

BACKGROUND DOCUMENT FOR WORLD HEALTH ASSEMBLY RESOLUTION FOR SURGICAL CARE AND ANAESTHESIA

1. Why We Need the Global Attention to Surgical Care and Anaesthesia

Injuries kill more than five million people worldwide each year, accounting for nearly one out of every ten deaths globally.¹ Many of the victims are primary breadwinners in their households—a recent research noted that one third of injury-related mortalities affect those aged 15-44 years, the most economically productive segment of the global population.² Furthermore, injuries constitute one of the main causes of the loss of children and adolescents. According to the WHO, seven of the ten leading causes of death for people aged 5-29 are injury-related; these are road traffic injuries, self-inflicted injuries, interpersonal violence, war injuries, drowning, poisoning and burns.³

Many of these injuries are treatable if surgical care and anaesthesia meeting appropriate standards and protocols are provided to those suffering from injuries in a timely and efficient manner. However, as Dr. Paul E. Farmer recently noted, surgery is still “the neglected stepchild of global health.”⁴ There is no global funding organization focusing on the provision of surgical care or anaesthesia, and none of the major donors are willing to support and acknowledge surgery and anaesthesia as an imperative part of global public health. The result is gross neglect of surgical need for the poor around the world.

According to the WHO, more than 90% of deaths from injuries occur in low- and middle-income countries (LMIC).³ This is not surprising, considering that the poorest third of the world’s population receives only 3.5 % of the surgical operations undertaken worldwide.⁵ Recent research found that there are 0.2 government hospital surgeons available for every 100,000 persons in Sierra Leone.⁶ This is 1500 times fewer than the number of surgeons available during the U.S. Civil War in the mid-19th century (300 surgeons/100,000 soldiers).⁶ In addition, many hospitals in sub-Saharan Africa lack running water, fuel and anaesthetics, making it extremely challenging to perform even the most basic surgical operations.

Contrary to common misperceptions, emerging evidence suggests that surgical care and anaesthesia can be provided in a safe and efficient manner even in resource-constrained settings, making its cost-effectiveness on par with non-surgical interventions that are commonly implemented as public health measures. According to a recent study, the cost per DALY of emergency obstetric care at a rural hospital in Bangladesh was US\$10.93/DALY averted.⁷ The same measurement for all surgical care services provided by a hospital in Sierra Leone was \$32.78/DALY averted.⁸ This compares favourably to many other primary interventions such as vitamin A distribution (\$9/DALY averted), acute lower respiratory infection detection and home treatment (\$20/DALY averted) or measles immunization (\$30/DALY averted).⁷

Nor does the safety of surgical care and anaesthesia need to be compromised in resource-limited environments. Médecins Sans Frontières’s recent report indicates that,

as long as a trained staff member can perform the procedures with basic surgical equipments and supplies, such as electricity, clean water, sterilization units and anesthetics, it is possible to effectively provide surgical care while keeping the operative mortality rate low.⁹

Thus, the question is not whether but *how* to enable all countries to provide safe and competent surgical care and anaesthesia for those in need of such care.¹⁰ Achieving steady and universal access to surgical care and anaesthesia requires a multidisciplinary, multisectoral effort towards accurate assessment of the overall burdens of injuries and surgical diseases as well as enhancement of the surgical infrastructures and public health systems to meet the unmet burdens. The global community should establish uniform terminology and methodology concerning surgical care and anaesthesia to support consistent assessment of surgical conditions and the interventions applied to treat them. All countries should regularly conduct comprehensive monitoring and evaluation of the surgical needs and outcomes on the ground and establish action plans to meet the unmet burdens. Short-term medical missions have an important role in providing immediate relief in crisis, but there must be sustained investment in health infrastructure and training LMICs in order for those countries to develop their own long-term surgical capacity.

All of the aforementioned efforts will require commitment from multiple stakeholders including governments, international organizations, funding agencies, non-governmental organizations, academic institutions and community members. This integrated approach will not only improve surgical capacities but further the delivery of other health services and facilitate the achievement of many of the Millennium Development Goals including reduction of maternal and child mortality and combating HIV/AIDS.¹¹ Adoption of the World Health Assembly resolution that calls for establishment of the Department of General Surgical Care and Anaesthesia is an important step forward in this direction.

2. World Health Assembly and the Impact of Its Resolutions

The World Health Assembly (WHA) is the decision-making, governing body of the World Health Organization (WHO) and consists of every Minister of Health or his/her delegation from 193 Member States. It is led by the Executive Board consisting of 34 designated individuals from Member States, each of which is elected for a three-year term.

All Member State Delegations meet every year in regular sessions (and special sessions at the request of the Board or majority of the Member States) to determine the policies of the WHO, set the WHO priorities and recommend public health actions. For an issue of particular importance, Member States may adopt a resolution. A resolution generally serves the purpose of memorialising the assembly's consensus on the issue and of urging Member States, Regional Committees and the Director-General to take certain actions to resolve the issue.

WHA resolutions exercise heavy influence on governments' actions and donors' funding decisions. While not binding on member states, resolutions often serve as important guidance in planning domestic programme development. Resolutions are also the primary form of guidance given by Member States to the WHO for its own programme development and priority setting.

WHA Resolution 57.10 on road safety and health is a key example. Prior to the WHA's adoption of this resolution, road safety had not been considered a key health issue and very little funding was available in the field. However, Resolution 57.10 brought the public's attention to the inseparable relationship between road safety and public health, which resulted in increased government action, donor interest and now a sizable WHO programme that specifically focuses on the issue.¹²

Over the last few years, the WHO has increasingly recognised the gravity of the global challenge in addressing the LMIC population's inability to access surgical care and anaesthesia. In 2004, the WHO established the Clinical Procedures Unit within the Department of Essential Health Technologies and charged it with the responsibility of ensuring "efficacy, safety and equity in the provision of clinical procedures in surgery, anesthetics, obstetrics, and orthopedics, particularly at the district hospital level."¹⁰ The general focus of the programme has been to develop need assessment measures and practice protocols to promote the education and training of healthcare staff members involved in the provision of surgical care. In addition, the WHO launched the Global Initiative for Emergency and Essential Surgical Care (GIEESC) in December 2005, a partnership of international organizations and individual professionals with the goal of facilitating collaboration among different stakeholders to raise the profile of surgery and anaesthesia, and strengthen the capacity to deliver surgical care in resource-constrained facilities. The 2006 WHO Disease Control Priorities Project marked the first moment when the WHO highlighted surgery as a cost-effective public intervention that was comparable to vaccination.²

However, the WHO's commitment to providing universal access to surgical care and anesthesia remains at a rudimentary level. In fact, the WHO has recently backed down from even the existing support by deciding to effectively discontinue funding for all emergency and essential surgical care programmes—the only programme dedicated to surgical care and anesthesia within the WHO—as of December 31, 2010. This decision is the culmination of a persistent failure on the part of the WHO leadership to recognize the true global burden of treatable injuries and the importance of serving the dire surgical needs of the world's most impoverished populations. In order to rectify this oversight and maintain the momentum of growing interest in sustainable development of the global capacity of surgical care and anaesthesia, it is critical to obtain the WHO Member States' collective voice of support on the issue. Our proposal for the new WHA resolution provides such an opportunity.

3. Our Proposal for the WHA Resolution for Creation of the Department of General Surgical Care and Anaesthesia (SCA)

Our proposal for the new WHA resolution calls for governments, the WHO Director General and others within the global health community to establish a new Department of General Surgical Care and Anaesthesia. The department will be in charge of improving the delivery of surgical care and anaesthesia through raising public awareness about the impact of surgically treatable diseases on individuals and health systems. It will also encourage and foster multisectoral networks and partnerships that promote information sharing, training support and development of new screening measures or implementation action plans concerning surgical care and anaesthesia. If adopted, this will mark the first WHA resolution that is dedicated to surgical care and anaesthesia, and recognises their prominent role in global public health.

While the WHA did adopt Resolution 60.22 on emergency and trauma care in 2007, that resolution addresses only pre-hospital and emergency medical care systems in broad terms without any expressed recognition of the role of general surgical care and anaesthesia. Our proposal seeks governments' explicit commitment ensuring broad access to surgical care and anaesthesia that allow safe and competent treatment of injuries and surgical diseases.

This resolution focuses on integrating surgical care and anaesthesia in the governments' and the WHO's overall efforts to improve global public health. It also encourages them to coordinate with stakeholders to build a coherent public health movement that includes surgery and anaesthesia as a key element. Such a movement will unite the global health community in raising the profile of surgical care and anaesthesia rather than antagonizing competitors in a race for scarce resource. In addition, this resolution will help to achieve the goal of providing enduring surgical care services around the world; a goal that is unattainable without the support of a strong and committed public health sector.

4. Procedures for the WHA's Adoption of the Resolution and How to Advocate Adoption of the Resolution on the Global Capacity Improvement of Surgical Care and Anaesthesia

Under the Constitution of the WHO, the Executive Board has the authority and responsibility to prepare the agenda for meetings of the WHA. The Rules of Procedure of the Executive Board (RPEB) provide that any of the following actors can order inclusion of an item on the provisional agenda of the Board's meeting session: the WHA; a Member State or Associate Member; the UN (subject to preliminary consultation with the Director-General); any specialized agency with which the WHO has entered into effective relations; and the Director-General.

In order for a Member State to submit a proposal for inclusion on the agenda, the proposal must reach the Director-General "no later than 12 weeks after the circulation of the draft provisional agenda or 10 weeks before commencement of the session, whichever is earlier." As such, if the Director-General does make a timely circulation of the draft agenda for the upcoming 128th session in compliance with the RPEB (i.e. within four weeks after the closure of the 127th session on May 22, 2010), inclusion of this

resolution will not occur until the 129th session agenda, due to all provisional agenda items for the 128th session should have been submitted to the Director-General by September 11, 2010.

The 129th session is currently scheduled to occur sometime in May 2011. The draft agenda would likely be circulated some time before February 22, 2011. However, because the 129th session date is very close to the closure of the previous session, the rule of “10 weeks before commencement of the session” would likely apply here as a deadline. While the exact dates for the 129th session have not been decided yet, this would likely mean that we must submit our proposal to the Director-General no later than mid-February of 2011.

Early submission of the proposal is important in order to provide the Director General with the requisite time to prepare requisite materials to be circulated at the meeting. Under the RPEB, the Director-General is required to report to the Board on the technical, administrative and financial implications of all agenda items submitted. It is also common for the Director-General to prepare a report or working document on an item should he/she determine that the topic warrants written statements. If such reports are not available in time for the Board session, either the Director-General or the Board may propose or recommend the deferral or exclusion of the proposal from the agenda.

Once the Director-General places the proposed resolution on the agenda, the Board will open the discussion to attendees for opinions on the merits of the resolution. While any Member States—regardless of whether they are represented on the Board or not—may attend the session and participate in the discussion, only the Board members are allowed to move the adjournment of the debate, move submission of the issue to a vote and vote on the proposal. Two-thirds of the members of the Board constitute a quorum, and a majority of the votes of the members present and voting are required for adoption of the resolution.

Assuming that the resolution attracts a sufficient number of votes, the Board will then include the proposed resolution in the provisional agenda for the WHA. The Director-General must again report to the WHA on the technical, administrative and financial implications of all agenda items submitted to the Assembly before they are considered in a plenary meeting. In addition, the Director-General must consult any items relating to new activities to be undertaken by the WHO with the UN and other agencies specialized in such activities, to the extent the item is of direct concern to such organizations. The Director-General then must report to the WHA on the means of achieving coordinated use of the resources of the respective organizations.

The WHA procedures on adoption of a resolution are as follows: a majority of the Member States represented at the session constitutes a quorum for the conduct of business at plenary meetings of the WHA. A delegate or a representative of an Associate Member may move the adjournment of the debate as well as for a vote on the resolution. However, unlike the Board’s session, the decision on whether to adjourn the debate and/or to put the issue to a vote itself must be submitted to voting. Only after a majority

of the Members present and voting agree to vote on the issue, will they cast their votes on the issue. Adoption of the resolution requires the votes of a majority of the Members present and voting.

Based on the procedures described above, it is critical that we find a delegation of a Member State who would sponsor the proposal and, if possible, at least one member of the Board as well. In order for the Board and eventually the WHA to adopt the resolution, we must garner as much support from Member States as possible by debating, negotiating and bargaining for the issue in advance. Support from the Director-General is also important in light of her heavy influence on the procedural aspects of the adoption process. We must be able to readily provide analysis of the technical, financial and administrative impact of the resolution at the request of the Director-General and/or other WHO officials. Lastly, we should familiarize ourselves with the procedural requirements that a proposal has to satisfy in order to be placed on the agenda for both the Board meeting and the WHA session.

Appendix 1: Proposed Resolution

The ____th World Health Assembly,

Recognising that each year worldwide more than 100 million people sustain injuries, that more than five million people die from violence and injury, and that 90% of the global burden of violence and injury mortality occurs in low- and middle-income countries;

Further recognising that a majority of these injuries are treatable with surgical care and anaesthesia meeting appropriate standards and protocols;

Noting that more than 500,000 women die every year in childbirth and that these deaths are largely attributable to the absence of surgical care and anaesthesia services;

Recognising that the sustainable provision of surgical care and anaesthesia is a critical part of integrated health-care delivery, lowers mortality, reduces disability and prevents other adverse health outcomes arising from the burden of injuries;

Recalling that resolution WHA56.24 requested the Director-General to provide technical support for strengthening trauma and care services to survivors or victims of violence, and that resolution WHA57.10 recommended Member States to strengthen emergency and rehabilitation services for victims of road-traffic injuries;

Further recalling resolution WHA60.22 on health systems: emergency-care systems, which recognized that improved organization and planning for the provision of trauma and emergency care, including surgery, is an essential part of integrated health-care delivery;

Further recalling resolution WHA58.23 on disability, which recommended Member States to promote early intervention to prevent and treat disability and strengthen community-based rehabilitation programmes that are linked to primary health care and integrated in the health system;

Mindful that the achievement of three of the United Nations Millennium Development Goals - reducing maternal and child mortality as well as combating HIV/AIDS, may be hampered by the neglect of LMIC need for surgical care;

Acknowledging the progress made by the WHO's Emergency and Essential Surgical Care Programme, since its inception in 2004, in coordinating control and research activities among organizations and institutions involved in reducing death and disability from road traffic accidents, burns, falls, pregnancy related complications, domestic violence, disasters and other emergency surgical conditions;

Considering that the WHO's published guidance and electronic tools offer a means to improve the organization and planning of efficacy, safety and equity in the provision of

clinical procedures in surgery, anaesthesia, obstetrics and orthopedics, particularly at rural hospitals, district hospitals, primary health care facilities and health centers level;

Concerned that several factors, including the lack of investment in the infrastructure of healthcare systems, the lack of training of surgical care workers and the absence of a stable supply of surgical equipments and necessities, impede further progress;

1. CONSIDERS that additional efforts should be made globally to strengthen provision of surgical care and anaesthesia so as to ensure timely and effective delivery to those who need such care in the overall context of the health-care system, and related health and health-promotion initiatives;

2. URGES Member States:

(1) to prioritize the provision of surgical care and anaesthesia and ensure that ministries of health are involved in, and an intersectoral coordination mechanism is in place for, reviewing and strengthening the provision of such care;

(2) to comprehensively assess the surgical care and anaesthesia capacity of each district hospital, primary healthcare facility and health center to identify unmet infrastructural needs, human resource needs and supply needs;

(3) to improve measurement and surveillance of surgical disease globally, and contribute to understanding of the global burden of unmet surgical needs;

(4) to strengthen a monitoring, data collection and data analysis mechanism to quantify and provide current information on capacity and unmet needs for surgical care and anaesthesia;

(5) to establish surgical care and anaesthesia policies, programmes and legislation based on current knowledge and considerations regarding human rights to health, in consultation with all stakeholders to assure minimum standards for training, equipment, infrastructure, and communication in surgical care;

(6) to identify a core set of surgery and anaesthesia services, and to develop methods for assuring and documenting that such services are provided appropriately to all who need them;

(7) to ensure that appropriate core competencies are part of relevant health curricula and to promote training and education of medical and nursing students as well as continuing education for professionals involved in provision of surgical care and anaesthesia;

(8) to consider the creation of incentives for healthcare providers to engage themselves in the provision of surgical care and anaesthesia and improvement of their working conditions;

(9) to integrate surgical care and anaesthesia in public health programmes, in particular ensuring that the global surgery and anaesthesia capacity improvement is accorded appropriate importance within programmes for maternal health, child health, HIV/AIDS prevention and treatment, as well as any other sector that calls for the inclusion of surgery and anaesthesia on its agenda;

(10) to review and update relevant legislation, including where necessary financial mechanisms and management aspects, so as to ensure that a core set of surgical care services are accessible to all people who need them;

3. REQUESTS the Director-General:

- (1) to collaborate with Member States in establishing and improving a monitoring, data collection and data analysis systems to assess facility-based capacity and needs in surgical care and anaesthesia;
- (2) by the time of 130th Executive Board meeting (January 2012), to establish the terms of reference for a new Department for General Surgical Care and Anaesthesia within the WHO body in order to assess unmet needs of as well as improve the global capacity for surgery and anaesthesia and to submit a progress report to the Sixty-Fifth World Health Assembly;
- (3) to assign the Department of General Surgical Care and Anaesthesia with, among others, the following responsibilities:
 - to raise public awareness about the magnitude of global burden of surgically treatable diseases and injuries and their overall clinical and economic impact on individuals and health systems
 - to analyze and disseminate improved current information on the global population's needs for surgical care and promising interventions that are supported by scientific evidence
 - to foster multisectoral networks and partnerships, create multidisciplinary policies and action plans, and support national, regional and global efforts to develop science-based approaches to prevention, screening and implementation of anaesthesia and surgical care and to enhance teaching and training programmes
- (4) to provide support to Member States for the integration of surgical care and anaesthesia as an essential part of their public health programmes and design quality-improvement programmes and other methods needed for the competent and timely provision of surgical care and anaesthesia;
- (5) to encourage research and collaborate with Member States, academic institutions and other stakeholders in establishing science-based policies and programmes for the implementation of methods to strengthen surgical care and anaesthesia;
- (6) to raise awareness that low-cost ways exist to reduce mortality through improved organization and planning of provision of anaesthesia and surgical care that is appropriate for resource-constrained settings, and to organize regular expert meetings to further technical exchange and build capacity in this area;
- (7) to provide support to Member States for mobilizing adequate resources from donors and development partners to successfully implement this resolution;
- (8) to report on progress made in implementing this resolution to the Health Assembly, through the Executive Board.

Appendix 2: Members of the Executive Board and Term of Office

Below is the list of 34 members, each designated by a Member State that has been elected to serve the World Health Assembly. Member States are elected for three-year terms.

The affiliations appear in the style and the language used by the corresponding member of the Board.

ARMENIA 2010-2013
Mr A.S. Babloyan
Chairman, Standing Committee on
Health Care, Maternal and Child Health
National Assembly
Yerevan

BANGLADESH 2008-2011
Professor A.F.M.R. Haque
Minister of Health and Family Welfare
Dhaka

BARBADOS 2010-2013
Mr D. Inniss
Minister of Health
Ministry of Health, National Insurance
and Social Security
Bridgetown

BRAZIL 2008-2011
Dr P.M. Buss
President, Fundação Oswaldo Cruz
Manguinhos
Rio De Janeiro

BRUNEI DARUSSALAM 2009-2012
Mr P.D.S. Osman
Minister of Health
Bandar Seri Bagwan

BURUNDI 2009-2012
Dr N. Birintanya
Directeur général de la Santé publique
Ministère de la Santé
Bujumbura

CANADA 2009-2012
Dr K. Dodds

Assistant Deputy Minister
Health Policy Branch
Health Canada
Ottawa

CHILE 2009-2012
Dra L. Jadue Hund
Subsecretaria de Salud Pública
Ministerio de Salud
Santiago

CHINA 2010-2013
Dr Ren Minghui
Director-General, Department of
International Cooperation
Ministry of Health
Beijing

ECUADOR 2010-2013
Dr D. Chiriboga
Ministro de Salud Pública
Quito

ESTONIA 2009-2012
Dr M. Jesse
Director, National Institute for Health
Development
Tallinn

FRANCE 2009-2012
M. D. Houssin
Directeur général de la Santé
Ministère de la Santé et des Sports
Paris

GERMANY 2009-2012
Dr E. Seeba
Head, Central Directorate General

European and International Policy Issues
Bundesministerium für Gesundheit
Berlin

HUNGARY 2008-2011
Dr M. Kókény
President of the Health Committee of the
National Assembly
Budapest

INDIA 2009-2012
Ms K. Sujatha Rao
Secretary, Health and Family Welfare
New Delhi

JAPAN 2009-2012
Dr S. Omi
Professor, Jichi Medical University
Tochigi

MAURITANIA 2008-2011
Dr C.E.M. Ould Horma
Ministre de la Santé
Nouakchott

MAURITIUS 2008-2011
Dr N. Gopee
Chief Medical Officer
Ministry of Health and Quality of Life
Port Louis

MONGOLIA 2010-2013
Mr S. Lambaa
Minister of Health, Member of
Parliament
Ulaanbaatar

MOROCCO 2010-2013
Mme Y. Baddou
Ministre de la Santé
Rabat

MOZAMBIQUE 2010-2013
Dr M.O. de Assunção Saúde
National Director for Public Health
Maputo

NIGER 2008-2011
Dr A. Djibo
Directeur Général de la Santé publique
Ministère de la Santé publique
Niamey

NORWAY 2010-2013
Dr B.-I. Larsen
Norwegian Directorate for Health
Oslo

OMAN 2008-2011
Dr A.J. Mohamed
Advisor, Health Affairs
Ministry of Health
Muscat

RUSSIAN FEDERATION 2008-2011
Dr V. I. Starodubov
Director, Central Research Institute of
Health Management and Information
Systems
Ministry of Health and Social
Development
Moscow

SAMOA 2008-2011
Mrs G.A. Gidlow
Minister of Health
Apia

SERBIA 2009-2012
Dr T. Milosavljević
Minister of Health
Belgrade

SEYCHELLES 2010-2013
Dr B. Valentin
Special Adviser for Health
Victoria

SOMALIA 2009-2012
Dr A.I. Abdi
Health Advisor
Ministry of Health

Mogadishu

SYRIAN ARAB REPUBLIC 2009-2012

Dr R. Said
Minister of Health
Damascus

TIMOR-LESTE 2010-2013

Ms M. Hanjam Soares
Vice-Minister of Health
Dili

UGANDA 2008-2011

Dr S. Zaramba
Director-General, Health Services

Ministry of Health
Entebbe

UNITED STATES OF AMERICA
2010-2013

Dr N. Daulaire
Director, Office of Global Affairs,
Department of Health and Human
Services
Washington, D.C.

YEMEN 2010-2013

Dr A.K Yahia Rasae
Minister of Public Health and Population
Sanaa

Bibliography

1. Peden M, McGee K, Sharma G. The Injury chart book: a graphical overview of the global burden of injuries. Geneva: World Health Organization; 2002.
2. McQueen KAK, Parmar P, Kene M, Broaddus S, Casey K, Chu K, et al. Burden of Surgical Disease: Strategies to Manage an Existing Public Health Emergency Prehospital and Disaster Medicine. 2008;24(Supp. 2):s228-s31.
3. Peden M, McGee K, Krug E. Injury: A leading cause of the global burden of disease. Geneva: World Health Organization; 2002.
4. Farmer PE, Kim JY. Surgery and Global Health: A View from Beyond the OR. World Journal of Surgery. 2008;32(4):533-6.
5. Weisner TG, Regenbogen SE, Thompson KD, Haynes AB, Lipsitz SR, Berry WR, et al. An estimation of the global volume of surgery: a modelling strategy based on available data. Lancet. 2008;372(9349):139-44.
6. Crompton J, Kingham TP, Kamara TB, M.F. B, A.L. K. Comparison of Surgical Care Deficiencies between US Civil War Hospitals and Present-Day Hospitals in Sierra Leone. World Journal of Surgery. 2010;34(8):1743-7.
7. McCord C, Chowdhury Q. A cost effective small hospital in Bangladesh: what it can mean for emergency obstetric care. International Journal of Gynecology and Obstetrics. 2003;81(1):83-92.
8. Gosselin RA, Thind A, Bellardinelli A. Cost/DALY averted in a small hospital in Sierra Leone: what is the relative contribution of different services? World Journal of Surgery. 2006 Apr;30(4):505-11.
9. Chu KM, Ford N, M. T. Operative Mortality in Resource-Limited Settings: the Experience of Médecins Sans Frontières in 13 Countries. Archives of Surgery. 2010;145(2):154-60.
10. Spiegel DA. WHO and Essential Surgical Care. Health Volunteers Overseas: Issues in Global Health 2010 [cited 2010 October 18, 2010]; Available from: <http://www.hvousa.org/pdfs/who-and-essential-surgical-care.pdf>
11. Kushner AL, Cherian MN, L. N, Spiegel DA, Groth S, Etienne C. Addressing the Millennium Development Goals from a Surgical Perspective: Essential Surgery and Anaesthesia in 8 Low- and Middle-Income Countries Archives of surgery. 2010;145(2):154-9.
12. Mock C, Arafat R, Chadbunchachai W, Joshipura M, Goosen J. What World Health Assembly Resolution 60.22 Means to Those Who Care for the Injured World Journal of Surgery. 2008;32:1636-42.