Emergency and surgical procedures at the first referral health facility

Each year one million people are losing their lives because of road traffic accidents and more than half a million women are dying from pregnancy-related complications. In these situations and in many others the ability to apply the correct emergency clinical procedures at the first referral hospital is vital. Young people between the ages of 15 and 44 years account for almost 50% of world’s injury-related mortality.

Road traffic injuries in men aged 15-44 years constitute the second highest cause of ill health and premature death worldwide, second only to HIV/AIDS.

For women in low- and middle-income countries, the leading causes of death are haemorrhage, hypertension, sepsis, abortion and obstructed labour. Worldwide, 60% of pregnant women and about 43% of children under 5 years of age are anaemic, with the highest estimated prevalence in Africa and Asia.

Often, these conditions require life-saving, basic surgical and anaesthetic care that cannot be safely postponed until the patient can be transferred to a distant level of health facility.

A lack of trained staff and equipment

Many first referral level (district or rural) health facilities in developing countries have no specialist surgical teams. The few medical, nursing and paramedical staff available have to perform a wide range of clinical procedures, often with inadequate training. Moreover, essential surgical procedures, such as those to treat fractures, caesarean section, appendectomy, abdominal and genital trauma, require anaesthesia services.
The quality of essential surgical care is frequently constrained by inadequate basic equipment to perform simple but vital interventions such as resuscitation, the provision of oxygen, assessment of anaemia, suctions, chest drains, airway support, etc. Anaemia is highly prevalent in developing countries and must be appropriately assessed, as anaemia lowers a patient’s resistance to infection and presents a serious risk during an operation. Facilities, as well as basic supplies (e.g. gloves, soap, water) and intravenous fluids are also too frequently lacking.

The fact that the majority of the world’s poor live in rural areas with limited access to these facilities, is a serious challenge to public health. For example, a recent survey in a developing country found that 75% of hospitals had an oxygen supply for less than three months of the year.

Cost effectiveness of essential surgical procedures
The economic costs and consequences of traffic injuries are enormous. Some 50% of road traffic fatalities worldwide involve the most economically productive segment of the population, namely young adults. Road casualties threaten to take up about 25% of hospital beds in developing countries. Two simple and cost-effective measures can drastically reduce the incidence of death and disability due to injuries from road traffic accidents, violence, and complications due to pregnancy. The first measure is to increase the availability of trained human resources. The training of existing rural health facility personnel to perform relatively straightforward, life-saving procedures promptly, safely and appropriately is a crucial element. The second is to ensure that certain inexpensive yet essential equipment is available at the first referral care facility.

Basic operational framework
The WHO Department of Essential Health Technologies assists countries to achieve a safe and reliable level of health services in a variety of health technologies through its Basic Operational Frameworks. Below is a summary of the requirements for countries to attain this level of health service for Surgical Services at the First Referral Level, and the products and services that WHO can make available to support this goal.

Health personnel at the district or rural health centre are often unable to carry out essential surgical procedures or emergency care, either because of untrained staff, or due to inadequate facilities, equipment and supplies - or a combination of both. Essential equipment is invariably missing, too sophisticated for local needs or not functioning due to disrepair or lack of spare parts.

EHT is focusing on two activities that will have a sustainable impact on the safety and quality of surgical services at the first referral level. Firstly, training to deal safely and promptly with emergency surgical and anaesthesia care; and secondly a model list of essential emergency equipment and supplies to enable countries to channel their resources where they are needed most.

Needed to be in place in countries
A national policy and plan needs to include emergency surgical services to be carried out at the first level of health care for the population. Key elements include:

- National policy and plan for basic requirements for emergency surgical services.
- Commitment to education and training of health care providers in essential procedures for surgery, obstetrics and anaesthesia.

Who products and services
- Aide-Mémoire on Essential Surgical Care
- Needs assessment tools on procedures and equipment safety

Needed to be in place in countries
To ensure patient safety at all levels, health systems need appropriate infrastructure, training of health personnel and best practice guidelines and protocols to monitor and evaluate services and equipment. Key elements include:

- Assessment of safety of emergency equipment
- Assessment of intervention of emergency procedures
- Standard operating procedures and records
- Monitoring and evaluation of the quality of procedures and equipment

Who products and services
- Technical cooperation and guidelines for quality systems
- Tools to monitor and evaluate quality and safety of procedures and equipment
- Integrated Management for essential and Emergency Surgical Care (IMEESC) Toolkit
Needed to be in place in countries
Access to recommendations on basic requirements for essential surgical services need to be available, as well as guidance on the procurement and maintenance of essential emergency equipment. Key elements include:

- Generic list of essential emergency equipment
- Adequate functioning equipment and trained staff at first referral health facility
- Disaster plan for trauma care

Who products and services

- Generic list of essential equipment for resuscitation, acute care and emergency anaesthesia at various levels of health facility
- Guide to procurement and maintenance of equipment
- Best practice protocols on essential emergency clinical procedures, oxygen therapy, anaemia, infections, waste disposal

Needed to be in place in countries
Continuous education and training on best practices is central to a well-functioning health facility. Effective interventions in the management of trauma, pregnancy-related complications and anaesthesia will significantly reduce mortality and morbidity in the rural areas of developing countries. Key elements include:

- Training, education and e-learning tools on best practice protocols on emergency procedures
- Preventive maintenance of essential equipment
- Assessment of impact of training

Who products and services

- Comprehensive training manual on Surgical Care at the District Hospital
- Guidelines on Clinical Use of Oxygen and Essential Trauma Care
- Tool to detect anaemia in resource-poor settings
- eLearning tool on best practices and effective interventions for emergency, surgical and anaesthesia.
- Training videos on clinical procedures: wound and injuries management, fractures in adults and children
- Integrated Management for Emergency & Essential Surgical Care (IMEESC).