spots, which may indicate that sterilization has not occurred.

2. **Dry heat**
   - If items cannot be autoclaved, they can be sterilized by dry heat for 1–2 hours at 170°C. Instruments must be clean and free of grease or oil.
   - Sterilizing by hot air is a poor alternative to autoclaving since it is suitable only for metal instruments and a few natural suture materials.
   - Boiling instruments is now regarded as an unreliable means of sterilization and is not recommended as a routine in hospital practice.

3. **Antiseptics**
   - Sharp instruments, other delicate equipment and certain catheters and tubes can be sterilized by exposure to formaldehyde, glutaral (glutaraldehyde) or chlorhexidine.
   - If you are using formaldehyde, carefully clean the equipment and then expose it to vapour from paraformaldehyde tablets in a closed container for 48 hours.
   - Glutaral is a disinfectant that is extremely effective against bacteria, fungi and a wide range of viruses. Always follow the manufacturer’s instructions for use.
Waste Disposal in Clinical Procedures

It is essential for the hospital to have protocols to deal with biological waste and contaminated materials. All staff must be familiar with them and follow them.

- All biological waste must be carefully stored and disposed of safely.
- Contaminated materials such as blood bags, dirty dressings and disposable needles are potentially hazardous and must be treated accordingly.
- If biological waste and contaminated materials are not disposed of properly, staff and members of the community could be exposed to infectious material and become infected.
- Disposal of bio hazardous materials is time consuming and expensive, so it is important to separate non-contaminated material such as waste paper, packaging and non-sterile but not biologically contaminated materials. (Only 15% to 20% of medical wastes are considered infectious).

Make separate disposal containers available where waste is created so that staff can sort the waste as it is being discarded. A three colour coding system with black for non-infectious waste, red or yellow for infectious and yellow for sharps is recommended.

Organize things in a way to discourage the need for people to be in contact with contaminated waste.

- All infected waste should then be treated by steam sterilization or high temperature incineration equipped with emission control devices. Whenever feasible, plastic material such as syringes or blood bags should not be incinerated.
- Burying waste is the only option in some areas where not controlled landfill exists. If this is the case, you should do as much as possible to protect the burying site to prevent access and to avoid environmental pollution, especially for underground water sources.
- Prior to burying, for safety infected waste can be disinfected by soaking in a 0.5% hypochlorite solution for at least 30 minutes.

Do not mix waste chemicals, unless you are certain that a chemical reaction will not take place. This is essential to prevent any unwanted or dangerous reactions between the chemicals, which could endanger laboratory staff.

Always follow local guidelines on the disposal of waste chemicals to avoid any chemical contamination of the surrounding land or water supply.

Provide a safe system for getting rid of disposable items such as scalpel blades or needles. The risk of injury with sharp objects increases with the distance they are carried and the amount they are manipulated.
A container for the **safe disposal of sharp objects** should be:

- Well labeled
- Puncture proof, Watertight
- Break resistant (a glass container could break and provide a serious hazard to the person cleaning up)
- Opening large enough to pass needles and scalpel blades, but never large enough for someone to reach in
- Secured to a surface, such as a wall or counter, to ensure stability during use
- Removable for disposal

These containers must then be disposed of safely. *(They can be steam sterilized, then shredded and disposed of to a controlled land fill with municipal waste, encapsulated in a pit or any other options according to national protocols approved by the public health department and ministry of environment.)*

Health-care workers and waste handlers should wear protective equipment such as gloves, apron, mask and be immunized against HBV.

A budget line for a safe waste management should be systematically included when planning a medical activity.

**References**
1. WHO Surgical Care at the District Hospital Manual 2003
2. WHO Management of Solid Health-Care Waste at Primary Health-Care Centres : a decisionmaking guide 2005

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**Disaster Planning**

**It involves the following steps:**

- Designating a senior person to be team leader
- Defining the roles and responsibilities of each staff member
- Establishing disaster management protocols
- Setting up systems for:
  - Identification of key personnel
  - Communication within the hospital
  - Calling in extra staff, if required
  - Obtaining additional supplies, if required
  - Triage
  - Communicating patients’ triage level and medical need
  - Transportation of patients to other hospitals, if possible
• Mapping evacuation priorities and designating evacuation facilities
• Identifying training needs, including disaster management and trauma triage, and training staff
• Practising the management of disaster scenarios, including handling the arrival of a large number of patients at the same time
• Establishing a system for communication with other services, authorities and agencies and the media.

**Trauma Team Leader responsibilities**

• Perform the **primary survey** and coordinate the management of airway, breathing and circulation.
• Ensure that a good **history** has been taken from the patient, family and/or bystanders.
• Perform the **secondary survey** to assess the extent of other injuries.
• Consider **tetanus** prophylaxis and the use of prophylactic or treatment doses of **antibiotics**.
• **Reassess** the patient and the efforts of the team.
• Ensure patient **documentation** is completed, including diagnosis, procedure, medications, allergies, last meal and events leading up to the injury.
• **Communicate** with other areas of the hospital and staff members.
• Communicate with other people and institutions outside the hospital.
• Prepare the patient for **transfer**.
• Liaise with **relatives**.
• Information should flow to and through the leader.
• Know and use the names of the other members of the team and ensure that they have heard and understood directions.
• Check back with members of the team to make sure designated tasks have been completed: for example:
  • “How is the airway?”
  • “Are you having any trouble bagging?”
  • “Have you had to suction much?”
  • “Is the second IV started?”
• Ask for **input from the team**, but ensure that all directions come from only one person.
Transportation of critically ill patients

Transporting patients is risky. It requires good communication, planning and appropriate staffing.
Any patient who requires transportation must be effectively stabilized before departure. As a general principle, patients should be transported only if they are going to a facility that can provide a higher level of care.

- **Planning and preparation include consideration of:**
  - Type of transport (car, lorry, boat, etc.)
  - Personnel to accompany the patient
  - Equipment and supplies required en route for routine and emergency treatment
  - Potential complications
  - Monitoring and final packaging of the patient

- **Effective communication is essential with:**
  - The receiving centre
  - The transport service
  - Escorting personnel
  - The patient and relatives

- **Effective stabilization necessitates:**
  - Prompt initial resuscitation
  - Control of hemorrhage and maintenance of the circulation
  - Immobilization of fractures
  - Analgesia

- **Remember, if the patient deteriorates**
  - Re-evaluate the patient by using the primary survey
  - Check and treat life threatening conditions
  - Make a careful assessment focusing on the affected system

*Be prepared: if anything can go wrong, it will – and at the worst possible time!*