World Health Organization

Report

Fourth Meeting of the WHO Global Initiative for Emergency and Essential Surgical Care (GIEESC)

in collaboration with
University of California, San Diego School of Medicine
San Diego, California, USA
November 9th, 2011

Emergency and Essential Surgical Care (EESC) programme
Clinical Procedures Unit
Department for Health Systems Policies and Workforce (HPW)
World Health Organization Headquarters
Geneva, Switzerland
www.who.int/surgery

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1. Executive Summary

The Fourth Meeting of the World Health Organization (WHO) Global Initiative for Emergency and Essential Surgical Care (GIEESC) was convened on November 9th, 2011 in San Diego, in collaboration with the University of California, San Diego (UCSD). The meeting's 188 participants represented 17 countries, of which 12 were low- and middle-income countries (LMICs). The WHO GIEESC was established in December 2005 through an effort of the WHO Emergency & Essential Surgical Care (EESC) programme to convene several multidisciplinary stakeholders in the surgical care arena. This initiative represented the first coordinated effort to address inadequate capacities in emergency and essential surgical care at the primary care level in LMICs.

The meeting opened with welcome remarks from the Chancellor and Chairman of department of surgery at UCSD, and the WHO Assistant Director-General for Health Systems and Services. The purpose of the meeting was to provide an overview of the progress of the WHO GIEESC activities globally and at country level and develop a roadmap for the next two years in surgical capacity building through implementation of the WHO Integrated Management for Emergency & Essential Surgical Care (IMEESC) tools in policies, training, education, and research in LMICs. Standing working groups for 10 focus areas were established and presented recommendations on finance and resource mobilization, burden of surgical disease, research and publications, education and training, technologies and technology transfer, advocacy, and surgical and anaesthesia missions and partnerships contributing towards strengthening health systems. These recommendations are summarized (available on the final page of this report) to prepare the 2012-2013 roadmap for WHO GIEESC and will serve to guide future progress.

2. Background

Deficiencies in the provision of surgical and anaesthetic services at primary health care facilities in LMICs result in unacceptably high rates of death and disability due to a host of surgically-treatable conditions from injuries to acute abdominal conditions. Barriers to the delivery of essential surgical services in LMICs stem from a perception that surgery is resource intensive and costly; this view has made surgical care a low priority in the development of national and district health policies. The majority of people in many LMICs reside in rural areas, though surgical services are often only available at tertiary facilities in urban areas. Strengthening the delivery of essential surgical services at primary care level (district hospitals, health centres) must be a priority if we are to reduce mortality and morbidity.

There has been a resurgence of interest in Primary Health Care (PHC) as described in the Alma Ata Declaration (1978). In this approach, reinforced in the World Health Report 2008, the primary care team is seen as the "hub of coordination" within the health system. Emergency and Essential Surgical Care (EESC) needs to be integrated into health systems as part of this PHC hub[1] as increasing access to surgical care will help achieve MDGs 4 and 5.

3. Overall Objectives

Goals for GIEESC include improving collaborations among organizations, agencies and institutions involved in reducing death and disability from surgical conditions. Our ultimate goal is to strengthen health systems by integration of EESC into PHC reforms and health system strengthening activities. This will require a multidisciplinary, multisectoral effort.

The specific objectives for this Fourth WHO GIEESC meeting were as follows:

- Report progress on WHO GIEESC activities by member countries
- Build synergies with partners, related non-governmental organizations, and other WHO programmes to facilitate integration of EESC into PHC and health system strengthening
- Convene 10 working groups to carry the GIEESC activities forward from 2012-2013

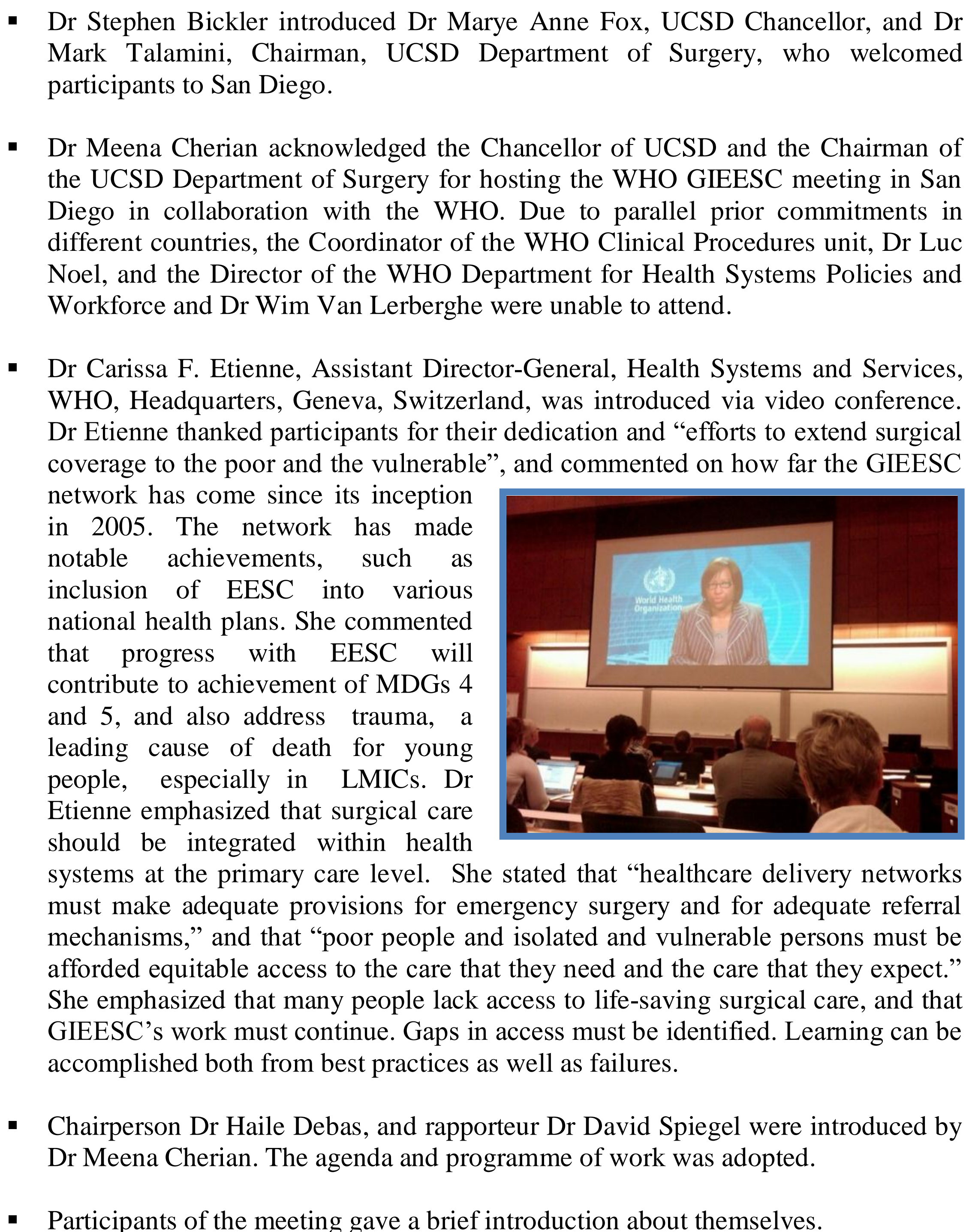
[1] This aim has been expressed recently at the Global Forum on Human Resources for Health (Uganda), the Primary Health Care and Health Systems Conference (Burkina Faso) and the Global Ministerial Forum on Research for Health (Mali).

4. Session I – Opening Session

- Dr Stephen Bickler introduced Dr Marye Anne Fox, UCSD Chancellor, and Dr Mark Talamini, Chairman, UCSD Department of Surgery, who welcomed participants to San Diego.

- Dr Meena Cherian acknowledged the Chancellor of UCSD and the Chairman of the UCSD Department of Surgery for hosting the WHO GIEESC meeting in San Diego in collaboration with the WHO. Due to parallel prior commitments in different countries, the Coordinator of the WHO Clinical Procedures unit, Dr Luc Noel, and the Director of the WHO Department for Health Systems Policies and Workforce and Dr Wim Van Lerberghe were unable to attend.

- Dr Carissa F. Etienne, Assistant Director-General, Health Systems and Services, WHO, Headquarters, Geneva, Switzerland, was introduced via video conference. Dr Etienne thanked participants for their dedication and "efforts to extend surgical coverage to the poor and the vulnerable", and commented on how far the GIEESC network has come since its inception in 2005. The network has made notable achievements, such as inclusion of EESC into various national health plans. She commented that progress with EESC will contribute to achievement of MDGs 4 and 5, and also address trauma, a leading cause of death for young people, especially in LMICs. Dr Etienne emphasized that surgical care should be integrated within health systems at the primary care level. She stated that "healthcare delivery networks must make adequate provisions for emergency surgery and for adequate referral mechanisms," and that "poor people and isolated and vulnerable persons must be afforded equitable access to the care that they need and the care that they expect." She emphasized that many people lack access to life-saving surgical care, and that GIEESC's work must continue. Gaps in access must be identified. Learning can be accomplished both from best practices as well as failures.



- Chairperson Dr Haile Debas, and rapporteur Dr David Spiegel were introduced by Dr Meena Cherian. The agenda and programme of work was adopted.

- Participants of the meeting gave a brief introduction about themselves.

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5. Session II – WHO GIEESC Progress and Country Activities

5.1. WHO GIEESC Overview and Progress: Meena CHERIAN

The WHO EESC programme was established in 2004 in the Clinical Procedures unit and was tasked to "ensure efficacy, safety and equity in the provision of clinical procedures in surgery, anaesthetics, obstetrics, and orthopaedics, particularly at the district hospital level …."[2] The EESC program addresses inequities in the delivery of safe and timely emergency and essential surgical (including anaesthesia, trauma and obstetrics) care at the first referral level in LMICs and has recently moved to the Department for Health Systems Policies and Workforce. The programme employs a horizontal approach for collaborations with various disease-specific initiatives having a component of surgical care.

The WHO EESC program established a global forum, the WHO GIEESC, in 2005, as a coalition of multidisciplinary stakeholders (health authorities, health professionals, societies, academics, NGOs) interested in promoting access to EESC through education and training, research, and institutional partnerships in LMICs, with an aim to strengthen health systems and meet the MDGs. There are currently 470 WHO GIEESC members from 73 countries representing all six WHO regions.

The WHO GIEESC utilizes WHO surgical standards, which include the WHO manual *Surgical Care at the District Hospital* (SCDH), for training health providers at first referral health facilities, and in medical and nursing schools. The WHO *Integrated Management of Emergency and Essential Surgical Care* (IMEESC) toolkit was developed in collaboration with GIEESC to provide guidance on a range of issues from quality and safety, to best practices in treating injuries, pregnancy-related complications, and other surgical conditions, including disaster situations.

The First WHO GIEESC meeting was convened in December 2005 in WHO headquarters, and resulted in a consensus on the establishment of the WHO GIEESC with a secretariat hosted within the WHO EESC programme and a WHO GIEESC MedNet. It emphasized the development of training tools and appropriate technologies to meet local needs of LMICs and stimulate collaboration between stakeholders to raise the profile of essential surgical care at primary health facilities.[3]

The Second WHO GIEESC meeting, hosted by MOH Tanzania in Dar-es-Salaam in September 2007, prioritized development of a simple and quick situational analysis tool to identify gaps in EESC at first referral health facilities. A tool for situational analysis (infrastructure, physical resources, human resources, guidelines, procedures and skills) was developed by the GIEESC planning group in 2007. A WHO EESC global database was created to assist LMICs with data entry, data validation and providing analyses to Ministries of Health (MOH) and WHO country offices. Associated reports and

[2] www.who.int/surgery
[3] www.who.int/surgery/mission/GIEESC2005_Report.pdf

publications have been utilized by several LMICs for evidence-based planning to address gaps in the provision of surgical services at the district and sub-district level.[4]

The Third WHO GIEESC meeting was hosted by MOH Mongolia in 2009 and emphasized the development of a planning tool for policy makers to guide integration of EESC into national/district health plans.[5]

The WHO EESC program and the IMEESC toolkit were introduced jointly with WHO country offices and MOH in collaboration with WHO GIEESC members for capacity building in emergency and essential surgical services in 39 LMICs. The tools have been adapted to meet local needs (translations in Mongolian, Korean, Dari, Farsi and Vietnamese, as well as a low-cost edition).

The first WHO Collaborating Centre for EESC was established in Tanzania and the second in Mongolia is still to be finalized. The tool for situational analysis has been integrated with other WHO programmes such as Service Availability Mapping (SAM) and Service Availability Readiness Assessment (SARA) technologies and is being introduced in a few LMICs in collaboration with relevant WHO departments. In addition, a session on surgery was held at the Global Health Council meeting in Washington, D.C., USA in June 2010 and Consortium of Universities for Global Health conference in Seattle, Washington in 2010.

In order to provide coordinated support to LMICs, the WHO GIEESC should develop working groups on topics such as planning, education and training, burden of surgical illness, partnerships, health systems strengthening, research, technologies transfer and advocacy to assist in:

- Further developing a hub for strategic information on inequities in EESC services to facilitate evidence-based decision making for policies in LMICs

- Expanding & updating WHO EESC global database to generate country profiles, trends, mapping, licensing/registration, and minimal surgical requirements

- Supporting LMICs in strengthening EESC in national health plans with adequate investment for improving capacity of district health services and research on provision of EESC services

- Creating opportunities for inter-country exchange: strategies, lessons learnt, and implementation of best practices in EESC

- Collaborations for capacity building in EESC to meet local needs, such as training, maternal health improvement, and addressing urban/rural inequities

[4] http://www.who.int/surgery/education_training/GIEESC_TanzaniaReportApril08.pdf
[5] http://www.who.int/surgery/globalinitiative/3rdGIEESCreport2009.pdf

- Advocacy for crucial role of EESC within PHC

5.2. Expanding WHO GIEESC and the Path Forward: Raymond PRICE

With regard to mortality, HIV/AIDS, malaria, TB, and maternal causes account for nearly four million deaths. In contrast, injuries and cancer account for 13 million deaths. One of the greatest challenges to medicine is to find a way to provide adequate medical and surgical care to the 85% of the world population that lacks access. The WHO situational analysis tool has enabled us to identify gross deficiencies in the availability of surgical services at the district level; for example in Mongolia there are no fully-qualified surgeons or anaesthesiologists at primary level hospitals. Pressing issues include quantifying the global burden of disease, and evaluating the effects of surgical care as a preventive, cost-effective strategy, which has beneficial impact on the community.

The impact of a lack of surgical care on the community must also be considered, as adequate surgical care can increase the number of individuals returned to a functional capacity, establish lines of trust and communication within the community, sustain a robust workforce, improve general medical care, promote local microenterprise development, paving the way for other healthcare interventions. Studies have shown that surgery can be cost-effective in terms of dollars per DALY averted. The WHO has recently shown a strong commitment toward PHC, and within this conceptual model the primary care team has been identified as the hub of coordination. Surgery has been recognized as a hospital-based strategy within this framework.

The WHO will need to develop a monitoring strategy which enables the decision makers to track health progress and performance, to evaluate impact, and to assure accountability at country and global levels. Disruptive technologies, which may be a mechanism to drive further transformation of surgery and public health, should be considered as part of this effort. An example is that of innovative use of the cell phone as a telemedicine device, an interface for medical devices such as ultrasound, EKG, and CT scan, and as an informative database with regard to medicines, differential diagnoses, treatment options, and patient records.

Another positive achievement which may further the development of surgery on the public health agenda would be a WHO assembly resolution focusing attention on global surgery and anaesthesia. Components might include prioritizing and developing a mechanism to strengthen the provision of care, quantifying the unmet burden of disease, ensuring core competencies in healthcare curricula, and integrating surgery in public health programs.

5.3. WHO GIEESC Country Activities & Progress Reports

5.3.1. AFR

- **Ethiopia:** Abebaw DERSO, Abebayehu Assefa MENGISTU, Abraham ENDESHAW

  Update: The population of 73.9 million is served by 149 hospitals and 732 health centres. There are 136 surgeons and 24 anaesthesiologists. Primary health coverage is estimated at 89.9%. Challenges include poor infrastructure, insufficient supply of medical equipment, shortage of trained caregivers, and unequal distribution of health facilities. WHO support to strengthen EESC and adopt the IMEESC tool kit was provided at a 2005 meeting. A national level Masters program on surgical care for health officers has been initiated at four colleges. Continuing medical education has been provided for 120 lab technicians, 120 midwives, and 18 nurse anaesthetists, and training of trainers was administered for 20 individuals. Emergency skills training was provided for 300 house officers.

  Future: The health tier system has been revised to include primary hospitals to address emergency surgical and obstetric care, and the postgraduate training program will be scaled up. Continuing medical education will be administered to different levels of health professionals, and the IMEESC will be scaled up across all regions. Situational analysis will be expanded. Business process regeneration will be implemented across the health sector to improve delivery of service.

- **Ghana:** Francis ABANTANGA, Matilda BANNERMAN WULFF

  Update: A situational analysis has been performed in 33 hospitals and will be published. EESC will be integrated into the First Referral Hospital, and a greater number of anaesthesiologists will be trained.

  Future: Implement standard, safe surgical practices and methods of monitoring, and encourage MOH to allocate greater resources to improve the delivery of EESC.

- **Mozambique:** Antonio Luis Assis DA COSTA

  Update: Mozambique achieved independence in 1975, and at that time surgical care was provided only at the provincial level by foreign doctors. Training of surgical

technicians began in 1984, based upon key procedures in surgery, obstetrics, and anaesthesia. These paraprofessionals continue to provide services at district hospitals throughout the country. For example, there are currently only 37 orthopaedic surgeons in Mozambique (11 nationals and 26 foreigners) to serve a population of 22 million. Recently the IMEESC toolkit has been utilized as part of the training curriculum for these surgical technicians.

Future: Further utilize the IMEESC toolkit and other WHO training materials to supplement the education of the surgical technicians. A related goal will be to have specialists in surgery, obstetrics, anaesthesia and trauma at each of the provincial and tertiary hospitals in Mozambique.

- **Zambia:** Mohamed LABIB

Update: Zambia has a total of 79 surgeons (0.6 per 100,000 population), including 42 general surgeons, 14 orthopaedic surgeons, 1 plastic surgeon, 7 urologists, 5 neurosurgeons, 4 ENT surgeons, 2 cardiac surgeons, and 4 paediatric surgeons. There are also non-physician surgeons (0.7 per 100,000 population), anaesthesiologists (0.1 per 100,000), non-physician anaesthetists (0.1 per 100,000), and nurses (133.7 per 100,000). Challenges include a poorly-functioning district health system and a lack of adequately-trained and remunerated health professionals with the knowledge, skills and resources to deliver emergency obstetrical and other essential interventions, especially in rural areas. Retention of health workers has been a significant problem. WHO best practice protocols have been implemented in health facilities for "day-to-day" training, and have been translated and adapted to meet local needs.

Future: Need to train greater numbers of health professionals. Plan to offer retention allowance for district health workers, and to train greater numbers of clinical officers who are less likely to emigrate. Elements of the EESC training programme will be integrated in the form of "hands-on" training for undergraduate medical students (four medical schools), and the training will also be completed during internship. Telemedicine will be further developed as a bridge for communication between the University Teaching Hospital and the district hospitals, and an E-learning programme will be provided for the district hospitals. In COSECSA, we are producing a new two-year degree programme for training doctors in surgery, integrating the WHO EESC tools into the curriculum.

- **Summary of AFR Countries who could not attend:** Meena CHERIAN

  During the Pandemic Influenza, the situation analysis tool was utilised to assess oxygen availability in 12 Sub-Saharan African countries and a related publication emphasized the importance of oxygen as a cross-cutting challenge for various health programmes.

  - **Cote d'Ivoire:**
    - Development of French version of WHO tools ongoing
  - **Gambia:**
    - WHO tools incorporated in the medical school
    - Gap analysis completed for EESC services
    - Paper publication
    - Reassessment of availability of oxygen completed
    - Ongoing work on incorporating EESC in the national health plan
  - **Kenya:**
    - Situation analysis, WHO IMEESC toolkit, and WHO manual disseminated to district hospitals
    - Publication ongoing
  - **Liberia:**
    - MOH has expressed support for EESC training programmes and Basic Package Policy completed
    - EESC materials integrated into training modules for task shifting
  - **Malawi:**
    - Medical and clinical officers trained in EESC as part of standard curriculum
    - All district hospitals equipped with emergency response team, anaesthetic technician and moderately-equipped operating theatres
    - EESC introduced and IMEESC toolkit implemented in all district hospitals
    - Masters training programme being developed
    - Situational analysis ongoing
  - **Mali:**
    - Development of French version of WHO tools ongoing
    - French translation of the IMEESC and SCDH being completed
  - **Nigeria:**
    - WHO situational analysis tool for EESC, Oxygen
  - **Sao Tome and Principe:**
    - WHO situational analysis for EESC, oxygen
  - **Sierra Leone:**
    - Additional training and monitoring planned
  - **Tanzania:**
    - Established Surgical Task force
    - WHO-MOH Training workshops at national/district level
    - Completed situational analysis
    - WHO GIEESC Meeting

- WHO EESC collaborating centre
- EESC in National Health Plan

- **Uganda:**
  - WHO tools utilized in training
  - Teaching materials have been inserted into curriculum at medical schools
  - Situational analysis tool being utilized at district health facilities

5.3.2. AMR

- **Summary of AMR Countries who could not attend:** Meena CHERIAN

  - **Caribbean:**
    - WHO IMEESC toolkit as e-learning tool being introduced
  - **Ecuador:**
    - Spanish translation of SCDH manual and IMEESC toolkit awaiting printing
  - **Guyana:**
    - WHO IMEESC toolkit and SCDH manual utilised in training
    - Teaching materials including IMEESC and SCDH manual integrated

5.3.3. EMR

- **Pakistan:** Syed Nabeel ZAFAR, Syed Muhammad AWAIS

  Update: There is an estimated deficit of 17 million surgeries per year in Pakistan, and acute surgical illness accounts for an estimated 187 deaths per 100,000 population per year. Injuries account for 67.8 deaths per 100,000 population per year. The maternal mortality rate is 276 per 100,000 live births (175-785), and the rate of Caesarean sections is 7.6%. There are 79 physicians and 39 nurses per 100,000 population, and only 0.5 anaesthetists per 100,000 population. There are only 0.36 surgeons per 100,000 population at the district level. Some patients have to travel hours and even days to receive "emergency" health care, partly due to poor road infrastructure. Barriers to delivery of district surgical services include deficiencies at the facilities level (equipment, operating rooms, technology, maintenance) and a lack of trained health providers (surgeons, anaesthesiologists, paramedics, nurses). The EESC program was launched in 2004, and workshops on Essential Surgical Skills with emphasis on Emergency Maternal & Child Health (ESSEMCH) for stakeholders were held in April 2005, with Training of Trainers workshops held in April and May of 2005. The situational analysis tool has been used to assess EESC in 18 hospitals.

Future: Advocacy efforts to raise awareness and EESC teaching materials will be promoted at academic institutions. More workshops will be planned. Capacity for EESC will be assessed using the WHO tool at more hospitals and districts. Research on assessing burden of disease and available resources will be promoted. The Department of Orthopaedic Surgery at King Edward Medical University, in partnership with the Foundation for Health Care Improvement, are working with the Punjab Health Department to adopt six District Hospitals to "Uplift Emergency and Essential Surgical Care." A pilot project is envisioned in which these and selected other district hospitals will first be evaluated with the situational analysis tool. Recommendations for upgrading facilities will be made, and EESC workshops will be held. Monitoring of outcomes will follow.

- **Somalia:** Omar SALEH

Update: Somalia has a population of nine million, and there are 250 doctors and 350 nurses. There are 7000 trauma cases per year just in Mogadishu, and 80-90% of hospitals face challenges in infrastructure and physical resources. Problems include intermittent electricity and water, and deficiencies in supplies and equipment. There are 30 surgeons in the country, and referral time is two to seven days. A situational analysis nearly four years ago demonstrated a large gap in the delivery of emergency surgical and obstetric care, and a similar evaluation was carried out two years ago with the IMEESC tool. Training of Trainers workshops have been held at five field hospitals, alongside provision of on-the-job training (surgeons, students, health workers); training topics included CEmOC, aseptic technique, basic and emergency surgical techniques, paediatric surgical emergencies, burn management, safe delivery, and referral guidelines.

Future: Plan gap analysis using situational analysis tool in the different regions of Somalia, and development of primary care surgical package based on WHO training materials in English and Somali.

- **Summary of EMR Countries who could not attend:** Meena CHERIAN

  - **Afghanistan:**
    - WHO situational analysis tool utilised to assess EESC

- Paper published
- WHO manual and IMEESC tools translation in Dari and Pashtu ongoing
- Training workshops utilizing WHO tools

▪ **Egypt:**
- WHO-MOH workshop on EESC

▪ **Iran:**
- WHO manual and IMEESC tools translated in Farsi

▪ **Oman:**
- WHO-MOH facilitators meeting held

5.3.4. <u>EUR</u>

➢ **Summary of EUR Countries who could not attend:** Meena CHERIAN

▪ **Kyrgyzstan**:
- Emergency medicine service among priority agenda
- Best practices and equipment list from the WHO IMEESC toolkit will be utilized

▪ **Tajikistan:**
- WHO IMEESC toolkit utilized in WHO-MOH national workshop
- Parts of WHO IMEESC toolkit translated in Russian
- WHO SCDH manual translation in Russian ongoing

5.3.5. <u>SEAR</u>

➢ **Nepal:** David SPIEGEL for Shankar RAI

Update: The EESC project and IMEESC training materials were introduced in 2004, and a "Joint MOH/WHO workshop on the Delivery of Essential Surgical Services at the District Hospitals in Nepal" was held in 2008. Barriers to the delivery of EESC include topography, variations in both capacity and quality of district hospitals, and civil unrest. Surgical providers are unevenly distributed. A "vision" statement for how EESC can be integrated into Nepal's health system has been submitted to the country office.

Future: Once a constitution is formalized, health system reforms will likely be undertaken. We will advocate for enhancing EESC as a component of health system reform and integrating surgical and anaesthetic services at the district hospital level.

➢ **Summary of SEAR Countries who could not attend:** Meena CHERIAN

▪ **Bangladesh:**
- WHO situational analysis on going

- **Bhutan:**
  - WHO- MOH facilitators workshop held
- **DPR Korea:**
  - WHO manual translation in Korean
  - Training of Trainers workshop held
- **India:**
  - EESC introduced through workshops and advocacy in 2 states: Uttarakhand, Meghalaya
  - Gap analysis ongoing
- **Indonesia:**
  - National Training of Trainers workshop held
- **Maldives:**
  - WHO-MOH training workshop held
- **Myanmar:**
  - WHO situational analysis completed, publication in process
- **Sri Lanka:**
  - WHO situational analysis completed, publication in process

5.3.6 WPR

- **Mongolia:** Lundeg GANBOLD, O. SERGELEN, S. GOVIND, B. MUNKHTOGOO, Bat KEHRER, Raymond PRICE, B. NERGUI, S. ERDENE, Ts. ISHDORJ, Ch. BAYARMAA

Update: Mongolia has 2.8 million inhabitants (Population density: 1.7/km^2). Expenditures on health are 4.3% of the GDP. More than 40% of the population live in rural areas, and skilled health workers prefer to work in urban areas. The distances between *soum* hospitals (primary hospitals) and *aimag* centres (secondary hospitals) are 100-380 km, and access is limited by severe winter conditions. Major abdominal problems include appendicitis, cholecystitis, and ileus. Leading causes of death include injuries and neoplasms. One study demonstrated that 70% of morbidity associated with surgery for appendicitis could be related appendicitis, cholecystitis, and ileus. Leading causes of death include injuries and neoplasms. One study demonstrated that 70% of morbidity associated with surgery for appendicitis could be related to pre-hospital and in-hospital delays, surgical skill incompetence, and postoperative care. The health system is divided into three levels of care, namely Tertiary, Secondary (regional diagnostic and treatment centres) and Primary (Bagh, Soum, Intersoum hospitals).

The Mongolia EESC project was started in 2004, and has expanded considerably since that time. Prior to EESC, ad hoc approaches to improve surgical care included trainings conducted by uncertified trainers, which often did not match the resources available in Soum hospitals. The equipment in many hospitals is not maintained. There was no coordination between NGOs and other partners, and no follow-up after trainings. Objectives of the programme include advocacy for integration of surgical care into PHC and incorporating surgical care at the policy level, capacity building (training, equipment and infrastructure), and improving collaborative efforts of all stakeholders in surgical care. The project has been implemented in several phases, beginning with orientation and advocacy in Phase I. Phase II was completed in 2005 and involved a baseline assessment, facilitators training, and translation and mobilization of teaching materials at six Aimags. Phase III involved training in three Aimags and all Soums, as well as the start of monitoring and evaluation, and took place between 2005 and 2007. Scaling up was started in 2008 and continues until present. Capacity building and training in EESC has been achieved for workers at all levels of the health system. A situational analysis has been completed using the GIEESC tool at 44 primary health facilities and has been published. Training has been completed by 187 Soum doctors from 14 Aimags, 657 surgeons and anaesthesia doctors from Aimag and City Hospitals, 29 midwife or feldshers from rural provinces, and 50 nurses from rural provinces. There have been considerable increases in the performance of a variety of procedures including wound debridement, incision and drainage of abscesses, resuscitation, and fracture care. The impact of the EESC program in Mongolia has been assessed in several ways. First, the project has been associated with a favourable expansion in availability of EESC at participating Soum Hospitals. An emergency room is available in 86% of these facilities (29% before the project), and an emergency kit is now available in 68% (8% before project). Medical records are now kept concerning EESC in 78% (5% before), and instructional materials concerning the facility and equipment is now available in 51% (5% before). Both mortality and complications have decreased following implementation of the EESC program.

Future: A "top down" approach will be supported, focusing on the rural areas of Mongolia. Stakeholders' efforts will be integrated, and while the central teaching tool will be the IMEESC toolkit, flexibility in curriculum development will be encouraged. An evidenced-based evaluation tool for quality improvement must be developed. Other goals for the future include integration of EESC into PHC and further capacity building (training, improving equipment and infrastructure).

- **Papua New Guinea:** Goa TAU

Update: Trauma represents 60% of surgical admissions, and 19% of 236 specialist doctors are surgeons. The maternal mortality ratio is 733 per 100,000. Challenges include the referral network, as there is limited transport by air, road, and sea. An EESC workshop was completed in 2009, and EESC has been integrated into national health standards. In October 2011, the WHO IMEESC toolkit was used as a reference guide to update the 5th PNG SSM Manual for rural health workers, and the WHO IMEESC toolkit CD will be packaged as part of the PNG SSM.

Future: The EESC materials will be integrated into National Health Service Standard. Trainers will be strategically located regionally to train lower cadres of health care workers. The Papua New Guinea National Health Plan 2011-2020 will provide guidance for provincial and district plans with regard to EESC. The WHO IMEESC toolkit will be used alongside the PNG SSM, and clinical indicators will be used to monitor application of SSM. Ten thousand copies of SSM will be printed and distributed, and low-cost copies of WHO SCDH manual will be distributed to all provinces and districts to complement the PNG SSM. The WHO situational analysis tool will be used to assess the PNG program to improve the RHS IFS and service delivery. As part of the National Health Plan 2011-2020, and the new National Health Service Standards, the EESC program will be integrated into provincial and district health plans.

- **Solomon Islands:** Carl SUSAIRARA

Update: The Solomon Islands have a population of 500,000, and there are 80-85 doctors, 5 surgeons, and 360 nurses to serve the population. There are no full time surgeons at provincial hospitals, and all surgical care is provided at the national referral hospital. Delays in diagnosis and treatment are common due to difficulties in accessing surgical care. Medical equipment is lacking in many facilities, and maintenance of equipment is a major concern. There is no intensive care unit available in the country.

Future: Integration of EESC will be pursued and should help to address many of the challenges facing surgical care in the Solomon Islands.

- **Summary of WPR Countries who could not attend:** Meena CHERIAN

  - **China:**
    - WHO-MOH training workshop on EESC held
    - WHO tools translation ongoing
  - **Philippines:**
    - National Training of Trainers held utilizing WHO SCDH manual and IMEESC toolkit for all regional directors of emergency disaster program
    - WHO SCDH manual and IMEESC toolkit disseminated to all district hospitals by MOH
  - **Vietnam**:
    - WHO SCDH manual translated

6. Session III – Plenary Session - The Future of Emergency and Essential Surgical Care

6.1. Surgical Care for Health System Strengthening: David SPIEGEL

Deficiencies and lack of access to surgical care result in a host of neglected conditions, which are clearly more difficult and more costly to treat and result in inferior outcomes. There have been several recent trends in global public health which suggest a return to a broader vision of healthcare services in a "systems approach." The World Health report in 2008 concerns PHC, viewed as a horizontal approach in which the PHC team is seen as the "hub of coordination." Surgery is included in this conceptual model of PHC as a facilities-based service. EESC is horizontal by nature, and certainly resonates with the concepts of PHC and with health systems strengthening. This represents an opportunity for the GIEESC community to develop and integrate surgical inputs that fall within the building blocks of a health system.

The WHO's health system framework includes a "demand" side (people) and a "supply" side (six building blocks). The building blocks include governance, information, financing, service delivery, human resources, and medicines and technologies. With regard to governance, EESC is lacking or absent in strategic frameworks at the country level, and it would be desirable to have a resolution concerning EESC at the World Health Assembly.

With the goal of universal access, we need to develop an appropriate "package" of interventions, prioritizing conditions which represent a large public health burden, for which the treatment is highly successful and cost-effective. Low-cost technologies must be promoted. The health information system is the foundation of decision making. EESC may be integrated in several forms, including surgical *metrics* to evaluate disease burden, safety and outcomes, and *monitoring* of the availability of surgical services at the facilities level, quality and outcomes of our interventions, and impact of training (including broader level assessments of improvements in health system strengthening). For example,

elements of the GIEESC's surgical availability questionnaire have been incorporated into the Service Availability Mapping (SAM) technology (WHO).

Overall, surgery has been neglected as a public health strategy, and in addition to developing strategies for integrating EESC into health system, we must recognize that political attention is also required when moving our agenda forward. We may view the WHO GIEESC as a surgical and anaesthetic "policy community," and consider the conceptual model elaborated by Shiffman for future guidance when promoting our ideas.

6.2. Coordination of Working Groups: Fizan ABDULLAH

Dr Abdullah discussed the expectations of the working groups, emphasizing the ongoing commitments that will be required to achieve our goals over the next two years and beyond. Timetables must be established, and progress must be documented at six month intervals. Working groups will be expected to hold regular conference calls in order to move forward their agendas.

7. Session IV – Working Groups Breakout Sessions and Recommendations for WHO GIEESC Action Plan for 2012-2013

7.1. Organizational Planning

Chairperson: Raymond Price (USA)
Vice Chair: Abebaw Derso (Ethiopia)
Rapporteur: Eric O'Flynn (Ireland)

Objective: Define WHO GIEESC organizational structure, governance and monitoring

Action Items:

- Establish the WHO GIEESC Organizational Planning working group
- Develop terms of reference for the WHO GIEESC Organizational Planning working group
- Condense 10 GIEESC working groups into a smaller number of working groups
- Present draft terms of reference with established working groups in 6 months to WHO EESC
- Working group members elected every two years
- One working group member to represent each of the six WHO regions
- Each working group Chairperson to report to organizational planning working group
- Report to be sent to WHO EESC Programme annually
- Coordinate GIEESC working groups' activities and report to the biennial WHO GIEESC meeting (2013)

7.2. Finance and Resource Mobilization

Chairperson: Richard Azizkhan (USA)
Vice Chair: Francis Abantanga (Ghana)
Rapporteur: Ted Gerstle (Canada)

Objective: Ensure ongoing financial viability of WHO GIEESC

Action Items:

- Identify a plan to support voluntary contributions by individuals, organizations, academic institutions and professional societies, to meet the $300,000 USD annual goal necessary to support the WHO GIEESC secretariat
- Identify and develop other sources of revenue to support GIEESC activities globally
- Organize physician dues and contributions with the working group to set voluntary contribution levels and a mechanism for collecting contributions
- Engage academic institutions to leverage GIEESC as a clearing house for research and volunteer activities, such as Health Volunteers Overseas
- Leverage with other campaigns and identify synergies, e.g. the Decade of Road Safety
- Engage foundations and institutions with a consistent outreach and marketing effort with potential consortiums of manufacturers
- Liaise with other working groups for strategic planning and developing required budgets for programme building
- Monthly conference calls planned until next interim GIEESC call (6 months)

7.3. Education and Training

Chairperson: Mohamed Labib (Zambia)
Vice Chair: Maureen McCunn (USA)
Rapporteur: Antonio da Costa (Mozambique)

Objective: Promote educational and training objectives of WHO GIEESC

Action items:

- Update WHO IMEESC toolkit and WHO SCDH manual in compliance with WHO guidelines review
- Adapt WHO tools to meet local needs (translations, develop primary surgical care packages, etc.)
- Map training opportunities
- Standard training curriculum and training course based on the WHO IMEESC toolkit to be developed and adapted to meet LMICs need

7.4. Burden of Surgical Disease

Chairperson: Theo Vos (USA)
Vice Chair: Mario Perez (Nicaragua)
Rapporteur: Theo Vos (USA)

Objective: Coordinate and generate evidence from GIEESC members to assess the burden of surgical disease

Action Items:

- Facilitate existing burden of surgical disease assessment utilizing WHO EESC global database and research activities of WHO GIEESC members in the following areas:
  - Determine the efficacy/effectiveness of treatment
  - Evaluate potential complications of treatment in terms of extra DALYs
  - Use this information in cost-effectiveness analyses
- Expert elicitation to fill in data gaps: volunteers asked to be interviewed over next few days
- Support common goals with Disease Control Priorities for Developing Countries Network led by Dean Jamison

7.5. Surgical Mission and Partnerships

Chairperson: Benedict Nwomeh (USA)
Vice Chair: Andrew Howard (Canada)
Rapporteur: Jay Krishnaswami (USA)

Objective: Coordinate global surgical activities and partnerships of WHO GIEESC members

Action Items:

- Update Online Directory/Database in WHO GIEESC MedNet for partnerships and missions to assist in supporting requests from WHO country offices, MOH, and health facilities in LMICs and ensure coordinated GIEESC activities
- Pilot database of WHO GIEESC members' activities to identify synergies and maximize utilities and resources
  - Catalogue GIEESC member activities
  - Track needs of LMICs
  - Develop accurate calendar of active ongoing projects or future projects
  - Manage information through WHO GIEESC
  - Utilize WHO EESC website as platform for information

7.6. GIEESC as part of Health System Strengthening

Chairperson: David Spiegel (USA)
Vice Chair: Peter Bendix (USA)
Rapporteur: Rachel Idowu (Kenya/USA)

Objective: Promote integration of EESC services into PHC and Health Systems

Action items:
- Develop set of indicators for surgical care within the WHO health systems framework
- Increase collaborative activities with relevant WHO departments
- Survey LMICs health plans on the integration of surgical care into primary health systems

7.7. Research and Publications

Chairperson: Richard Gosselin (USA)
Vice Chair: Syed Nabeel Zafar (Pakistan)
Rapporteur: Eileen Natuzzi (USA)

Objective: Identify research priorities and promote generation of scientific evidence and publications emphasizing the role of surgical services in strengthening health systems and meeting MDGs

Action Items:
- Process guidelines for accessing WHO EESC global database
- Develop repository on website with current research topics such as addressing surgical needs of population, perceived expense of surgical care, effectiveness of district surgical services, and regional trends
- Prioritize areas of research
- Provide expertise to update WHO assessment tool
- Establish a coordinating body for above tasks

7.8. Anaesthesia and Health System Strengthening

Chairperson: Angela Enright
Vice Chair: Kelly McQueen
Rapporteur: Momodou Baro

Objective: Promote and generate evidence for anaesthesia services as part of the PHC package

Action items:

- Advocate anaesthesia as being an essential component of safe EESC
- Promote locally-driven assistance in anaesthesia education
- Support appropriately-trained human resources
- Incorporate minimum requirements for physical resources utilizing WHO IMEESC toolkit
- Develop minimum WHO anaesthesia guidelines
- Update anaesthetics in the WHO essential medicines list
- Incorporate WHO surgical standards including Safe Surgery Saves Lives in education and training
- Pilot local anaesthesia education initiatives in 5 LMICs

7.9. Technology and Technology Transfer

Chairperson: Goa Tau (Papua New Guinea)
Vice Chair: James Cobey (USA)
Rapporteur: Doruk Ozgediz (USA), Ganbold Lundeg (Mongolia)

Objective: Support technology and technology transfer needs of LMICs in surgical education and training activities of GIEESC members

Action items:

- Monitor technology development through WHO GIEESC MedNet
- Develop a strategy for continued assessment and enhancement of WHO GIEESC web presence
- Support technology transfer activities to enhance global surgical education, training, and research
    - Advocate for educational outreach regarding existence of new technologies
    - Create database/searchable website on technology (connected with WHO GIEESC MedNet and main WHO GIEESC website)
    - Advocate for low-cost pricing for technologies
    - Appropriate training of any introduced new technologies
    - Summarize studies and trials on the ground on transfer of new technologies
- Supporting technology transfer for training/education initiatives
    - Develop online clearing house of available online curricula (content), courses for anaesthesia and surgical care (district level)
    - Develop curriculum/course provided free or at low cost for LMICs, e.g. of existing WHO IMEESC toolkit
    - Translation of tools into local languages
    - Partnerships with training institutions and hospitals for transfer of technologies, e.g. telemedicine

7.10. Advocacy

Chairperson: Matthias Richter-Turtur (Germany)
Vice Chair: Emmanuel Ameh (Nigeria)
Rapporteur: Maryam Naim (USA)

Objective: Advocate for the importance of delivery of EESC locally, nationally, and internationally

Action Items:

- Creation of specific advocacy objectives for EESC in order to:
  - Advocate on need of EESC regularly and not only during acute disaster situations
  - Raise awareness of the general public on what encompasses surgical care and benefits (preventative & curative)
- Identify different players to target:
  - International level (institutions, health authorities, parliaments)
  - National level
  - Local level
  - Professional organizations
  - Civil societies
  - Non-profits
  - Foundations
- Identify specific advocacy tools for the different players
- Act as a liaison between other WHO GIEESC working groups and the public
- Advocacy Working group meeting every four weeks with the next meeting December 2011

Summary of GIEESC Meeting Recommendations and Action Plan

1. Establish the WHO GIEESC Organizational Planning working group to coordinate GIEESC working groups' activities with terms of reference and provide annual report to WHO EESC Programme
2. Identify a plan to support voluntary contributions to meet the $300,000 USD annual goal necessary to support the WHO GIEESC secretariat
3. Update WHO IMEESC toolkit and WHO SCDH manual in compliance with WHO Guidelines Review Committee
4. Develop standardized training course based on the WHO IMEESC toolkit and adapt to meet LMICs' needs
5. Maintain updated online directory/database of global surgical community in WHO GIEESC MedNet and promote partnerships/missions to assist LMICs
6. Develop set of indicators for surgical care within the WHO health systems framework
7. Map training opportunities in EESC, with a special focus on maternal health
8. Survey LMICs' health plans on the integration of surgical care at the primary care level
9. Increase collaborative activities on EESC with relevant WHO departments
10. Develop process guidelines for accessing WHO EESC global database
11. Develop repository on WHO EESC website with current research topics such as addressing surgical needs of population, perceived expense of surgical care, effectiveness of district surgical services, and regional trends
12. Prioritize areas of research in EESC
13. Identify country, regional and global trends in uptake of surgical services in LMICs to enable countries to better anticipate upcoming challenges and opportunities
14. Facilitate existing burden of surgical disease assessment
15. Provide expertise to update WHO EESC assessment tool
16. Develop minimum WHO anaesthesia requirements at primary care level
17. Support locally-driven assistance in anaesthesia education and training
18. Support technology transfer activities to enhance global surgical education, training, and research
19. Advocate both globally and nationally for EESC as a crucial component of district health services through non-traditional channels including civil societies and foundations

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8. Annexes

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