Equipment For Safer Anaesthesia For Everybody Today

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WFSA Anaesthesia Equipment ad hoc Committee
There are now more than 135 societies in our Federation covering more than 150 countries.
Strengthening emergency and essential surgical care and anaesthesia as a component of universal health coverage

(8) to develop and implement surgical care and anaesthesia policies to assure minimum standards for a skilled workforce, adequate equipment, infrastructure and supplies, and documenting, monitoring and evaluation of access to and quality of services, to be embedded in programmes and legislation based on current knowledge and considerations promoting the right to the enjoyment of the highest attainable standard of health;
Surgical Safety Checklist

Before induction of anaesthesia
(with at least nurse and anaesthetist)

- Has the patient confirmed his/her identity, site, procedure, and consent?
  - Yes
  - Not applicable
- Is the site marked?
  - Yes
  - Not applicable
- Is the anaesthesia machine and medication check complete?
  - Yes
- Is the pulse oximeter on the patient and functioning?
  - Yes
- Does the patient have a:
  - Known allergy?
    - No
    - Yes
  - Difficult airway or aspiration risk?
    - No
    - Yes, and equipment/assistance available
  - Risk of >500ml blood loss (7ml/kg in children)?
    - No
    - Yes, and two IVs/central access and fluids planned

Before skin incision
(with nurse, anaesthetist and surgeon)

- Confirm all team members have introduced themselves by name and role.
- Confirm the patient’s name, procedure, and where the incision will be made.
- Has antibiotic prophylaxis been given within the last 60 minutes?
  - Yes
  - Not applicable
- Anticipated Critical Events
  - To Surgeon:
    - What are the critical or non-routine steps?
    - How long will the case take?
    - What is the anticipated blood loss?
  - To Anaesthetist:
    - Are there any patient-specific concerns?
  - To Nursing Team:
    - Has sterility (including indicator results) been confirmed?
    - Are there equipment issues or any concerns?
- Is essential imaging displayed?
  - Yes
  - Not applicable

Before patient leaves operating room
(with nurse, anaesthetist and surgeon)

Nurse Verbally Confirms:
- The name of the procedure
- Completion of instrument, sponge and needle counts
- Specimen labelling (read specimen labels aloud, including patient name)
- Whether there are any equipment problems to be addressed

To Surgeon, Anaesthetist and Nurse:
- What are the key concerns for recovery and management of this patient?

This checklist is not intended to be comprehensive. Additions and modifications to fit local practice are encouraged.

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WFSA Anaesthesia Equipment ad hoc Committee

• The Anaesthesia Equipment Ad-Hoc Committee of the WFSA brings together global expertise in anaesthesia equipment and varied operating environments to advance patient safety and access to safe anaesthesia worldwide. It does this by:

• 1. Identifying component parts for a basic WFSA “Safe Anaesthesia Kit” (the essential equipment necessary for safe anaesthesia).

• 2. Defining and agreeing global performance standards for anaesthesia equipment.

• 3. Anticipating technological developments in anaesthesia equipment and determining whether these will be beneficial to LMICs.

• 4. Establishing a process for the anaesthesia community to engage with equipment developers to ensure that equipment is developed according to the international context (quality, suitability, affordability).
The International Standards for a Safe Practice of Anaesthesia

SAFE Courses in Obstetric & Paediatric Anaesthesia

Anesthesia standards (in order of adoption) | Setting | Infrastructure
---|---|---
**HIGHLY RECOMMENDED** | Level 1 | Basic
**HIGHLY RECOMMENDED + RECOMMENDED** | Level 2 | Intermediate
**HIGHLY RECOMMENDED + RECOMMENDED + Suggested** | Level 3 | Optimal

Occupational Wellbeing

Lifebox
Anaesthesia Capacity

Research Article

Anesthesia Capacity in 22 Low and Middle Income Countries

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Figure 6: Type of anesthesia offered at facilities included in analysis.

Figure 5b: Anesthesia equipment available at facilities included in analysis.

Figure 3: Availability of water, electricity and oxygen in facilities included in analysis.

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A questionnaire survey of anaesthesia providers in Uganda in 2006 suggested that only 13% of providers had the facilities to deliver safe anaesthesia to a child.

45% of district hospitals had a functioning anaesthesia machine
36% had pulse oximetry
Basic of the basics...
GREEN HOSPITAL AND SAFE ANESTHESIA FOR LMICs...

- **reliability of the energy source**: solar energy with backup batteries for the operation of basic surgical equipment (surgical light surgery and electric scalpel, vacuum cleaner) and anesthesia devices.

- **reliability of oxygen sources**: Anesthesia machines with an integrated oxygen concentrator, mini solar powered oxygen production plants.

- **Modular and non-compact monitoring**: Capno devices, a pulse oximeter and an automatic blood pressure monitor are separated with rechargeable lithium batteries with a good autonomy and can be connected to the mains via the charger.

- **Robust syringe pump with good battery life**.

- **A portable ultrasound system**: it is a tool that makes a lot of field service for the realization of locoregional blocks and diagnosis (E-FAST, RUSH).

- **Cheap and/ or easily reusable devices**

- **Local logistic organisation**

- **LONG TERM WARRANTY AND/OR ON-SITE MAINTENANCE CAPABILITY**
To be noted:

- **Affordability?**
  - The process of tenders:
    - Lack of competencies most of the time. Tenders are poorly or not organized.
    - Most of the time, over-the-counter market poorly controlled
  - The budget:
    - Poor budgets for healthcare = not a priority?
    - Most of the time, part of foreign cooperation and/or different kind of donations (old, refurbished, or new...)
    - Low cost equipment vs specifically designed for LMICs?
    - Financing solutions -like rental, don’t exist.
    - Opportunities to ensure some economies of scale are not used

- **Suitability ? Quality?**
  - Despite high costs (not always understandable...), on-site maintenance is not organised and guarantees are of very short term. **Probably the cost and organization of maintenance and the cost of the necessary disposables must be included in the price !**
  - Logistics is not organized, no policy for the disposables

- **Technology may bring solutions and big improvements**
THANK YOU

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