

WHO Emergency & Essential Surgical Care:

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www.who.int/surgery

WHO Emergency & Essential Surgical Care (EESC) Program

www.who.int/surgery

Emergency and essential surgical care

Emergency and essential surgical care

Areas of work

Strategies

Global Initiative (GIEESC)

Education and training

Partnerships

Publications

About Surgery

2 billion people have no access to basic surgical care

11% of the Global Burden of Disease can be treated with **Surgery**



While the world's poorest third get only **3.5%**

Out of **234 million** surgeries done worldwide

The WHO Emergency and Essential Surgical Care (EESC) program is dedicated to providing life-saving surgical care to meet the need in areas of the world where the burden is high, access is low, and the disparity is great.

Download: Disease Control Priorities in Developing Countries pdf, 644kb

Download: An estimation of the global volume of surgery: a modelling study pdf, 215kb

Ensure Safety & Efficacy of Clinical Procedures in Anaesthesia, Surgery, Orthopaedic, Obstetrics

Core activities



Global Initiative for Emergency and Essential Surgical Care (GIEESC)



Integrated Management for Emergency and Essential Surgical Care (IMEESC) tool kit



Global database of Surgical Capacity

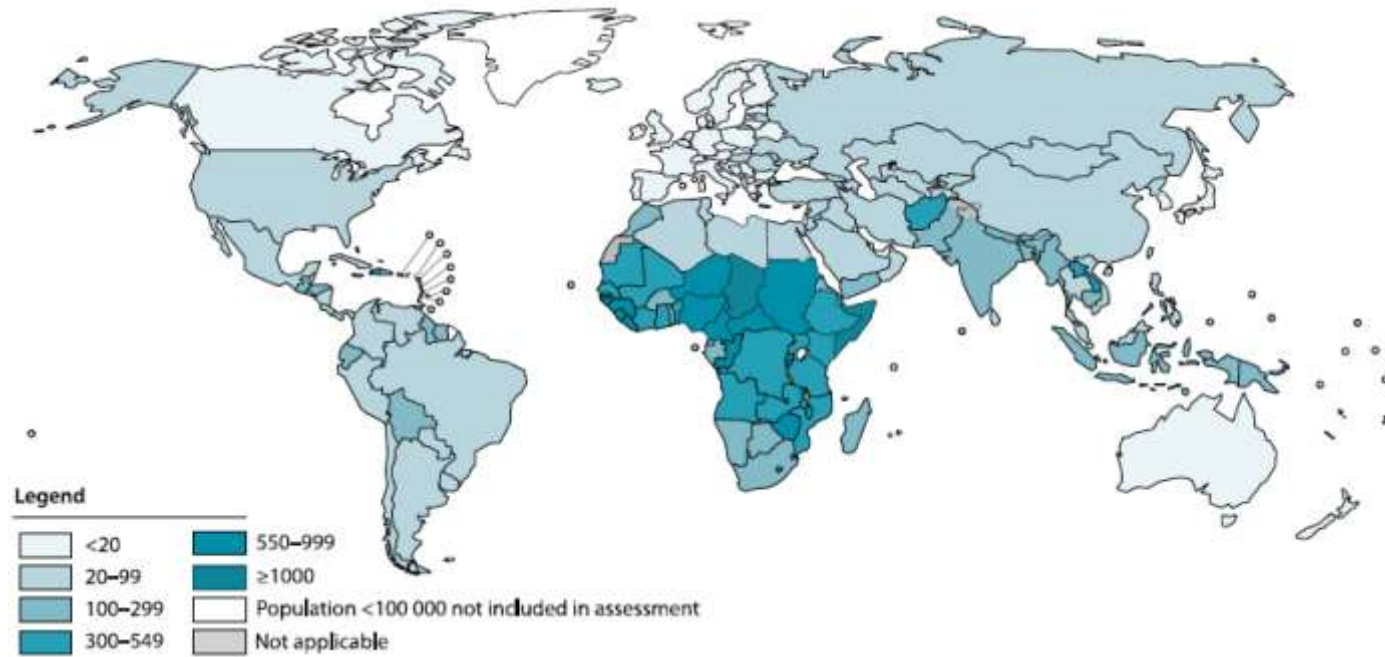
Surgical Care in Global Health Agenda: Millennium Development Goals

800 women/day die from preventable causes related to pregnancy & childbirth; 2010 (287 000 deaths)

70% of maternal deaths: severe bleeding, infections, unsafe abortion, hypertensive disorders

50 000 to 100 000 women/year develop obstetric fistula

Fact sheet N°348 May 2012



110 All images © WHO

Surgical Care in Global Health Agenda

- **Road traffic injuries kill nearly 1.3 million /year**
Top 3 causes of death in 5 to 44 years
Approximately **90%** of these deaths occur in LMICs
- **424 000/year die from falls of which over 80% are in LMICs**
 - 2nd leading cause of accidental/unintentional injury deaths
 - 65 years or older suffer greatest number of fatal falls
 - 37.3 million falls/year are severe enough to require medical attention
- **Disasters:** Failure in health services /health systems
 - Obstetrics / Trauma
 - Other surgical conditions

Fact sheet N°358 September 2012

Fact sheet N°344 October 2012

WHO (2009) Global status report on road safety

EMERGENCY & ESSENTIAL SURGICAL CARE

www.who.int/surgery



World Health
Organization

Surgical Care in Global Health Agenda

- **Eye conditions**
120 million are visually impaired because of uncorrected refractive
- **Cancer**
7.6 million deaths (around 13% of all deaths) in 2008
- **HIV, Infections**
(clinical procedures safety protocols)
- **Female Genital Mutilation**
About 140 million are living with consequences of FGM
- **Tropical disease: Buruli Ulcer; Filariasis**
- **Diabetes**
(foot ulcers, toe foot amputation)



Surgical conditions account for 11% Global Burden of Disease

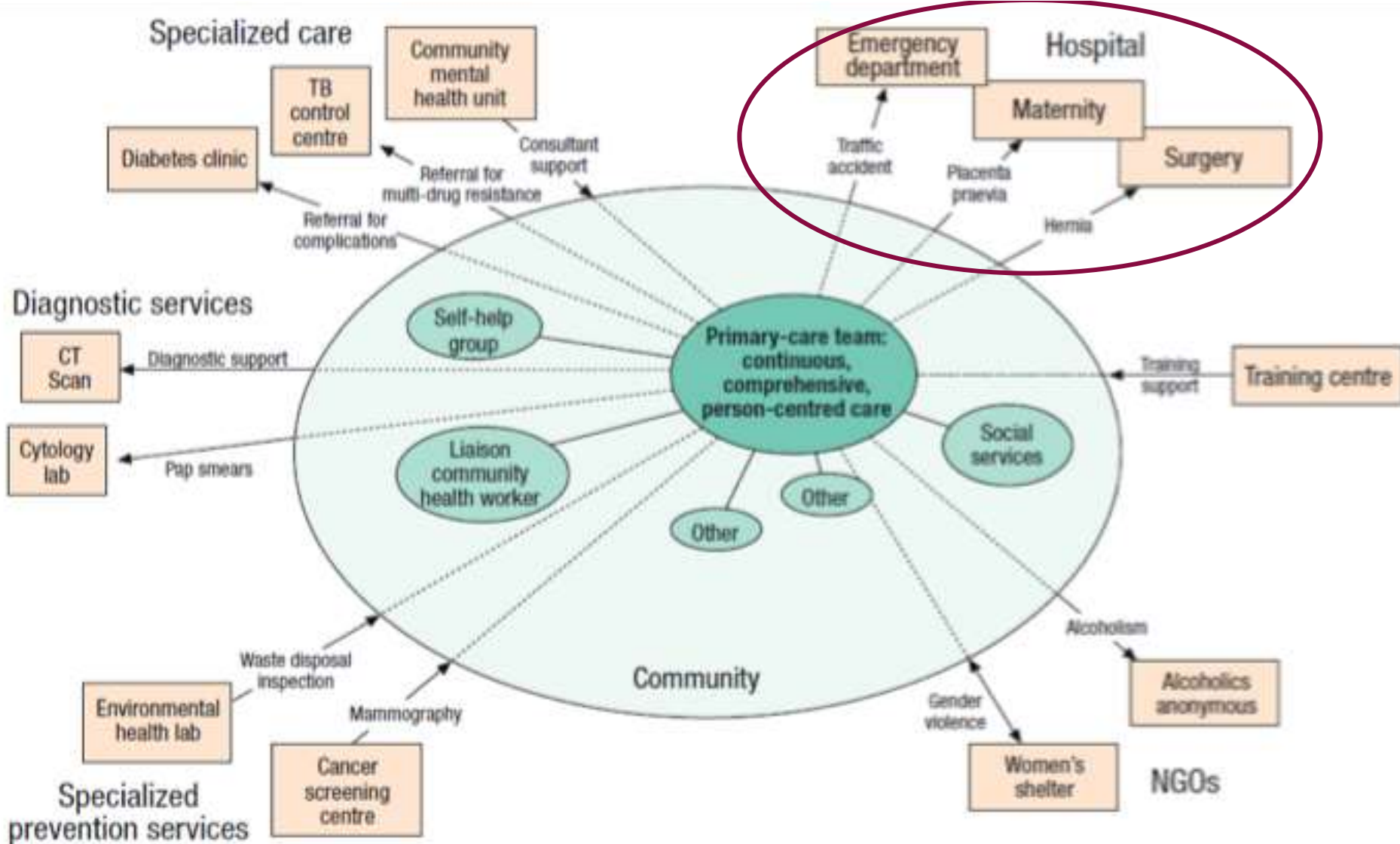
Fact sheet N°241 February 2012; Fact sheet N°312 September 2012

EMERGENCY & ESSENTIAL SURGICAL CARE

www.who.int/surgery



World Health
Organization



WHO Global Initiative for Emergency & Essential Surgical Care (GIEESC)

846 members, 96 countries: 6 WHO Regions



- **Global Forum for Multidisciplinary Stakeholders:**

Health authorities, academia, professionals, societies, international organizations, NGOs

WHO Global Initiative for Emergency & Essential Surgical Care

Access to Surgical Care towards Universal Health Coverage

- Collaborations & partnerships:
 - Research
 - Education and Training
 - Innovative low cost technologies to meet local needs
 - Centers of excellence: north-south; south-south
- WHO Global biennial meetings:
 - **2005; 2007; 2009; 2011**
 - **2013 Trinidad & Tobago, 14-15 October**

WHO Emergency & Essential Surgical Care: Capacity building

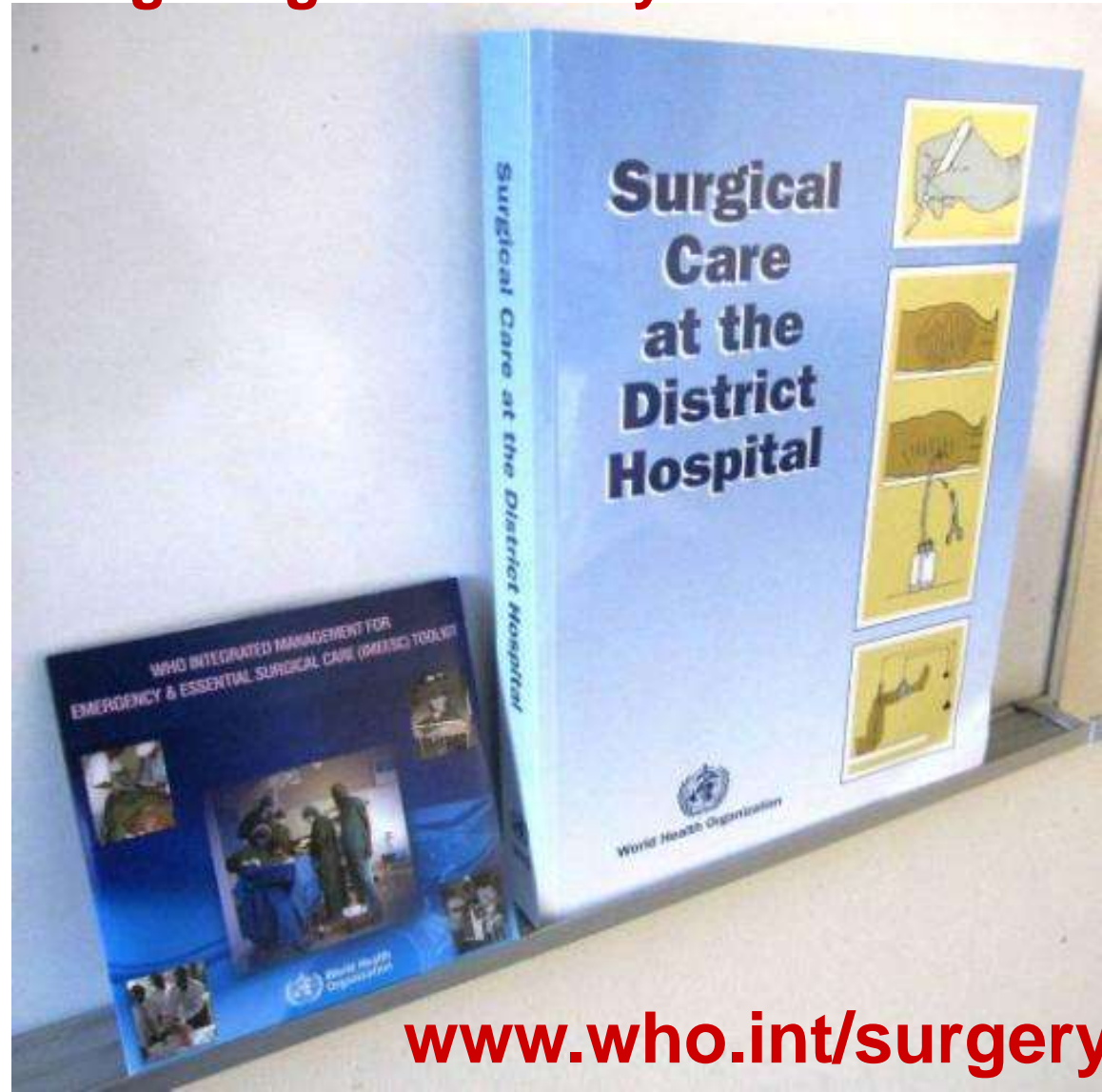
- Basic Emergency Equipment
 - non-functioning, mismatch of technologies, procedures, skills for the level of health facility
- Sub Saharan Africa carries **24%** of the global burden of disease, but has as little as **3%** of the world's health workers
 - Specialists lacking
 - Skilled Health Providers inadequate
 - Training is inadequate
- **World Health Resolution 2006**
Rapid scale up of health workforce is required

WHA resolution2006

WHO Integrated Management for Emergency & Essential Surgical Care (IMEESC) toolkit

WHO Standards for Improving Surgical Care Systems

- **Target Audience**
- Policy-makers
- Managers
- Health providers
- Pre-service training
- In-service training



www.who.int/surgery

Utilizing the WHO IMEESC tool for Policy Management

WHO Planning tool for Emergency and Essential Surgical Services

Planning tool
providing step-by-step
instructions on
establishing surgical
services at the first
referral level.

WHO PLANNING TOOL FOR EMERGENCY AND ESSENTIAL SURGICAL SERVICES AT THE FIRST REFERRAL LEVEL

Contents

1. Introduction

- 1.1 What is the tool?
- 1.2 What is a comprehensive 'Emergency and Essential Surgical Care' at the first referral level health facility plan?
- 1.3 Why should 'Emergency and Essential Surgical Care at the first Referral health facility level' be incorporated in a national health plan?
- 1.4 What can be done to reduce death and disability from surgical conditions at the first referral level?
- 1.5 What does this planning guide contain?

2. Developing an EESC plan for first level health facilities

- 2.1 How to start?
- 2.2 How to proceed?
- 2.3 Steps in the planning process

3. Conclusion

4. References

5. Annexes

- Annex 1: WHO Best Practice Protocols Clinical Procedures Safety and Disaster Management
- Annex 2: Proposed primary surgical care package example
- Annex 3: Anaesthesia infrastructure and supplies
- Annex 4: Tool for Situational Analysis to assess EESC
- Annex 5: EESC Services at the first referral level multi-year costing example (please see attached file)

Figures

- Figure 1.1 Causes of injury worldwide
- Figure 1.2 Causes of maternal mortality worldwide

WHO IMEESC tool

Policy Management



Emergency and essential surgical care

● Aide-Memoire:

- Education programs
- Facilities & equipment
- Supply of drugs, medications
- Quality system
- Adequate budget

AIDE-MEMOIRE

Surgical and Emergency Obstetrical Care at First Referral Level

Well-organized surgical, obstetric, trauma care and anaesthetic services are essential for a district hospital to be an effective community resource. These services should be developed within the framework of the country and district's health care infrastructure.

Without such services, up to 10% of the population will die from injury and 5% of pregnancies will result in maternal death. Unacceptable rates

of death from non-traumatic surgical disorders, infections and disability from injury will also result.

Death and disability from trauma, pregnancy-related complications and disasters can be substantially reduced through the following integrated strategy to maximize the effectiveness of district hospitals.

1. Personnel with appropriate education and training.
2. Practical continuing education programmes in clinical management to maintain the quality of care.
3. Appropriate physical facilities.
4. Equipment and instruments to meet the needs of district surgical services.
5. A reliable system for the supply of drugs and medications, surgical materials and other consumables.
6. A quality assurance system.

Words of advice

1. Develop a national plan for district level surgical services, with the consensus and collaboration of all relevant stakeholders.
2. Obtain support from educational institutions and professional bodies.
3. Ensure continuing education to enable practitioners to provide an effective surgical, obstetrics, trauma care and anaesthetic service.
4. Provide guidance for referral to specialized health facilities.
5. Maintain, repair and upgrade district hospitals to required levels and equip facilities adequately.
6. Assure adequate and reliable supplies of drugs, surgical materials and other consumables.
7. Ensure quality and provision of care.

Checklist

Personnel

- Clinical personnel with appropriate education and training in:
 - Anaesthesia and resuscitation
 - Obstetrics and gynaecology
 - General surgery
 - Traumatology
 - Orthopaedics
- Clinical support staff

Education programmes

- Evaluation of training needs
- Coordinated plan for education and training
- Training in skills needed for surgical care at district hospital level in both:
 - Basic training
 - Continuing education
- Educational resources in hospitals
- Monitoring and evaluation

Facilities

- Casualty area, operating room, labour and delivery room, high dependency area
- Continuous oxygen supply
- Blood bank and laboratory
- Diagnostic imaging
- Sterilization
- Water, electricity, safe waste disposal and communications

Equipment and instruments

- Surgical instruments for:
 - Minor surgery
 - Major surgery
 - Obstetrics and gynaecology
 - Orthopaedic surgery
- Anaesthetic equipment
- Resuscitation equipment
- Basic monitoring equipment

Supplies system

- Drugs, medications, blood and intravenous fluids
- Surgical materials
- Other consumables

Quality system

- Management
- Communication
- Supervision
- Evaluation

Utilizing the WHO IMEESC tool for Infrastructure/Supplies Planning

Designed for use by district managers.

Enables them to identify equipment, procedures, and minimum package needed at various levels of care. Can also serve as a capacity building tool.

Level 1 Small hospital / health centre	Level 2 District/provincial hospital	Level 3 Referral hospital
<ul style="list-style-type: none"> Rural hospital or health centre with a small number of beds and a sparsely equipped operating room (O.R) for minor procedures Provides emergency measures in the treatment of 90–95% of trauma and obstetrics cases (excluding caesarean section) Referral of other patients (for example, obstructed labour, bowel obstruction) for further management at a higher level 	<ul style="list-style-type: none"> District or provincial hospital with 100–300 beds and adequately equipped major and minor operating theatres Short term treatment of 95–99% of the major life threatening conditions 	<ul style="list-style-type: none"> A referral hospital of 300–1000 or more beds with basic intensive care facilities. Treatment aims are the same as for Level 2, with the addition of: <ul style="list-style-type: none"> Ventilation in O.R and ICU Prolonged endotracheal intubation Thoracic trauma care Haemodynamic and inotropic treatment Basic ICU patient management and monitoring for up to 1 week : all types of cases, but with limited or no provision for: <ul style="list-style-type: none"> Multi-organ system failure Haemodialysis Complex neurological and cardiac surgery Prolonged respiratory failure Metabolic care or monitoring
<p>Procedures</p> <ul style="list-style-type: none"> Normal delivery Uterine evacuation Circumcision Hydrocele reduction, incision and drainage Wound suturing Control of haemorrhage with pressure dressings Debridement and dressing of wounds Temporary reduction of fractures Cleaning or stabilization of open and closed fractures Chest drainage (possibly) 	<p>Procedures</p> <p>Same as Level 1 with the following additions:</p> <ul style="list-style-type: none"> Caesarean section Laparotomy (usually not for bowel obstruction) Amputation Hernia repair Tubal ligation Closed fracture treatment and application of plaster of Paris Eye operations, including cataract extraction Removal of foreign bodies: e.g. in the airway Emergency ventilation and airway management for referred patients such as those with chest and head injuries 	<p>Procedures</p> <p>Same as Level 2 with the following additions:</p> <ul style="list-style-type: none"> Facial and intracranial surgery Bowel surgery Paediatric and neonatal surgery Thoracic surgery Major eye surgery Major gynaecological surgery, e.g. vesico-vaginal repair
<p>Personnel</p> <ul style="list-style-type: none"> Paramedical staff without formal anaesthesia training Nurse-midwife 	<p>Personnel</p> <ul style="list-style-type: none"> One [two] trained anaesthetists District medical officers, senior clinical officers, nurses, midwives Visiting specialists or resident surgeon and/or obstetrician/ gynaecologist 	<p>Personnel</p> <ul style="list-style-type: none"> Clinical officers and specialists in an anaesthesia and surgery
<p>Drugs</p> <ul style="list-style-type: none"> Ketamine 50 mg/ml injection, 10 ml Lidocaine 1% or 2% [Diazepam 5 mg/ml injection, 2 ml]injection Pethidine 50 mg/ml injection, 2 ml] [Epinephrine (adrenaline)] 1 mg [Atropine 0.6 mg/ml] 	<p>Drugs</p> <p>Same as Level 1, but also:</p> <ul style="list-style-type: none"> Thiopental 500 mg/1g powder Suxamethonium bromide 500 mg powder Atropine 0.5 mg injection Epinephrine (adrenaline) 1 mg injection Diazepam 10 mg injection Halothane 250 ml inhalation [Ether 500 ml inhalation] 	<p>Drugs</p> <p>Same as Level 2 with the following additions:</p> <ul style="list-style-type: none"> Vecuronium 10 mg powder Pancuronium 4 mg injection] Neostigmine 2.5 mg injection Trichloroethylene 500 ml inhalation] Calcium chloride 10% 10 m injection Potassium chloride 20% 10 ml injection

Utilizing the WHO IMEESC tool for Infrastructure/Supplies Planning

WHO Generic Essential Emergency Surgical Care Equipment List:

- guideline for planning necessary equipment
- needs assessment of gaps in surgical materials and resources.

WHO Generic Essential Emergency Equipment List		
This checklist of essential emergency equipment for resuscitation describes minimum requirements for emergency and essential surgical care at the first referral health facility		
Capital Outlays	Quantity	Date checked
Resuscitator bag valve and mask (adult)		
Resuscitator bag valve and mask (paediatric)		
Oxygen source (cylinder or concentrator)		
Mask and Tubings to connect to oxygen supply		
Light source to ensure visibility (lamp and flash light)		
Stethoscope		
Suction pump (manual or electric)		
Blood pressure measuring equipment		
Thermometer		
Scalpel # 3 handle with #10,11,15 blade		
Scalpel # 4 handle with # 22 blade		
Scissors straight 12 cm		
Scissors blunt 14 cm		
Oropharyngeal airway (adult size)		
Oropharyngeal airway (paediatric size)		
Forcep Kocher no teeth 12-14 cm		
Forcep, artery		
Kidney dish stainless steel appx. 26x14 cm		
Tourniquet		
Needle holder		
Towel cloth		
Waste disposal container with plastic bag		
Sterilizer		
Nail brush, scrubbing surgeon's		
Vaginal speculum		
Bucket, plastic		
Drum for compresses with lateral clips		
Examination table		
Wash basin		
Renewable Items		
Suction catheter sizes 16 FG		
Tongue depressor wooden disposable		
Nasogastric tubes 10 to 16 FG		
Batteries for flash light (size C)		
Intravenous fluid infusion set		
Intravenous cannula # 18, 22, 24		
Scalp vein infusion set # 21, 25		
Syringes 2ml		
Syringes 10 ml		
Disposable needles # 25, 21, 19		
Sharps disposal container		

WHO IMEESC tool

Research Assessment Needs

- WHO Situation analysis tool
- WHO Global database
- Provides First snap shot of Surgical (emergency, obstetrics, trauma, anesthesia) services
- Evidence-based decision-making:
 - Capacity building: equipment/skills/guidelines/training
 - Policies for strengthening district surgical services



Tool for Situational Analysis to Assess Emergency and Essential Surgical Care
Reference: WHO Integrated Management for Emergency & Essential Surgical Care (IMEESC) toolkit: www.who.int/surgery.
Objective: to assess the gaps in the availability of EESC at resource constrained health facilities.
 If you prefer to complete the paper version, please print and return this form by email cherianm@who.int or post or fax to the following address: Dr Meena Cherian, Emergency & Essential Surgical Care project Clinical Procedures Unit, Department of Essential Health Technologies, World Health Organization, 20 Avenue Appia, 1211, Geneva 27, Switzerland, Fax: 41 22 791 4636, www.who.int/surgery.

Section A: Infrastructure

Country *

Name, Phone no. of the person filling the form *

Email:
The email format is 'xxxx@yyyy.zzz'

Name and Phone number of Health Care Facility *

Type of Healthcare Facility: * Health Center District/Rural/Community Hospital Provincial Hospital General Hospital Private/NGO/Mission Hospital

Population served by this health facility (Eg: 100,000 or 1,000,000)
The input is of type 'number'

	0	1	2	3	4	5	10	20	50	80	100	200	300	400	500	700	1'000	2'000	5'000	>5'000
Number of beds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of total admissions in one year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of total functioning operating rooms (major and minor)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of patients at this facility requiring minor & major surgical (including Gyn/Obs) procedures per year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of children (aged less than 15 years) at this facility requiring surgical procedures per year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of patients to this facility that you refer for surgical intervention to a higher level facility per year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How far (in Km) does the average patient travel to get to your health facility for surgical services?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you do not provide surgical services, how far does the average patient travel (in Km) to access surgical services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Assessment of Oxygen in 12 African countries

Table 2. Number and percentage [n, (%)] of health facilities that reported at least one of the items below was either always, sometimes, or not fully functioning and available for use at the time of inquiry.

	Electricity	Generator	Any oxygen source	Oxygen Cylinder	Oxygen Concentrator	Face mask and tubing
Always available	81 (35.1)	127 (56.7)	99 (43.8)	66 (29.1)	55 (24.6)	75 (34.3)
Sometimes available	112 (48.5)	59 (26.3)	71(31.4)	55 (22.9)	64 (28.6)	79 (37.6)
Not available	38 (16.5)	38 (17.0)	56 (24.8)	109 (48.0)	105 (46.9)	65 (31.0)

Belle et al., Influenza preparedness and oxygen supply in Africa J Infect Dev Ctries 2010;4(7):419-24

Utilizing the WHO IMEESC tool for Research and Assessment Needs

Monitoring & Evaluation tool for assisting in budgeting to address gaps to access life-saving surgical (anesthesia, trauma, obstetrics) services.

**Monitoring and Evaluation Tool for
Emergency and Essential Surgical Care**
(Reference: WHO training manual 'Surgical Care at the District Hospital')

Name and designation of respondent _____

Name, Address of Health Care Facility _____
e mail and telephone no. _____

Section A

1. Type of Healthcare Facility (please check one)
Primary health care facility /First referral level health facility/Health Centre/ District Hospital/Rural Hospital/Referral or Consultant Hospital/Teaching hospital /National hospital

2. Number of beds: less than 100/101-300/more than 300

3.

Health Personnel Available	Before Workshop	After Workshop
General doctors		
Nurse anesthetists		
Clinical/Assistant medical officers		
Technicians		
Paramedics		
Surgeons		
Obstetrician/gynecologist		
Anesthesiologist		

Section B: Emergency and essential surgical and anesthesia interventions

4. Type of emergencies, surgical and anesthesia interventions managed at your facility. (see list below) <small>This list is not exhaustive. It attempts to guide trainers to strengthen capacities in emergency and essential surgical and anesthesia interventions. The procedures are level dependent (refer guide to infrastructure and supplies for EESC www.who.int/surgery)</small>	Pre-training		One year Post training	
	Number of cases managed in one year (specify the year)	Number of deaths after procedure in one year (specify the year)	Number of cases managed in one year (specify the year)	Number of deaths after procedure in one year (specify the year)
1. Resuscitation (Control of airway & hemorrhage, establish peripheral percutaneous intravenous line, peripheral venous cut down)				
2. Removal of foreign body				
3. Cricothyroidotomy /Tracheostomy				
4. Chest tube insertion				
5. Incision and drainage of abscesses				
6. Wound suturing, dressing, suture removal				
7. Wound debridement				
8. Burns Management				
9. Contracture release				
10. Skin grafting				
11. Biopsies				
12. Suprapubic puncture/cystostomy				

WHO Emergency & Essential Surgical Care: Education/Training

Integrating & Adapting Training Technologies to meet local



- Low cost editions
- Translations
- Electronic
- Distance learning
- Telemedicine
- Mobile technology
- Improving Quality & Safety

WHO Global Initiative for Emergency & Essential Surgical Care

Adapting training technologies to Meet Local Needs

WHO Emergency and Trauma Care course materials

Emphasizing injuries in women and children

Multi-skills: District/Sub-district level



WHO Emergency & Essential Surgical Care: Education /Training

Adapting training technologies to meet local needs

WHO Primary Surgical Package

- Intravenous access
- Suturing
- Chest tube insertion
- Cricothyroidotomy
- Ketamine anesthesia



WHO IMEESC tool

Skills training

- **CD Training Videos (7) :**
 - **Wound management**
 - **Fracture management** using traction & plaster
 - Open fractures, tendon injuries & soft tissues injuries; Fractures & dislocations of upper limb; Fractures & dislocations of lower limb & pelvis
 - Fractures in children
 - **Head & spinal injuries**
 - **C-section**
 - **Vacuum Extraction**

WHO IMEESC tool

Posters best practices

Best Practice Protocols Clinical Procedures Safety

Implementation at
point of care

- Emergency room
- O.R
- ICU
- Wards
- Obstetrics
- Disaster situation

List of Contents

1. Ethics- Patient Consent
2. Record keeping
3. Operating Room (O.R.)
4. Hand Washing Techniques
5. Scrubbing and gowning
6. Prevention of Transmission of HIV
7. Infection Prevention and Universal Precautions
8. Waste disposal in clinical procedures at resource limited health care facility
9. Diagnosis of Labour
10. Diagnosis of vaginal bleeding in early pregnancy
11. Severe Pre-Eclampsia and Eclampsia
12. Eclampsia Management
13. Urinary Retention: Emergency Drainage
14. Caesarean Section
15. Check List Prior to inducing anaesthesia
16. Managing unexpected effects of a spinal anaesthetic
17. Postoperative management
18. Postoperative pain relief
19. Cardiac life support
20. Airway Management
21. Surgical Cricothyroidotomy
22. Cast Application
23. Splint application
24. Caring for a cast or splint
25. Removing a cast
26. Hand lacerations
27. Disaster Planning
28. Trauma Team Leader Responsibilities
29. Abdominal Trauma
30. Burns Management: adults and children
31. War-related Trauma
32. Transportation of critically ill patients

WHO IMEESC tool

Posters best practices

- Infection prevention & control
- Skin preparation
- Waste disposal
- Patient consent/records

Hand Washing Techniques

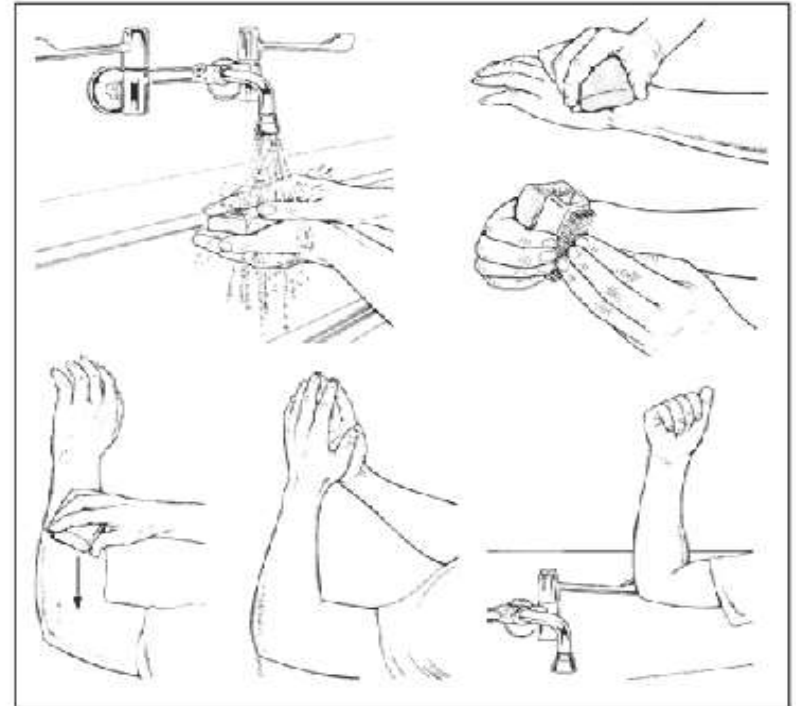


Figure 2.4

When scrubbing (Figure 2.4):

- Remove all jewellery and trim the nails;
- Use soap, a brush (on the nails and finger tips) and running water to clean thoroughly around and underneath the nails;
- Scrub your hands and arms up to the elbows;
- After scrubbing, hold up your arms to allow water to drip off your elbows;
- Turn off the tap with your elbow. (Continued to next page)

WHO IMEESC tool

Posters best practices

- HIV prevention in clinical settings

Prevention of Transmission of HIV

- In the clinical setting, HIV may be transmitted by:
 - Injury with needles or sharp instruments contaminated with blood or body fluids,
 - The use of equipment that has not been properly disinfected, cleaned and sterilized,
 - Contact between open wounds, broken skin (for example, caused by dermatitis) or mucous membranes and contaminated blood or body fluids,
 - Transfusion of infected blood or blood products,
 - Vertical transmission between mother and child during, pregnancy, delivery and breast feeding.
- Purpose of infection precautions and aseptic technique is to prevent the transmission of infection.
- Best protection against HIV and other transmissible infections is attention to every detail of asepsis, with special care to avoid injury during operation.
- Each hospital should have clear guidelines for the management of injury or exposure to infectious materials.

WHO IMEESC tool

Posters best practices

- Burns

Management of Burns

The burns patient has the same priorities as all other trauma patients.

- **Assess:**
 - Airway
 - Breathing: beware of inhalation and rapid airway compromise
 - Circulation: fluid replacement
 - Disability: compartment syndrome
 - Exposure: percentage area of burn.
- **Essential management points:**
 - Stop the burning
 - ABCDE
 - Determine the percentage area of burn (Rule of 9's)
 - Good IV access and early fluid replacement.
- The severity of the burn is determined by:
 - Burned surface area
 - Depth of burn
 - Other considerations.
- Morbidity and mortality rises with increasing **burned surface area**. It also rises with increasing age so that even small burns may be fatal in elderly people.

WHO IMEESC tool

Disaster Management

Best Practice Guidelines on Emergency Surgical Care in Disaster Situations

These guidelines have been extracted from the WHO manual *Surgical Care at the District Hospital (SCDH)*, which is a part of the WHO *Integrated Management on Emergency and Essential Surgical Care (IMEESC)* tool kit.

The following materials relevant to country's disaster situation should be taken from the IMEESC tool:

- Best practice protocols for Clinical Procedures Safety (disaster planning, trauma team responsibilities, hand hygiene, operating room, and anaesthesia check list, postoperative management, application of cast and splints, cardiac life support, airway management),
- Needs assessment
- Essential Emergency Equipment List
- Details of anaesthesia, gunshot and landmine injuries in chapters 13, 14, 17 and 18, in SCDH

List of Contents

1. Antibiotic Prophylaxis
2. Antibiotic Treatment
3. Tetanus Prophylaxis
4. Failure of Normal Methods of Sterilization
5. Cleaning, Disinfection and Sterilization
6. Waste Disposal
7. Resuscitation
8. Unconsciousness
9. Wound Management
10. Hand Lacerations
11. Specific Lacerations and Wounds
12. Amputations
13. Drains
14. Insertion of Chest Drain and Underwater Seal Drainage
15. Cellulites and Abscess
16. Open Fractures
17. Upper Extremity injuries
18. Lower Extremity injuries
19. Spine injuries
20. Fractures in children
21. Compartment syndrome
22. Fat embolism syndrome
23. Female genital injury
24. Postoperative care
25. Ketamine anaesthesia

-Skills building

-District managers

WHO IMEESC tool

Posters best practices

- Obstetric Care

Severe Pre-Eclampsia and Eclampsia

	Mild pre-eclampsia	Severe pre-eclampsia
Diastolic blood pressure	<110	110
Proteinuria	Up to 2+	3+ or more
Headache	No	One or more of these conditions may be present
Visual disturbances	No	
Hyperreflexia	No	No
Urine output <400 ml	No	
Epigastric or right upper quadrant pain	No	
Pulmonary oedema	No	No

Severe pre-eclampsia and eclampsia are managed similarly, with the exception that delivery must occur within 12 hours of the onset of convulsions in eclampsia.

All cases of severe pre-eclampsia should be managed actively. Symptoms and signs of “impending eclampsia” (blurred vision, hyperreflexia) are unreliable and expectant management is not recommended.

Eclampsia Management

Immediate management of a pregnant woman or a recently delivered woman who complains of severe headache or blurred vision, or if a pregnant woman or a recently delivered woman is found unconscious or having convulsions:

SHOUT FOR HELP

1. Make a quick assessment of the general condition of the woman, including vital signs (pulse, blood pressure, respiration) while simultaneously finding out the history of her present and past illnesses from her or her relatives:
 - Check airway and breathing
 - Position her on her side
 - Check for neck rigidity and temperature. (Continued next page)

WHO IMEESC tool

Posters best practices

• Trauma

Abdominal Trauma

When a patient presents with abdominal injury, perform the following actions in priority to the primary survey:

1. Establish a clear airway.
2. Assure ventilation.
3. Arrest external bleeding.
4. Set up an intravenous infusion of normal saline and lactate.
5. Insert a nasogastric tube and begin suction and output.
6. Send a blood sample for haemoglobin measurement, type and cross-match.
7. Insert a urinary catheter, examine the urine for blood and monitor the urine output.
8. Perform the secondary survey: a complete physical examination to evaluate the abdomen and to assess the extent of other injury.
9. Examine the abdomen for bowel sounds, tenderness, rigidity and contusions or open wounds.
10. Administer small doses of intravenous analgesia, prophylactic antibiotics and tetanus prophylaxis.

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.

WHO IMEESC tool

Posters best practices

Postoperative care

Post operative note and orders

The patient should be discharged to the ward with comprehensive orders for the following:

- Vital signs
- Pain control
- Rate and type of intravenous fluid
- Urine and gastrointestinal fluid output
- Other medications
- Laboratory investigations

The patient's progress should be monitored and should include at least:

- A comment on medical and nursing observations
- A specific comment on the wound or operation site
- Any complications
- Any changes made in treatment

Aftercare: Prevention of complications

- Encourage early mobilization:
 - Deep breathing and coughing
 - Active daily exercise
 - Joint range of motion
 - Muscular strengthening
 - Make walking aids such as canes, crutches and walkers available and provide instructions for their use
- Ensure adequate nutrition
- Prevent skin breakdown and pressure sores:
 - Turn the patient frequently
 - Keep urine and faeces off skin
- Provide adequate pain control

Discharge note

On discharging the patient from the ward, record in the notes:

- Diagnosis on admission and discharge
- Summary of course in hospital
- Instructions about further management, including drugs prescribed.

Ensure that a copy of this information is given to the patient, together with details of any follow-up appointment.

• Post operative Care

- Minimum standards for safety and quality

WHO IMEESC tool

Posters best practices

Post- Operative Pain- Relief

- Pain is often the patient's presenting symptom. It can provide useful clinical information and it is your responsibility to use this information to help the patient and alleviate suffering.
- Manage pain wherever you see patients (emergency, operating room and on the ward) and anticipate their needs for pain management after surgery and discharge.
- Do not unnecessarily delay the treatment of pain; for example, do not transport a patient without analgesia simply so that the next practitioner can appreciate how much pain the person is experiencing.
- *Pain management is our job.*

Pain Management and Techniques

- Effective analgesia is an essential part of postoperative management.
- Important injectable drugs for pain are the opiate analgesics. Nonsteroidal anti-inflammatory drugs (NSAIDs), such as diclofenac (1 mg/kg) and ibuprofen can also be given orally and rectally, as can paracetamol (15 mg/kg).
- There are three situations where an opiate might be given: pre-operatively, intra-operatively, post-operatively.
- Opiate premedication is rarely indicated, although an injured patient in pain may have been given an opiate before coming to the operating room.
- Opiates given pre- or intraoperatively have important effects in the postoperative period since there may be delayed recovery and respiratory depression, even necessitating mechanical ventilation.

• Post operative Pain Relief

WHO Emergency & Essential Surgical Care

Collaborations for Sustainable Capacity Building

- Affordable technologies:
 - targeted to low-resource settings for capacity building in equipment, skills
- WHO surgical standards incorporation :
 - outreach education/training programs
- WHO Monitoring & Evaluation tool utilization:
 - assess progress in surgical care health systems



WHO Global Initiative for Emergency & Essential Surgical Care

- Integrating **surgical care technologies** within existing **National health programs**
 - MDGs, Primary Health Care, Universal Health Coverage
- Surgical care incorporated **National health plan**

THANK YOU

