Burden of Surgical Disease Working Group

Vanderbilt University
Nashville, Tennessee

March 10-12, 2010

PRESENTED BY:

VANDERBILT UNIVERSITY School of Medicine

Vanderbilt Department of Anesthesiology and Vanderbilt International Anesthesia (VIA)

Vanderbilt Department of Surgery and the Section of Surgical Sciences

Vanderbilt Institute for Global Health

SCHOOL OF NURSING
VANDERBILT UNIVERSITY

Dear Global Burden of Surgical Disease Participant,

With a membership of over 300 international anesthesiologists, surgeons and public health specialists, the Global Burden of Surgical Disease Working Group is a collaborative voice for the essential role of surgery within global public health. Our goals to date have been to advocate for surgical intervention within global public health, advance knowledge about the large, unmet surgical need in low- and middle-income countries, encourage evaluation and reporting of surgical and anesthesia outcomes, and expand the peer-reviewed literature on this important global issue.

This year, we will build on prior achievements, as well as address topics which continue to challenge our efforts. We will consider strategies to:

- improve surgical, anesthetic and obstetric delivery
- focus on metrics and evaluation
- consider the role of academic partnerships in improving surgical infrastructure
- meet the health worker crisis through paradigm shifts in delivery models
- expand education and training in low and middle income countries

New topics for consideration this year include the role of communication in surgical advocacy efforts, accessing corporate partnerships, academic and NGO collaboration to decrease duplication of efforts, and the future of the BoSD WG.

We sincerely hope you will enjoy the program. We are grateful to our speakers, especially our keynote speakers, the Honorable William H. Frist, M.D. and Bob Isherwood. As in years past, we hope the program will stimulate lively discussion and debate and will lead to continued commitment and collaboration within global health.

Kelly McQueen, M.D., M.P.H.
Fellow, Harvard Humanitarian Initiative
Director, Graduate Medical Education for Valley Anesthesiology Consultants, Ltd.
Adjunct Clinical Professor, Mayo Clinic Scottsdale

Douglas C. Heimburger, M.D., M.S.
Associate Director for Education and Training,
Vanderbilt Institute for Global Health
Professor of Medicine,Vanderbilt University School of Medicine

Burden of Surgical Disease Working Group

3RD ANNUAL MEETING
From Science to Advocacy

March 10-12, 2010
Nashville, TN

Vanderbilt School of Nursing
Godchaux Hall 207
461 21st Avenue South
Nashville, TN 37240
Tel: (615) 322-4400

Student Life Center
Vanderbilt University
310 25th Avenue South
Nashville, TN 37240
Tel: (615) 343-0371

WEDNESDAY, MARCH 10, 2010

5 p.m. Welcome Reception
Vanderbilt Student Life Center Ballroom A

6 p.m. Dinner
Vanderbilt Student Life Center Ballrooms B and C

Welcome and Opening Remarks

Douglas C. Heimburger, M.D., M.S.
Associate Director for Education and Training,
Vanderbilt Institute for Global Health
Professor of Medicine,
Vanderbilt University School of Medicine

Jeffrey R. Balser, M.D., Ph.D.
Vice Chancellor for Health Affairs
Dean, Vanderbilt University School of Medicine

Kelly McQueen, M.D., M.P.H.
Fellow, Harvard Humanitarian Initiative
Director, Graduate Medical Education for
Valley Anesthesiology Consultants, Ltd.
Adjunct Clinical Professor, Mayo Clinic Scottsdale

Keynote Address

Lessons Learned in Haiti:
Using Crisis to Highlight Surgical Need

The Honorable William H. Frist, M.D.
Professor of Business and Medicine, Vanderbilt University
Chair, Hope Through Healing Hands

THURSDAY, MARCH 11, 2010

8 – 8:30 a.m. Registration and Continental Breakfast
Frist Hall Atrium, Vanderbilt School of Nursing

8:30 – 8:45 a.m. Surgical Intervention and Global Health
Nursing Annex 161

Douglas C. Heimburger, M.D., M.S.
Associate Director for Education and Training,
Vanderbilt Institute for Global Health
Professor of Medicine,
Vanderbilt University School of Medicine

8:45 – 9 a.m. Welcome and Update on BoSD Working Group
Nursing Annex 161

Kelly McQueen, M.D., M.P.H.
Fellow, Harvard Humanitarian Initiative
Director, Graduate Medical Education for
Valley Anesthesiology Consultants, Ltd.
Adjunct Clinical Professor, Mayo Clinic Scottsdale

9 - 10 a.m. **Keynote Address**
Nursing Annex 161

For crying out loud

Bob Isherwood
Partner, i.e. Healthcare
Former Worldwide Creative Director, Saatchi & Saatchi

10 – 10:15 a.m. Morning Break
Frist Hall Atrium

10:15 – 11:15 a.m. The Global Health Care Workforce Panel
Nursing Annex 161

Options for Extending Surgical, Obstetric and Anesthesia Workforces

Mark W. Newton, M.D.
Associate Professor of Clinical Anesthesiology,
Vanderbilt University School of Medicine
Director, Vanderbilt International Anesthesia
Director, Kenya Registered Nurse Anaesthesia,
Kijabe Hospital, Kenya

Panel (con't)

Charles L. Woodrow, M.D.
Fellow, American College of Surgeons

Training and Maintaining the Future Low- and Middle-Income Countries' Workforces

John L. Tarpley, M.D.
Professor of Surgery and Assistant Chief of Surgical Service,
Department of Veterans Affairs Medical Center
Program Director, General Surgery Residency,
Vanderbilt University School of Medicine

Robert Riviello, M.D., M.P.H.
General Surgeon, Brigham and Women's Hospital

11:15 – 12:15 a.m. Applying Metrics for Emergency and Essential Surgery
Nursing Annex 161

Metrics for surgical burden
Theo Vos, M.Sc., Ph.D.
Director, Centre for Burden of Disease and
Cost-Effectiveness, School of Population Health,
University of Queensland, Australia

Surgical surveillance metrics
Thomas G. Weiser, M.D., M.P.H.
Surgical Resident, Brigham and Women's Hospital
Research Fellow, Harvard School of Public Health

12:15 – 1:30 p.m. Luncheon
Nursing Annex 161

Corporate Partnerships:
Building Sustainable Relationships for Global Health

Jeff W. Morrill, MBA
President and Chief Executive Officer,
NuOrtho Surgical, Inc.

1:30 – 4:30 p.m. Breakout Groups

2:45 – 3:15 p.m. Refreshments
Frist Hall Atrium

Group 1
Global Anesthesia Crisis: Solutions for Low- and Middle-Income Countries
Nursing Annex 164

Moderators: **Gerald Dubowitz, M.D.**
Assistant Professor, Department of Anesthesia,
University of California at San Francisco
Director, Regional Anesthesia, Mt. Zion Hospital
Director, Global Partners in Anesthesia and Surgery

Mark W. Newton, M.D.
Associate Professor of Clinical Anesthesiology,
Vanderbilt University School of Medicine
Director, Vanderbilt International Anesthesia
Director, Kenya Registered Nurse Anaesthesia,
Kijabe Hospital, Kenya

Adeyemi J. Olufolabi, M.B.B.S.
Associate Professor, Division of Women's Anesthesia,
Department of Anesthesiology, Duke University Medical Center

Rapporteur: **Charles Lord, M.D**.
Resident, Department of Anesthesia,
Massachusetts General Hospital

Group 2
Raising the Standard for Surgical Delivery and Outcomes
Nursing Annex 165

Moderators: **Angela D. Lashoher, M.D., M.P.H.**
Resident, Johns Hopkins Department of Surgery
Technical Officer, World Health Organization Patient Safety

Theo Vos, M.Sc., Ph.D.
Director, Centre for Burden of Disease and Cost-Effectiveness,
School of Population Health, University of Queensland, Australia

Thomas G. Weiser, M.D., M.P.H.
Surgical Resident, Brigham and Women's Hospital
Research Fellow, Harvard School of Public Health

Rapporteur: **Rachel Idowu, M.D.**
Fellow, Vanderbilt Critical Care Anesthesia

Group 3
Academic Partnerships in Low- and Middle-Income Countries:
Collaboration and Curbing Duplication
Nursing Annex 167

Moderators: **Angela Enright, M.B., B.Ch., B.A.O., F.R.C.P.C.**
Clinical Professor of Anesthesia,
University of British Columbia, Canada
Professor of Health Sciences, University of Victoria,
British Columbia, Canada
Chair of the Board of Trustees, Canadian Anesthesiologists' Society International Education Foundation

Robert Riviello, M.D., M.P.H.
General Surgeon, Brigham and Women's Hospital

John L. Tarpley, M.D.
Professor of Surgery and Assistant Chief of Surgical Service,
Department of Veterans Affairs Medical Center
Program Director, General Surgery Residency,
Vanderbilt University School of Medicine

Rapporteur: **Allison Linden, M.D.**
Resident, General Surgery, Georgetown University Hospital

Group 4
Obstetrical Delivery of Emergencies/Prevention of Morbidity and Mortality
Nursing Annex 162

Moderators: **Andy Norman, M.D.**
Assistant Professor, Department of Obstetrics and Gynecology,
Vanderbilt University School of Medicine

Medge Owen, M.D.
Professor of Obstetric Anesthesiology,
Wake Forest University Baptist Medical Center

Emmanuel Srofenyoh, M.D.
Director of Obstetrics and Gynecology,
Ridge Regional Hospital, Accra, Ghana

Rapporteur: **Laura Meints, M.D., MBA**
Resident, Department of Obstetrics and Gynecology,
Barnes-Jewish Hospital

Group 5
BoSD Transition? Society vs. Nonprofit vs. Other: Next Steps for Creating a Board of Directors, Business Plan and Model, and Funding
Nursing Annex 166

Moderators: **Kathleen Casey, M.D., F.A.C.S.**
Director, Operation Giving Back, American College of Surgeons

Bob Isherwood
Partner, i.e. Healthcare
Former Worldwide Creative Director, Saatchi & Saatchi

Kelly McQueen, M.D., M.P.H.
Fellow, Harvard Humanitarian Initiative
Director, Graduate Medical Education for
Valley Anesthesiology Consultants, Ltd.
Adjunct Clinical Professor, Mayo Clinic Scottsdale

Rapporteur: **Lara Bratcher, M.D. and M.P.H. candidate**
Vanderbilt University School of Medicine, class of 2010

5:30 - 6:30 p.m.
Poster Session
Vanderbilt Student Life Center, Ballroom A

1. "Physical and Human Resources for Emergency and Essential Surgery in The Gambia"
Stephen W. Bickler, M.D.
Professor of Surgery and Pediatrics, University of California, San Diego
Adam Iddriss, M.D. candidate, Johns Hopkins School of Medicine

2. "Reconstructive Surgical Conditions in Zambia: A Perspective From 15 Years of Practice"
Kendra G. Bowman, M.D., Ph.D.
Department of Surgery, Brigham and Women's Hospital
Scott Corlew, M.D., M.P.H.,
Chief Medical Officer, Interplast

3. "Assessing the Surgical Capacity in Indonesia: A Pilot Survey"
Smita Chackungal, M.D., M.P.H. candidate, Harvard School of Public Health

4. "Third Year Medical Student Surgery Clerkship in Rural Haiti: Perspectives from Student Leaders"
Anthony Chin-Quee, M.D. candidate, Emory University School of Medicine Class of 2011
Laura White, M.D. candidate, Emory University School of Medicine Class of 2011

5. "An Estimation of the Global Incidence of Prolonged Hypoxemia During Surgery"
Jesse M. Ehrenfeld, M.D., M.P.H.,
Department of Anesthesia, Critical Care, & Pain Medicine, Massachusetts General Hospital

6. "Obstacles to the Access and Delivery of Maternal Health Care in North-Central Liberia"
Matthew Gartland, M.D. candidate,
Vanderbilt University School of Medicine, Class of 2012

7. "International Anesthesiology Electives in Graduate Medical Education"
Joseph Hyder M.D., Ph.D.,
PGY-2, Department of Anesthesiology, Mayo Clinic, Rochester, NY

8. "Surgical Infrastructure of Haiti"
Lisa M. Knowlton, M.D., M.P.H. candidate,
General Surgery Resident, Harvard School of Public Health
M.P.H. candidate, University of British Columbia/Harvard School of Public Health

9. "Short-Term Surgical Trips Supplement Global Health Care Delivery in Under-Resourced Areas"
Ira Leeds, M.D. candidate, Emory University School of Medicine Class of 2011

10. "A Structural Proposal for Anesthesia Development in Africa"
Charles Lord M.D., resident,
Department of Anesthesia and Critical Care, Massachusetts General Hospital

11. "Building Sustainable Infrastructure for Musculoskeletal Care in the Developing World"
Tom Penoyar M.D., M.S., research associate,
Institute for Global Orthopaedics and Traumatology, University of California, San Francisco

12. "Surgical Care in Primary Hospitals of Tanzania"
Tom Penoyar, M.D., M.S., intern,
Emergency and Essential Surgical Care, World Health Organization

13. "Developing Collaborative Institutional Partnerships to Address the Burden of Pediatric Heart Disease in Western Kenya: Tenwek Hospital"
John W. Scott, M.D. candidate, Vanderbilt University School of Medicine Class of 2010
Kirstin W. Scott, M.P.H., Program Coordinator, Clinical and Translational Science Award

6:30 – 9 p.m. Working Dinner
Vanderbilt Student Life Center, Ballrooms B and C

7 – 7:45 p.m. Panel Presentation
Haiti: Challenges and Rewards of Surgical Delivery Post-Earthquake
Vanderbilt Student Life Center, Ballrooms B and C

Moderator: **Kelly McQueen, M.D., M.P.H.**
Fellow, Harvard Humanitarian Initiative
Director, Graduate Medical Education for
Valley Anesthesiology Consultants, Ltd.
Adjunct Clinical Professor, Mayo Clinic Scottsdale

Panelists:

Susan M. Briggs, M.D., M.P.H.
Associate Professor of Surgery, Harvard Medical School
Director, International Trauma and Disaster Institute,
Massachusetts General Hospital
Founder, U.S. International Medical
Surgical Response Teams (IMSURT)

Samuel B. Broaddus, M.D.
Director, Division of Urology, Maine Medical Center
Surgical Team Leader, Konbit Sante

Craig D. McClain, M.D., M.P.H.
Associate in Perioperative Anesthesia, Children's Hospital Boston
Assistant Professor of Anesthesiology, Harvard Medical School

David P. Mooney, M.D., M.P.H.
Trauma Program Director, Children's Hospital Boston
Assistant Professor of Surgery, Harvard Medical School

George D. Politis, M.D., M.P.H.
Associate Professor of Anesthesiology and Pediatrics,
University of Virginia School of Medicine
Anesthesia Council, Operation Smile International

Robert Riviello, M.D., M.P.H.
General Surgeon, Division of Trauma, Burn,
and Surgical Critical Care, Brigham and Women's Hospital

Stephen R. Sullivan, M.D., M.P.H.
Surgeon, Department of Plastic Surgery, Rhode Island Hospital
Assistant Professor, Departments of Surgery and Pediatrics,
The Warren Alpert Medical School of Brown University

7:45 – 8 p.m. Panelist Q & A
Vanderbilt Student Life Center, Ballrooms B and C

8 – 9 p.m. Breakout Groups
Vanderbilt Student Life Center, Ballrooms B and C

FRIDAY, MARCH 12, 2010

8:30 - 9 a.m. Continental Breakfast
Frist Hall Atrium

9 - 10 a.m. Breakout Groups reconvene and finalize action plans, consensus statements

Group 1: Global Anesthesia Crisis: Solutions for Low- and Middle-Income Countries
Nursing Annex 164

Group 2: Raising the Standard for Surgical Delivery and Outcomes
Nursing Annex 165

Group 3: Academic Partnerships in Low- and Middle-Income Countries: Collaboration and Curbing Duplication
Nursing Annex 167

Group 4: Obstetrical Delivery of Emergencies/Prevention of Morbidity and Mortality
Nursing Annex 162

Group 5: BoSD Transition? Society vs. Nonprofit vs. Other: Next Steps for creating a Board of Directors, Business Plan and Model, and Funding
Nursing Annex 166

10 a.m. – noon Breakout Group Presentations
Nursing Annex 161

noon – 1:30 p.m. Luncheon
Nursing Annex 161

OB Multidisciplinary Collaboration: Improving Infrastructure, Education and Services in Ghana

Emmanuel Srofenyoh, M.D.
Director of Obstetrics and Gynecology,
Ridge Regional Hospital, Accra, Ghana

Adeyemi J. Olufolabi, M.D.
Associate Professor, Division of Women's Anesthesia,
Department of Anesthesiology, Duke University Medical Center

1:30 – 2 p.m. Cultural Understanding: Methods for Achieving Safe Surgery and Anesthesia
Nursing Annex 161

Michael Stabile, M.D., MBA
Head of Anesthesia Council, Operation Smile International
Partner, Anesthesia Medical Group, LLC
Quality and Safety Committee, World Federation of Societies of Anaesthesiologists

2 – 2:30 p.m. The International Committee for the Red Cross Contribution to Unmet Surgical Need
Nursing Annex 161

Marco Baldan, D.D.S., M.D.
Head Surgeon, International Committee of the Red Cross,
Geneva, Switzerland

2:30 – 3 p.m. Closing Remarks and Plans for 2011
Nursing Annex 161

Doug Heimburger, M.D., M.S.
Associate Director for Education and Training,
Vanderbilt Institute for Global Health
Professor of Medicine, Vanderbilt University School of Medicine

Colleen Conway-Welch, Ph.D., R.N., F.A.A.N.
Nancy & Hilliard Travis Professor of Nursing
Dean, Vanderbilt School of Nursing

Kelly McQueen, M.D., M.P.H.
Fellow, Harvard Humanitarian Initiative
Director, Graduate Medical Education for
Valley Anesthesiology Consultants, Ltd.
Adjunct Clinical Professor, Mayo Clinic Scottsdale

Speaker Bios (alphabetical)

Marco Baldan, D.D.S., M.D.

Head Surgeon, International Committee of the Red Cross, Geneva, Switzerland

Born in Padua, Italy, Marco Baldan graduated from Padua University in Italy with a degree in Dental Surgery in 1987 and a degree in Medicine in 1992. He completed specialized training in General Surgery from Padua University in 1997.

Since 1998, Dr. Baldan has worked extensively in developing and conflict-afflicted countries, serving as general surgeon and war surgeon for the International Committee of the Red Cross (ICRC) and Italian NGOs and missionary organizations in countries including Uganda, Kenya, Somalia, Liberia, Congo, Tanzania, Sudan, Iraq, Cambodia, Lebanon, Georgia, and Palestinian Territories.

From January 2002 through January 2005, Dr. Baldan served as the ICRC Regional Surgeon for the Africa Region, and as ICRC medical coordinator for Somalia from January to November 2005. He has worked as the Head Surgeon for the ICRC in Geneva, Switzerland since November 2005.

Dr. Baldan is the author of more than 50 publications, mainly on surgical topics.

Jeffrey R. Balser, M.D., Ph.D.

Vice Chancellor for Health Affairs
Dean, Vanderbilt University School of Medicine

Jeffrey R. Balser, a 1990 graduate of the Vanderbilt M.D./Ph.D. program in pharmacology, undertook residency training in anesthesiology and fellowship training in critical care medicine at Johns Hopkins. He joined the faculty at Johns Hopkins in 1995, initiating a basic research program aimed at the molecular pharmacology of cardiac arrhythmias. His clinical work has primarily involved the care of postoperative cardiac surgery patients in ICU settings. Dr. Balser moved to Vanderbilt in 1998, and served as Associate Dean for Physician Scientists. He established an intramural mentoring program for junior faculty physician scientists that has been a national model for centralized management of physician scientist career development, and is supported by the NIH. His research program has been aimed at the pharmacogenomics of cardiac arrhythmias. His studies in Nature, PNAS, and Nature Structural and Molecular Biology have established new paradigms for cardiac excitation-contraction coupling, and are yielding new targets for arrhythmia control.

In 2001, Dr. Balser was appointed the James Tayloe Gwathmey Professor and Chair of Anesthesiology, and was elected to the American Society for Clinical Investigation. Under his leadership, Vanderbilt anesthesiology scientific programs diversified to include NIH-funded programs in health services research and perioperative genomics, and the department advanced into the top 10 in NIH funding.

In 2001, Dr. Balser was appointed chair of the department of anesthesiology. Under his leadership, Vanderbilt anesthesiology clinical, educational, and scientific programs diversified and expanded, becoming a premier department nationally. In 2004, he became Associate Vice Chancellor for Research for the Vanderbilt Medical Center, overseeing enterprise-wide strategy, infrastructure, and investments in research during an expansion period where Vanderbilt moved into the top 10 in NIH funding. In October 2008, he was named Associate Vice Chancellor for Health Affairs and Dean of the Vanderbilt School of Medicine. He has chaired the NIH Director's Pioneer Awards, is a member of American Society of Clinical Investigation and the Association of American Physicians, and was recently elected to the Institute of Medicine of the National Academy of Sciences.

Kathleen M. Casey, M.D., F.A.C.S.

Director, Operation Giving Back, American College of Surgeons

Kathleen M. Casey, M.D., F.A.C.S., joined the American College of Surgeons in July 2004 as founding director of the Operation Giving Back Program. In this capacity, Dr. Casey has been responsible for the design, development, and implementation of the college's volunteerism initiative, which was created to facilitate surgical volunteerism at all levels of the surgical profession in both domestic and international arenas. Operation Giving Back reflects the humanitarian tenets that are central to the profession of surgery, and serves to recognize, connect, support, enable, and celebrate surgeons who are involved in humanitarian outreach.

Prior to joining the College's staff, Dr. Casey served 8 years as a general surgeon in the U.S. Navy, achieving the rank of Commander. Duty stations included Whidbey Island, WA, Okinawa, Japan, and Newport, RI. She was awarded the Humanitarian Service Medal for her contributions in Guatemala following the devastation of Hurricane Mitch. A Massachusetts native, she received a bachelor of arts from the College of the Holy Cross in Worcester, MA, taught high school chemistry and physics, and worked at the Boston Museum of Science before matriculating to Dartmouth Medical School. She completed her general surgery training at Virginia Mason Medical Center in Seattle, WA.

Dr. Casey welcomes those with an interest in surgical volunteering to visit the OGB website at www.operationgivingback.org and to contact her at kcasey@facs.org.

Colleen Conway-Welch, Ph.D., R.N., F.A.A.N.
Nancy & Hilliard Travis Professor of Nursing
Dean, Vanderbilt School of Nursing

Dr. Conway-Welch is dean and holds responsibilities as the chief executive officer of the Vanderbilt University School of Nursing, Nashville, Tennessee, a position she has held since 1984. Because of her international stature as a voice for the nursing profession, Dr. Conway-Welch has been previously called upon to serve on President Reagan's 1988 Commission on HIV, the 1998 Congressional National Bipartisan Commission on the Future of Medicare, the 2002 Advisory Council to Secretary Thompson on Public Health Preparedness and the DHHS Center for Medicare and Medicaid's Advisory Committee for Medicare Coverage. Conway-Welch is an elected member of the Institute of Medicine of the National Academy of Science, and in 2007, was appointed by President Bush to the Board of Regents of the Uniformed University of the Health Sciences. Her professional activities include serving on the board of directors of two registered public companies; Ardent Health Systems and RehabCare Group. Formerly, she served on the broad of directors of First Union Bank of Tennessee.

In her community role, she has served on and chaired the Board of Directors for the Nashville Symphony, chaired the "Report Card" Committee on Nashville Schools for the Nashville Area Chamber of Commerce and is a member of the Nashville Downtown Rotary. She also chaired the Middle Tennessee United Way annual campaign in 1999.

Gerald Dubowitz, M.D.
Assistant Professor, Department of Anesthesia, University of California at San Francisco

Gerald Dubowitz, M.D., is Assistant Professor in the Department of Anesthesia at the University of California San Francisco (UCSF) and Director of Regional Anesthesia at Mt. Zion Hospital in San Francisco. Dr. Dubowitz graduated from St. Andrews University in Scotland and trained at Manchester University Medical School in England. Dr. Dubowitz now practices clinical and academic anesthesia at UCSF. He is the co-founder and director of the non-profit organization Global Partners in Anesthesia and Surgery (GPAS). Dr. Dubowitz has extensive practical experience in global health, anesthesia and medical care. Through his work with GPAS, he is currently involved in a program based primarily in Uganda, which aims

to improve the delivery of health care in the developing world through academic affiliations, workforce expansion and capacity building. He also advises and consults with a number of nonprofit organizations.

Dr. Dubowitz has a long-term interest in improving medical care in the developing world and has worked in Africa, the South Pacific and Nepal. He is interested in the establishment of teaching programs for anesthesia in Africa and improvement of the delivery of peri-operative services.

Angela Enright, M.B., B.Ch., B.A.O., F.R.C.P.C.
Clinical Professor of Anesthesia, University of British Columbia, Canada
Professor of Health Sciences, University of Victoria, British Columbia, Canada
Chair of the Board of Trustees, Canadian Anesthesiologists' Society International Education Foundation

Born and raised in Ireland, Angela Enright attended medical school at the University College Dublin. In 1972, she emigrated to Calgary, Canada, where she received her anesthesia training. She was a Fellow of Royal College of Physicians and Surgeons of Canada in 1977.

From 1978 to 1999, Dr. Enright worked in Saskatoon, Saskatchewan, progressing through various positions including Residency Programme Director for Anesthesia, University of Saskatchewan; Chief of Anesthesia, Saskatoon City Hospital; Clinical Professor of Anesthesia, University of Saskatchewan; and President of the Canadian Anesthesiologists' Society (CAS) from 1994 to 1995.

In 1999, Dr. Enright moved to Victoria, British Columbia. Since then, she has held several positions, including Chair of the Organizing Committee of the 12th World Congress of Anesthesiologists in Montreal in 2000 and Chair of the Education Committee of the World Federation of Societies of Anesthesiologists (WFSA), which she chaired for 8 years. She has been highly engaged in education and overseas development and is currently serving a four-year term as President of WFSA (2008 - 2012). She is Chief of Anesthesia in Victoria, Medical Director for Anesthesia for Vancouver Island, Clinical Professor of Anesthesia at the University of British Columbia and Professor of Health Sciences at the University of Victoria. She was appointed as Chair of the Board of Trustees of the CAS International Education Foundation which has organized and runs a residency training programme in anesthesia in Rwanda. She is currently involved in the development of a similar training programme in Palestine. Dr. Enright is the recipient of several awards, including the 2003 Gold Medal of the Canadian Anesthesiologists' Society, the 2009 Gold Medal of the Irish College of Anesthetists, and the 2009 Award for Service to Medicine and Society from the Victoria Medical Society.

The Honorable William H. Frist, M.D.
Professor of Business and Medicine, Vanderbilt University
Chair, Hope Through Healing Hands

Doctor and Senator Bill Frist is both a nationally recognized heart and lung transplant surgeon and former U.S. Senate Majority Leader. Currently Professor of Business and Medicine at Vanderbilt University, he is uniquely qualified to discuss the challenges and solutions in health care policy. Senator Frist is consistently recognized among the most influential leaders in American health care and is one of only two individuals to rank in the top 10 of each of the five inaugural Modern Healthcare Magazine annual surveys of the most powerful people in health care in the United States.

Senator Frist majored in health policy at Princeton University's Woodrow Wilson School of Public and International Affairs before graduating with honors from Harvard Medical School and completing surgical training at Massachusetts General Hospital and Stanford. As the founder and director of the Vanderbilt Multi-Organ Transplant Center, he has performed over 150 heart and lung transplants and authored over 100 peer-reviewed medical articles and chapters, over 400 newspaper articles, and seven books on topics such as bioterrorism, transplantation, and leadership. He is board certified in both general and heart surgery.

Dr. Frist represented Tennessee in the U.S. Senate for 12, years where he served on both committees responsible for writing health legislation (Health and Finance). He was elected Majority Leader of the Senate, having served fewer total years in Congress than any person chosen to lead that body in history. His leadership was instrumental in passage of prescription drug legislation and funding to fight HIV at home and globally.

Today, Senator Frist is focused on domestic health reform, K-12 education reform, the basic science of heart transplantation, global health policy, economic development in low-income countries, children's health around the world, health care disparities, medical mission work in Sudan, the health of the mountain gorilla, and HIV/AIDS.

Frist currently serves on the Robert Wood Johnson Foundation's Commission to Build a Healthier America, which has directly linked better health to education. This along with other education research led him to create the Tennessee State Collaborative on Reforming Education (SCORE) in 2009, which is a statewide K-12 education initiative working to improve the level of education for Tennessee students.

Dr. Frist regularly leads annual medical mission trips to Africa. He is chair of Save the Children's "Survive to Five Campaign" and Nashville-based Hope Through Healing

Hands. His current board service includes the Kaiser Family Foundation, Millennium Challenge Corporation, Africare, the U.S. Holocaust Museum's Committee on Conscience, the Smithsonian Museum of Natural History, the Center for Strategic and International Studies, and the Harvard Medical School Board of Fellows.

Senator Frist was the 2007-2008 Frederick H. Schultz Professor of International Economic Policy at Princeton University's Woodrow Wilson School of Public and International Affairs. He is a partner in the private equity firm of Cressey and Company. Dr. Frist is married, has three sons, and lives in Nashville.

Douglas C. Heimburger, M.D., M.S.
Associate Director for Education and Training, Vanderbilt Institute for Global Health
Professor of Medicine, Vanderbilt University School of Medicine

Douglas C. Heimburger is Professor of Medicine and Associate Director for Education and Training in the Vanderbilt Institute for Global Health. He received his M.D. degree from Vanderbilt University in 1978, after which he completed a residency in internal medicine at St. Louis University and a fellowship and master's degree in clinical nutrition at the University of Alabama at Birmingham (UAB). He is a Physician Nutrition Specialist®, board-certified in internal medicine and clinical nutrition. From 1982 to 2009, he served on the faculty of the Departments of Nutrition Sciences and Medicine at UAB, where his titles included Senior Scientist in the UAB Clinical Nutrition Research Center, Comprehensive Cancer Center, and Center for AIDS Research; Director of the Clinical Nutrition Fellowship Program and the NIH-funded Cancer Prevention and Control Training Program; and Associate Director of the UAB Sparkman Center for Global Health. He served for 20 years as director of a required first-year medical school course in nutrition, for 18 years as Director of UAB's Medical Nutrition Services, and for 10 years as Medical Director of UAB's EatRight Weight Management Program. During a Fulbright Scholar award-supported sabbatical in Zambia from 2006 to 2007, he initiated nutrition research in a population of Zambians starting antiretroviral therapy for HIV/AIDS. He has served on the Advisory Board of the Fogarty International Center (NIH), the governing Council of the American Society for Clinical Nutrition, Initial Review Group Subcommittee for the National Cancer Institute, the U.S. FDA's Food Advisory Committee, and a Test Materials Development Committee for the United States Medical Licensing Examination.

Dr. Heimburger was involved in teaching nutrition at UAB and advocating for medical nutrition education around the country. He is the principal editor of a major nutrition text, the Handbook of Clinical Nutrition, whose 4th edition was published in 2006. He received the UAB President's Award for Excellence in

Teaching (1995), an American College of Physicians commendation as the Best Internal Medicine Board Review Course Faculty in Nutrition (1996), the American Society for Clinical Nutrition's Dannon Institute Award for Excellence in Medical/ Dental Nutrition Education (1999), and UAB School of Medicine's Argus Award for Best Course Director and/or Best Course (2005, 2006, 2007, & 2008). He founded and directed the Intersociety Professional Nutrition Education Consortium and the American Board of Physician Nutrition Specialists, and he currently directs the ABPNS national secretariat office.

Dr. Heimburger's principal research and publication interests are nutritional influences on responses to treatment for HIV/AIDS in developing countries, nutritional factors associated with cancer prevention, nutritional support of hospitalized patients, and medical nutrition education.

Bob Isherwood
Partner, i.e. Healthcare
Former Worldwide Creative Director, Saatchi & Saatchi

Australian-born Bob Isherwood is the former Worldwide Creative Director of Saatchi & Saatchi. For 12 years, Mr. Isherwood took ultimate responsibility for the communications ideas the company created for some of the world's major corporations, including Procter & Gamble and Toyota. He was, for example, the Global Creative Director responsible for the launch and mass marketing of Toyota's Prius.

Mr. Isherwood's work has been documented in many books and endorsed by the industry's most prestigious national and international award shows. He won Australia's first Gold Lion for cinema at the Cannes International Advertising Festival and is one of the few people to have ever won a British Design and Art Direction gold award for advertising. Mr. Isherwood has been elected to the Clio Hall of Fame in the U.S., and the Writers and Art Directors Hall of Fame in Australia.

Mr. Isherwood has served as President of the Film and Press and Poster juries at the Cannes International Advertising Festival. In 2007, he received the Clio Lifetime Achievement Award "in recognition of outstanding and ongoing contribution by an individual who is leading the industry forward." In December 2007, Mr. Isherwood received the first ever Honorary Doctorate in Communications from RMIT at a ceremony at the Melbourne Telstra Dome. In 2008, he was invited to contribute to the Australian Prime Minister Kevin Rudd's "Australia 2020" initiative.
In addition to his work with i.e.Healthcare (iehealthcare.com), most recently Mr.

Isherwood was Creative Chairman for the IAA/United Nations Climate Change Initiative. Mr. Isherwood is co-author of the book *World Changing Ideas.*

Angela D. Lashoher, M.D., M.P.H.
Resident, Johns Hopkins Department of Surgery
Technical Officer, World Health Organization Patient Safety

Dr. Angela Lashoher is currently a Technical Officer in the World Health Organization Patient Safety Programme. Dr. Lashoher received her B.A. in humanities from the University of Texas, Austin. During her undergraduate studies she was awarded a National Security Education Program grant to study in Senegal for one year and went on to obtain her M.D. from Baylor College of Medicine in Houston, Texas. Dr. Lashoher started her general surgery residency at Johns Hopkins Hospital in 2004. After completing the first three years of her surgical training she was awarded an NIH training grant to complete both an MPH and a doctorate of public health (Dr.P.H.) at Johns Hopkins School of Public Health. She is currently completing her Dr.P.H. degree and managing two checklist projects at WHO Patient Safety: the Trauma Care Checklist, a joint collaboration with the Department of Violence and Injury Prevention and Disability, and a Safe Childbirth Checklist, which is a collaboration with several other WHO departments. She will return to Johns Hopkins to complete her general surgery training in 2011. Dr. Lashoher is also the co-founder of Second Assist, an NGO with a mission to improve surgical care in low- and middle-income countries.

Kelly McQueen, M.D., M.P.H.
Fellow, Harvard Humanitarian Initiative
Director, Graduate Medical Education for Valley Anesthesiology Consultants, Ltd.
Adjunct Clinical Professor, Mayo Clinic Scottsdale

Kelly McQueen is an anesthesiologist and public health consultant in Phoenix, Arizona. Dr. McQueen practices anesthesia and is the Director of Graduate Medical Education for Valley Anesthesiology Consultants, Ltd. She is an Adjunct Clinical Professor at the Mayo Clinic Scottsdale and a Fellow at the Harvard Humanitarian Initiative (HHI). She has special interests in the global burden of surgical disease, the global anesthesia crisis and the provision of surgical care following disasters and in humanitarian crises. Dr. McQueen co-directs the Burden of Surgical Disease Working Group, an international group committed to improving global surgical access, delivery and outcome evaluation. She has been accepted for a Fulbright Senior Specialist Fellowship to examine the impact of surgery on the global burden of disease in an underserved area.

Dr. McQueen received a Bachelor of Arts degree in Biology from Colorado College, her M.D. from the University of Vermont College of Medicine, and a Masters of Public Health from the Harvard School of Public Health. She completed a residency in anesthesiology at the University of Arizona and the Mayo Clinic, and completed a fellowship in obstetrical anesthesia at the Mayo Clinic.

Dr. McQueen has published articles in peer reviewed journals, authored and co-authored numerous chapters on a variety of anesthetic topics, and has presented her research at national and international meetings throughout her career. She has also published two children's books, an elementary school curriculum for HIV/AIDS education, and an instructional video on HIV/AIDS for young children. While at the University of Vermont she was elected to the Alpha Omega Alpha Honor Medical Society, and her book, "What's a Virus Anyway? The Kid's Book about AIDS," won the Vermont Book Publishers Association Special Merit Award and the Benjamin Franklin Children's Book Award.

Dr. McQueen has had a career-long commitment to disaster response and humanitarian aid. She currently pursues this work through the Harvard Humanitarian Initiative, serves on the ASA Global Humanitarian Outreach Committee, and directs the Global Surgical Consortium, a non-profit organization dedicated to improving surgical infrastructure in low income countries. She has volunteered for more than 20 years for a number of humanitarian organizations including the American Society of Anesthesiology's Overseas Teaching program in Tanzania; Operation Smile in China, Jordan, Brazil, Peru, Mexico and Haiti; and for Doctors without Borders in Sri Lanka. In 2005, Colorado College honored Dr. McQueen with the Benezet Lifetime Achievement Award for her humanitarian work.

Jeff W. Morrill, MBA
President and Chief Executive Officer, NuOrtho Surgical, Inc.

Mr. Morrill is a founding partner of NuOrtho Surgical, Inc., a medical device company. NuOrtho is focused on Tissue Preservation™ for the orthopedic market. He molded and built NuOrtho from a few issued patents including their bone fusion technology. The company has raised several million dollars under Morrill's guidance to support their differentiate value proposition. Previously, Mr. Morrill was Chief Marketing Officer for Vectrix, an internationally-funded start-up company, and he has served as Director of Marketing at DePuy Mitek, Inc., a Johnson & Johnson company, leading the entry into the $2B Capital Equipment category with differentiated brands. He has also served in various senior Marketing and Sales roles at Johnson & Johnson's McNeil Consumer Healthcare, managing Tylenol,

Motrin, the Borden Food Company, and Nestle. He has broad experience in creating new products, innovative business models, and commercializing products worldwide. He received his MBA from DePaul University and his Bachelor of Arts from Lafayette College.

Mark W. Newton, M.D.
Associate Professor of Clinical Anesthesiology,
Vanderbilt University School of Medicine
Director, Vanderbilt International Anesthesia
Director, Kenya Registered Nurse Anaesthesia, Kijabe Hospital, Kenya

Mark W. Newton, M.D., F.A.A.P., is Director of Kenya Registered Nurse Anaesthesia (KRNA) at Kijabe Hospital in Kenya. He is the Director of Vanderbilt International Anesthesia (VIA) and a Pediatric Anesthesiologist at Vanderbilt Children's Hospital.

Dr. Newton has been involved for over 10 years in anesthesia development in East Africa, where he lives full-time with his wife, Sue, and their five children. He has developed a training program approved by the Government of Kenya to train nurses at Kijabe Hospital for the rural anesthesia care of Kenya. Kijabe Hospital is a surgical leader in the East African region and along with others, trains national surgeons in many areas. He is a faculty member of the University of Nairobi, Department of Surgery (Anaesthesia) where he is involved in physician anesthesia training, CME, and national anesthesia development programs with the Kenyan physician anesthesia leadership. From his family base in Kenya, Dr. Newton has traveled to many areas in Africa (S. Sudan, Somalia, UN Refugee Camps, and Ethiopia) for "surgical safari" trips, which include education and clinical care. He has been a part of Vanderbilt Institute of Global Health and Vanderbilt International Anesthesia (VIA) developing exposure for anesthesia residents and staff as well as research project(s) development.

Andy Norman, M.D.
Assistant Professor of Obstetrics and Gynecology,
Vanderbilt University School of Medicine

Andy Norman is Assistant Professor of Obstetrics and Gynecology at the Vanderbilt University School of Medicine, specializing in Urogynecology and Pelvic Reconstructive Surgery. A graduate of the Medical College of Georgia, Dr. Norman was awarded a fellowship in Urogynecology and Pelvic Surgery in the Department of Obstetrics and Gynecology at the University of Alabama – Birmingham.

Dr. Norman has special expertise in vesico-vaginal fistula (VVF) repair in resource-

limited settings. He spent 13 years working and teaching family medical practice to residents in Nigeria. He served as Director of Obstetric and Gynecological Services at a 200-bed general hospital in Nigeria where his workload included supervision of obstetrics, ambulatory gynecology, and gynecologic surgery. During that time, he provided surgical repairs to women with VVF.

Over the past 5 years, he has provided training in VVF surgery for surgeons and OR techs in Cameroon, Bangladesh, Ghana, Uganda, Southern Sudan, Nigeria, and Liberia through 2 to 3-week-long urogenital fistula repair workshops. Dr. Norman is currently working with the Ghanaian Ministry of Health to help establish a VVF unit in northern Ghana (Tamale). Dr. Norman has been accepted for a Fulbright Senior Specialist Fellowship and will spend 6 weeks in northern Ghana in the spring of 2010.

Adeyemi J. Olufolabi, M.D.
Associate Professor, Division of Women's Anesthesia, Department of Anesthesiology, Duke University Medical Center

Adeyemi (Yemi) Olufolabi, M.B.B.S., is Associate Professor in the Department of Anesthesiology at Duke University Medical Center in Durham, NC. He received his M.D. from the University of Ibadan, Nigeria, and completed his residency in Anesthesiology at Southampton University Hospital in England. His research interests include obstetric and gynecological anesthesia research and improving the quality of pain control in both the labor wards and the gynecological surgical population.

Along with Dr. Medge Owen, Dr. Olufolabi is leading a project in Ghana to reduce maternal and neonatal mortality by working with a multidisciplinary team of anesthesiologists, obstetricians, neonatologists, midwives, labor and delivery nurses, and operating room managers. Efforts have focused on creating a center of excellence in Ridge Hospital, Accra. Numerous achievements have been accomplished to date, the most notable of which is a 21% reduction in maternal mortality and 30% reduction in stillbirths.

Medge Owen, M.D.
Professor of Obstetric Anesthesiology, Wake Forest University Baptist Medical Center

Dr. Medge Denise Owen is a Professor of Obstetric Anesthesia at Wake Forest University in Winston-Salem, NC. She earned a medical degree at the University of Kansas in 1989 and she completed residency at the University of Missouri-St. Luke's Hospital in Kansas City, MO. She has been on faculty at Wake Forest University since 1994. As an academician, she has published numerous clinical and

basic science-related research articles and recently co-authored the first textbook of obstetric anesthesia in Turkey.
Dr. Owen uses her medical training and passion for foreign travel to work worldwide improving maternal and newborn safety during childbirth. Owen was a Fulbright Scholar in Turkey from 1997 to 1999 and helped establish an obstetrical anesthesia service at Uludug University in Bursa, Turkey.

In 2001, Dr. Owen established a non-profit organization, Kybele, Inc., to promote education in obstetric anesthesia and neonatal resuscitation. In April 2004, she was asked to join the Obstetric Anesthesia committee of the World Federation Societies of Anesthesia, as one of only two U.S. committee members. In addition, she spearheaded and chaired the International Outreach Committee for the Society for Obstetric Anesthesiology and Perinatology.

Robert Riviello, M.D., M.P.H.
General Surgeon, Brigham and Women's Hospital

Robert Riviello, M.D., is an Acute Care and Burn Surgery fellow at Brigham and Women's Hospital. Robert went to the University of California School of Medicine in San Diego, did his M.P.H. at Harvard School of Public Health, and completed his General Surgery Residency at Vanderbilt University Medical Center and his Fulbright Global Surgery Fellowship at Centro Evangélico de Medicina do Lubango in Angola. Robert plans to make his life's work bridging academic surgery in the U.S. with African training institutions in an effort to increase access to quality surgical care for poor patients in Africa. He is a Faculty Member of the Global Health Delivery (GHD) Project, based in Boston, MA.

Emmanuel Srofenyoh, M.D.
Director of Obstetrics and Gynecology, Ridge Regional Hospital, Accra, Ghana

A native of Ghana, Emmanuel K. Srofenyoh is the director of the Department of Obstetrics and Gynecology at Ridge Regional Hospital in Accra, Ghana. He is also chairman of the Maternal Mortality Audit Committee and the Maternal Delivery Exemption Committee. He is a member of the Regional Maternal and Perinatal Mortality Investigative Committee and the Ghana National Malaria Control Committee. Dr. Srofenyoh has consulted for numerous NGOs in Ghana and his professional interests include reproductive endocrinology and the management of infertility, ultrasonogram, and the management of high-risk pregnancies. He earned his medical degree from the West African College of Surgeons and has received additional training at The Royal College of Obstetricians and Gynaecologists in London and Royal Hallamshire Hospital in Sheffield, England.

Michael Stabile, M.D., MBA
Head of Anesthesia Council, Operation Smile International
Partner, Anesthesia Medical Group, LLC
Quality and Safety Committee, World Federation of Societies of Anaesthesiologists

Dr. Mike Stabile is Chief Medical Officer and serves as Chairman of Safer Sleep, LLC's Medical Advisory Board, which is responsible for providing clinical and anesthesia market assessments. Dr. Stabile co-founded Safer Sleep, LLC.

Dr. Stabile trained in medicine and anesthesiology at Harvard Medical School and Beth Israel Hospital in Boston and subsequently spent a year as Chief Resident/ Senior Registrar at Prince Henry Hospital in Sydney, Australia. He is a founding partner of one of the largest anesthesia practices in the U.S. and currently serves as adjunct Clinical Professor of anesthesiology at the Vanderbilt University School of Medicine. In his career, Dr. Stabile has administered over 25,000 anesthetics.

Dr. Stabile earned an MBA from Belmont University in Nashville and has been involved with health care start-ups Medquant and Nursing Resource Solutions. He is the author of several medical papers, book chapters and newspaper articles on the subjects of anesthesia and safety.

Dr. Stabile served as a visiting Professor of Anesthesiology at St. Louis University in 2003. He has worked as a volunteer on over 10 international Operation Smile missions, twice serving as team leader. Dr. Stabile is on the Operation Smile Anesthesia Council and serves as the Nashville Chapter President. He recently served on the Nashville Academy of Medicine Board of Directors.

John L. Tarpley, M.D.
Professor of Surgery, Assistant Chief of Surgical Service,
Department of Veterans Affairs Medical Center
Program Director, General Surgery Residency,
Vanderbilt University School of Medicine

Born in Nashville, TN, John L. Tarpley grew up in Jackson, MS, and received his bachelor of arts and M.D. degrees from Vanderbilt University. Dr. Tarpley did his residency training in general surgery at Johns Hopkins Hospital in Baltimore which included two years at the NCI, Surgery Branch as a Clinical Associate. In 1993, he joined the faculty of the Vanderbilt Department of Surgery, where he is Professor of Surgery and Program Director of the general surgery residency program. Dr. Tarpley's clinical practice is confined to the VA where he is Chief, General Surgery. A Shovel Awardee in 2004, Dr. Tarpley serves as a Master Clinical Teacher in the

medical school. After residency, and prior to his return to Vanderbilt, Dr. Tarpley served at the Baptist Medical Centre, Ogbomoso, Nigeria, from 1978-1993 as surgeon, director of the general practice residency, and as Associate Lecturer in Surgery at the University of Ibadan with a focus on medical student education. He spent 4 years on the faculty of the Johns Hopkins Department of Surgery and the Loch Raven (Baltimore) VAMC during that 15-year period and is currently president of the Johns Hopkins Medical & Surgical Association. Esophageal cancer, hernia treatment, international health, history of medicine, and the role of spirituality in clinical medicine are areas of particular interest; he is involved with medical school electives for the latter three topics. Each year he spends several weeks in Ogbomoso, Nigeria, as a surgical volunteer. He is currently the president-elect of the Association of Program Directors in Surgery and vice-president of the Association of VA Surgeons.

Theo Vos, M.Sc., Ph.D.

Director, Centre for Burden of Disease and Cost-Effectiveness, School of Population Health, University of Queensland, Australia

Theo Vos spent the first 9 years of his career as a doctor in district hospitals in Lesotho and Zimbabwe. He went on to pursue an M.Sc. in Public Health in Developing Countries at the London School of Hygiene and Tropical Medicine, after which as a staff member, he spent 3 years leading the Mauritius Burden of Disease Study. In 1997 he moved to Australia to work for the Victorian Department of Human Services and carried out the Victorian Burden of Disease study as well as two economic evaluation studies: ACE-Heart Disease and ACE-Mental Health.

Dr. Vos currently is Director of the Centre for Burden of Disease and Cost-Effectiveness at the School of Population Health of the University of Queensland. The Centre aims to provide health policy makers with the best available evidence to guide the allocation of resources. Dr. Vos has made major contributions to the national Australian study and studies in Zimbabwe, Thailand, South Africa and Malaysia. He is leading the update of the Australian Burden of Disease study including a first-ever indigenous study. He is currently directing two large economic evaluation projects: a) the ACE-Prevention project, which over the coming 5 years will model the cost-effectiveness of 100 prevention options for non-communicable disease in Australia; and b) the SPICE project in Thailand examining intervention options for HIV/AIDS and tuberculosis, mental disorders, lifestyle risk factors and road traffic injuries.

Thomas G. Weiser, M.D., M.P.H.
Surgical Resident, Brigham and Women's Hospital
Research Fellow, Harvard School of Public Health

Thomas G. Weiser is a surgical resident at the Brigham and Women's Hospital and a research fellow at the Harvard School of Public Health. He has worked in hospitals in South America and Africa, where he developed an interest in improving health care provision in developing countries, particularly as they relate to surgical services. He has been involved in surgical program assessment projects in a number of countries, including Cambodia, India, the UK, and the United States. From 2006 to 2009, Dr. Weiser worked on the World Health Organization's Safe Surgery Saves Lives program which aims to improve the safety of surgical care around the world.

Charles Woodrow, M.D.
Fellow, American College of Surgeons

Charles L. Woodrow, M.D., is a Mozambique-based general surgeon and a fellow of the American College of Surgeons. He received his M.D. from Vanderbilt University Medical School in 1978 and completed his surgical training at Wilford Hall Medical Center at Lackland Air Force Base in Texas. He served in the Air Force at Edwards Air Force Base in Lancaster, California for 4 years.
He and his family have lived in Mozambique since 1990. Working in a government hospital, he oversaw a surgical block which performed close to 100 operations per month to patients from across the country. Recently, his efforts have been focused on establishing a surgical center in Nampula, Mozambique. The $1 million facility is nearing completion.

2010 Burden of Surgical Disease Bibliography

Highlights of 2009-2010

1. Bemudez L, Carter V, et al. Surgical Outcomes Auditing Systems in Humanitarian Organizations. *World J Surg* 2010;34(3):403-10.

Operation Smile developed a cleft surgery outcomes database and evaluation system using pre- and post-operative photographs that were reviewed by independent evaluators. Twenty percent of patients returned for one-year postoperative visits, which were completed by local foundations, and their photographs were sent to the organization's international headquarters. Outcomes data was returned to the mission teams and individual surgeons about the patients on whom they had operated one-year prior. Five hundred eighty procedures were evaluated and feedback reports were provided to 134 volunteer surgeons. The authors note that this method enabled evaluation of cosmetic outcomes, but not outcomes involving feeding, breathing, or hearing.

2. Bickler S, Ozgediz D, et al. Key concepts for estimating the burden of surgical conditions and the unmet need for surgical care. *World J Surg* 2010;34(3):374-80.

The paper proposes key terminology for analyzing surgical care from a public health perspective and outlines a conceptual framework for estimating the burden of surgical conditions and need for surgical care. Cumulative surgical Disability Adjusted Life Years (DALYs), which measure the burden of surgical conditions, can be calculated using disability weights (DW) and values for surgical care (VSC), accounting for age-specific cumulative risk of surgical disease. The impact of surgical care, or "met need," is determined as surgical DALYs averted.

3. Bickler S.W, Spiegel D. Improving surgical care in low- and middle-income countries: a pivotal role for the World Health Organization. *World J Surg* 2010;34(3):386-90.

The WHO has expanded its interest in surgical care and is strategically placed to promote and develop safe and timely surgical care. The authors propose two steps to move the surgical agenda forward: 1. A World Health Assembly amendment confirming the critical role of emergency and essential surgery within the health system, and 2. Promotion of "structured collaborations" between WHO and other stakeholders in the form of sponsored WHO fellowships, research, and involvement in Emergency and Essential Surgical Care (EESC) workshops in low and middle-income countries (LMICs).

4. Chu K, Rosseel P, et al. Surgeons Without Borders: A Brief History of Surgery at Médicins Sans Frontières. *World J Surg* 2010;34(3):411-14.

Médicins Sans Frontières (MSF) began in 1981 by providing humanitarian aid to war refugees. One of the organization's strengths is its supply chain, by which it has the ability to set up major operating facilities within 48 hours in remote areas using large pre-packaged surgical kits. MSF surgeons perform vascular, obstetrical, orthopedic, and other specialized surgical procedures. MSF also provide surgical care in post-conflict contexts and occasionally trains local practitioners in anesthesia and basic surgery to build local capacity. The organization acknowledges that the long-term solution to alleviating the global burden of surgical disease lies in building a domestic surgical workforce and infrastructure; however, the organization plays a critical role in providing relief during acute emergencies.

5. Corlew DS. Estimation of Impact of Surgical Disease Through Economic Modeling of Cleft Lip and Palate Care. *World J Surg* 2010;43(3):391-6.

The economic impact of cleft repair in a developing country is modeled using data from 568 patients receiving surgical cleft care by the NGO Interplast in Katmandu, Nepal. Using Gross National Income (GNI) per capita, cleft repair added $856-$6,598 (cleft lip) and $2,293-$17,278 (cleft palate) to lifetime individual income. Using the more liberal Value of a Statistical Life, potential economic gains were $56,919-$143,363 (cleft lip) and $152,372-$375,412 (cleft palate). The cost of care per DALY averted was $29-73 USD.

6. Dubowitz G, Detlefs S, et al. Global Anesthesia Workforce Crisis: A Preliminary Survey Revealing Shortages Contributing to Undesirable Outcomes and Unsafe Practices. *World J Surg* 2010;34(3):438-44.

A pilot Internet-based survey was conducted to estimate per-capita anesthesia providers in low and middle income countries. Based on responses from workers in 14 countries, most low and low middle income countries have less than 1 anesthesia provider per 100,000 people, ranging from Yemen with 0.07 providers/100K to Swaziland with 1.41/100K.

7. Gosselin RA, Maldonado A, et al. Comparative Cost-Effectiveness Analysis of Two MSF Surgical Trauma Centers. *World J Surg* 2010;34(3):415-9.

Cost-effectiveness of surgical care provided by MSF in two of their surgical trauma hospitals (Teme hospital in Nigeria and La Trinite Hospital in Haiti) during a three-month period was evaluated using the Global Burden of Disease methodology. The costs were $172 (Nigeria) and $233 (Haiti) per DALY averted. These values are compared with cost-effectiveness analyses for surgical and non-surgical services in other countries.

8. Kushner AL, Cherian MN, et al. Addressing the millennium development goals from a surgical perspective: essential surgery and anesthesia in 8 low- and middle-income countries. *Arch Surg* 2010;145(2):154-9.

A survey of 132 district-level health facilities in 8 LMICs was conducted to assess the availability of infrastructure, supplies, and procedures relating to surgical and anesthetic interventions for the reduction of child mortality (MDG 4), improvement of maternal health (5), and reduction in HIV/AIDS transmission (6). The surveys included site visits, on-site inspections, and interviews with key personnel. Most facilities demonstrated shortfalls in basic infrastructure (water, electricity, oxygen) and functioning anesthesia machines. Less than half were capable of performing modest-complexity operations including cesarean sections and appendectomies or life-saving emergency surgical procedures such as cricothyroidotomy and chest tube insertion. Few facilities consistently had appropriate protective attire for operating room staff.

9. Magee WP, Vander Burg R, et al. Cleft Lip and Palate as a Cost-effective Health Care Treatment in the Developing World. *World J Surg* 2010;34(3):420-7.

The cost-effectiveness of cleft lip and palate repairs by the nonprofit organization Operation Smile is analyzed using two methods. Using the Disease Control Priorities Project (DCP1) Life Tables, which suggest that the entire burden of a cleft lip/palate is incurred within the first 4 years of life, the cost per DALY averted range from $278-$1827. Based on the observation that

older children with clefts suffer from teasing, poor self-esteem, and decreased educational opportunities, the authors propose a modification to the Life Tables that reflects disability associated with these deformities for the entire life span, yielding a cost per DALY averted of $8-$96.

10. McQueen KA, Hyder JA, et al. The provision of surgical care by international organizations in developing countries: a preliminary report. *World J Surg* 2010;34(3):397-402.

This article describes an Internet-based survey of International Organizations (IOs) delivering surgical care in developing nations. Forty-six organizations (response rate 46%) provided 223,425 cases per year. Most organizations routinely collect data on surgical volume, case mix, and outcomes. The majority of IOs integrate with the referral patterns of local providers, incorporate these practitioners into their organization's delivery of care, and have provisions for follow-up care in place. Eighty-nine percent reported that they incorporate education and training into their missions.

11. McQueen KA, Parmar P, et al. Burden of Surgical Disease: Strategies to Manage an Existing Public Health Emergency – Report of the 2009 Humanitarian Action Summit Working Group. *Prehospital and Disaster Medicine* 2009;24(4):228-31.

Proceedings of a Burden of Surgical Disease Working Group meeting during the 2009 Harvard Humanitarian Initiative's Humanitarian Action Summit (HHI/HAS). The group discussed results of an online surgery of 100 International Organizations (IOs) that provide surgical services globally. They made the following recommendations for improved surgical service delivery by humanitarian organizations: 1. Understand the local needs and resources; 2. Incorporate best practices into ongoing delivery of surgical care including infrastructure, safety checklists, and appropriate follow-up; and 3. Integrate routine collection of data on surgical conditions and outcomes.

12. Mock C, Cherian M, et al. Developing priorities for addressing surgical conditions globally: furthering the link between surgery and public health policy. *World J Surg* 2010;34(3):381-5.

The authors propose preliminary methods for defining global priorities in surgical care and suggest examples of surgical conditions that may fit in each priority group. Priority 1 surgical conditions have a large public health burden for which there is a highly successful surgical procedure that is cost-effective and globally feasible. The authors assert that identification of priority surgical conditions could inform and direct national and international public health efforts. They caution against vertical approaches to addressing specific surgical conditions, instead promoting comprehensive surgical capacity-building.

13. Newton M, Bird P. Impact of Parallel Anesthesia and Surgical Provider Training in Sub-Saharan Africa: A Model for a Resource-poor Setting. *World J Surg* 2010;34(3):445-52.

A training program for surgeons and anesthesia providers was developed in rurally-located Kijabe Hospital in Kenya to meet the surgical needs of rural Kenyan patients. The anesthesia program emphasizes obstetric, trauma, pediatric, and regional anesthesia based on the

epidemiology of surgical conditions and available resources in rural Africa. In the past 10 years, 18 RNs have been recruited from rural health centers, trained as nurse anesthetists in a 15-18-month program at Kijabe Hospital, and returned to their rural communities. Fifty-five intern-level surgeons have been trained in the specialties of general surgery, obstetrics/gynecology, and orthopedics. During this time the surgical caseload at Kijabe Hospital has increased four-fold, and case complexity has subjectively increased.

14. Nthumba PM "Blitz surgery:" redefining surgical needs, training, and practice in sub-Saharan Africa. *World J Surg* 2010;34(3):433-7.

The author argues that reconstructive operations performed during surgical "blitzes" (short trips by individuals and organizations to developing countries) have poorer outcomes than local, in-hospital procedures, primarily because of inadequate preoperative and postoperative care. The "blitz" approach neglects a significant majority of the population and promotes community dependence on unsustainable services. The author envisions a new reconstructive surgical service tailor-made for Africa that is affordable and sustainable yet able to deliver quality surgical care to the remotest villages through involvement of local communities and the training and retention of local surgeons.

15. Perkins RS, Casey KM, et al. Addressing the Global Burden of Surgical Disease: Proceedings from the 2nd Annual Symposium at the American College of Surgeons. *World J Surg* 2010;34(3):371-3.

The article introduces the GBoSD Working Group and highlights papers presented during the 2009 ACS Clinical Congress in Chicago.

16. Riviello R, Ozgediz D, et al. Role of Collaborative Academic Partnerships in Surgical Training, Education, and Provision. *World J Surg* 2010;34(3):459-65.

Six partnerships between North American academic medical centers and teaching hospitals in developing countries are discussed. Drawing from these examples, the authors emphasize the importance of relationship-building, mutual learning, support of local "advocates," prioritizing local training needs over expatriate training needs, research collaborations, adaptation of the mission to locally expressed needs, multidisciplinary approaches, and measurement of outcomes.

17. Rosseel P, Trelles M, et al. Ten years of experience training non-physician anesthesia providers in Haiti. *World J Surg* 2010;34(3):453-8.

Authors discuss Médicins Sans Frontières (MSF) nurse anesthetist (NA) training program, which graduated 24 students between 1998 and 2008. The program was 15-18 months long and was coordinated by expatriate anesthesiologists. Of graduates, 79% continue to work as NAs in Haiti (63% in private hospitals, 26% public, 16% mixed). Challenges to this program include lack of sustainability due to the NGO funding and administering the program, lack of acceptance by Haitian anesthesiologists and medical professional societies, and inadequate remuneration for NAs working in the public sector.

18. Taira BR, Cherian MN, et al. Survey of emergency and surgical capacity in the conflict-affected regions of Sri Lanka. *World J Surg* 2010;34(3):428-32.

Forty-seven hospitals in the conflict affected areas of northern and eastern Sri Lanka were surveyed using the WHO Tool for Situational Analysis to Assess Emergency and Essential Surgical Care (EESC). The data set was further limited to the thirty-one respondents from district and base hospitals (first level of care). Most facilities had water and about half had consistent electricity. Forty-eight percent had an OR and 57% had medical officers trained to perform basic surgical procedures. There were two surgeons and two OB/Gyn physicians among all 31 hospitals surveyed. All first-level facilities referred patients requiring laparoscopy and most referred for hernia repair. Twenty-four percent referred for incision and drainage, usually because of lack of supplies. Forty-five percent of facilities did not have supplies to start an intravenous infusion.

19. Weiser TG, Makary MA, et al. Standardized metrics for global surgical surveillance. *Lancet* 2009;374(9695):1113-7.

The WHO Safe Surgery Saves Lives initiative developed measures for assessing structure, volume, and outcome of surgical services at a national level, which included the following: number of operating rooms, number of operations, number of accredited surgeons, number of accredited anesthesia professionals, day-of-surgery death ratio, and postoperative in-hospital death ratio. One hospital in each of eight different countries was asked to provide this information retrospectively. All hospitals were able to report on each of these measures, although they had most difficulty reporting the outcome measures, as this often required cross-referencing of death registries with surgical records.

Spotlight on Haiti

1. Devi S. Helping earthquake-hit Haiti. *Lancet* 2010;375(9711):267-8.

The author discusses medical priorities immediately after the quake, which included triage, stabilization of the wounded, and referrals for surgical needs. Accordingly, organizers sought assistance from trained surgeons with experience working in war or disaster zones.

2. Ivers LC, Cullen K. Coordinating and Prioritizing Aid in Haiti. *N Engl J Med* 2010;362(7):e21. (Epub)

The authors remind readers that in addition to persistent surgical needs in Haiti, particularly for advanced orthopedic care, the international community should also anticipate intermediate and long-term needs, which will include postoperative care, physical therapy, prosthetics, and mental health interventions.

3. Pape JW, Johnson WD, Jr., et al. The Earthquake in Haiti – Dispatch from Port-au-Prince. *N Engl J Med* 2010;362(7):575-7.

The authors from the Haitian Group for the Study of Kaposi's Sarcoma and Opportunistic Infections (GHESKIO), whose clinic became a US Department of Health and Human Services field hospital, assert that more than 95% of the medical problems seen in the first week after the quake were trauma-related. They expressed concerns related to security, availability of supplies, and the need for an inventory of hospital-capacity as well as a way to inform the population of what services are available and what hospitals.

4. Sullivan SR, Taylor HO, et al. Surgeons' Dispatch from Cange, Haiti. *N Engl J Med* 2010;362(7):e19. (Epub)

A surgeon working in the Cange free clinic (run by Partners in Health and Zanmi Lasante) describes his team's efforts to provide surgical care in the aftermath of the earthquake. The team of five surgeons and local staff performed 122 operations in their first 9 days. The most common injuries requiring surgical care included crush injuries, fractured limbs, compartment syndromes, and massive wounds. Heparin prophylaxis protocols and dialysis services were established after several cases of pulmonary emboli and renal failure secondary to rhabdomyolysis were identified. The author notes that months to years of ongoing surgical and postoperative care will be needed to deal with the injuries inflicted by this disaster.

Training (The Workforce in Developing Countries)

1. Cameron BH, Rambaran M, et al. International surgery: the development of postgraduate surgical training in Guyana. *Canadian J Surg* 2010;53(1):11-6.

The University of Guyana developed a 2.5 year surgical training program in collaboration with the Canadian Association of General Surgeons (CAGS), who assisted with needs assessment, curriculum development, Ministry of Health (MOH) approval, funding, and creation of an evaluation system for residents-in-training. Residents were trained by Guyanese and visiting Canadian surgical faculty coordinated through CAGS.

2. Degiannis E, Oettle GJ, et al. Surgical education in South Africa. *World J Surg* 2009;33(2):170-3.

Key features of surgical training in South Africa are outlined. After completing undergraduate training, students do a two-year internship in an accredited hospital, followed by one year of community service in a rural hospital where they function independently. They can then train as residents in general surgery for 4-6 years. Trainees are required to take a series of written and oral examinations, keep a logbook of their cases, and achieve first authorship on a publication in a peer-reviewed journal. They can then choose to do two years of subspecialty training. Systemic challenges identified include non-uniform examinations, tension regarding the state Department of Health's role in employing clinical academics, and "brain drain" to other countries and the private sector.

3. Ezeome E.R, Ekenze SO, et al. Surgical training in resource-limited countries: moving from the body to the bench – experiences from the basic surgical skills workshop in Enugu, Nigeria. *Trop Doct* 2009;39(2):93-7.

Basic surgical skills training (BSS) was introduced into a Nigerian teaching hospital via a collaboration between surgical organizations and a corporate sponsor. The project leaders assert that with a dedicated team of local faculties, giving the local medical trainers a short introduction to the practicalities of organizing and conducting BSS is enough to jump start such a program in resource-poor countries.

4. Luboga S, Galukande M, et al. Recasting the role of the surgeon in Uganda: a proposal to maximize the impact of surgery on public health. *Trop Med Int Health*

2009;14(6):604-8.

The authors argue that the clinical and educational role played by surgeons in developing countries must be redefined, with the surgeon assuming a greater role in leadership, management, and public health advocacy by documenting the unmet need for surgery and the resources required to improve access to care.

5. Monjok E. The neglect of the global surgical workforce: experience and evidence from Uganda. *World J Surg* 2009;33(1):150-1; author reply 152-3.

This general practitioner and administrator shares a possible solution employed in Mozambique. Through short postgraduate training programs (18 months), the country trains "técnicos de cirurgia," to increase surgical services in rural populations.

6. Riviello R, Ozgediz D, et al. Role of Collaborative Academic Partnerships in Surgical Training, Education, and Provision. *World J Surg* 2010;34(3):459-65.

Six partnerships between North American academic medical centers and teaching hospitals in developing countries are discussed. Drawing from these examples, the authors emphasize the importance of relationship-building, mutual learning, support of local "advocates," prioritizing local training needs over expatriate training needs, research collaborations, adaptation of the mission to locally expressed needs, multidisciplinary approaches, and measurement of outcomes.

7. Sani R, Nameoua B, et al. The impact of launching surgery at the district level in Niger. *World J Surg* 2009;33(10):2063-8.

This article describes and evaluates an initiative to provide surgery in district hospitals via a 12-month basic surgery training program for rural general practitioners. After implementation of the program, 544 operations were done in one year in three district hospitals located in the same region. Thirty-eight percent were emergent (70% were cesarean sections and 8% were done for uterine rupture) and 62% were elective (81% were hernia repairs). Transfers to the regional hospital were reduced from 82% to 52% one year post-intervention, after which most transfers were for fractures and abdomino-thoracic trauma. There were no deaths from elective surgery at the district level and the morbidity rate was comparable to the regional hospital. All physicians trained in the program remained at their posts at the time of publication.

Access to Surgical Care

1. Carson PJ. Providing specialist services in Australia across barriers of distances and culture. *World J Surg* 2009;33(8):1562-7.

The author describes provision of specialist surgical services to patients in the geographically and culturally isolated Northern Territory of Australia. In lieu of transporting patients long distances to provide subspecialty surgical care, general surgeons in these remote areas receive additional training in a breadth of surgical subspecialties, and also maintain ongoing communication with specialist surgeons residing in the more populous southern area of the country

2. Ryan SM, Milsom P, et al. Travelling surgeons – a clinical audit of laparoscopic cholecystectomy procedures in Northland, New Zealand. *N Z Med J*

2009;122(1305):34-40.

Laparoscopic cholecystectomy (LC) in remote Northland, New Zealand is performed by traveling surgeons. A retrospective audit of 149 LCs using this model revealed low complication rates commensurate with international standards.

Training (U.S. Residents/Fellows)

1. Jayaraman SP, Ayzengart AL, et al. Global health in general surgery residency: a national survey. *J Am Coll Surg* 2009;208(3):426-33.

This reports on a nationwide survey of U.S. residency program directors regarding the nature and scope of their programs' involvement in global surgery. Of the 73 programs that responded, 33% offered educational activities in global health, most of which consisted of clinical rotations. Expressed goals of the programs were to prepare residents for careers in global health and working with underserved communities and to improve resident recruitment. Fifty-seven percent with no current program expressed interest in global surgery programs and cited time constraints, lack of approval from the ACGME or RRC, and funding as barriers to developing such programs. Sixty-seven percent of those with programs reported that there was no active reciprocal relationship with their partner institutions.

2. Ozgediz D, Wang J, et al. Surgical training and global health: initial results of a 5-year partnership with a surgical training program in a low-income country. *Arch Surg* 2008;143(9):860-5;discussion 865.

The article discusses the global health activities of surgical residents and faculty from UCSF before and after development of a formalized relationship with Makerere University in Kampala, Uganda in 2003. Before 2003, 4 faculty and 1 resident made overseas trips. Since establishment of the program, 10 residents and 12 faculty members have been involved with the Ugandan training program. Challenges to increased involvement are discussed – these include limited funding, lack of a clear faculty advancement pathway, and lack of RRC approval for resident clinical activities overseas.

Metrics, Quality, & Outcomes

1. Bemudez L, Carter V, et al. Surgical Outcomes Auditing Systems in Humanitarian Organizations. *World J Surg* 2010;34(3):403-10.

Operation Smile developed a cleft surgery outcomes database and evaluation system using pre- and post-operative photographs that were reviewed by independent evaluators. Twenty percent of patients returned for one-year postoperative visits, which were completed by local foundations, and their photographs were sent to the organization's international headquarters. Outcomes data was returned to the mission teams and individual surgeons about the patients on whom they had operated one-year prior. Five hundred eighty procedures were evaluated and feedback reports were provided to 134 volunteer surgeons. The authors note that this method enabled evaluation of cosmetic outcomes, but not outcomes involving feeding, breathing, or hearing.

2. Bickler S, Ozgediz D, et al. Key concepts for estimating the burden of surgical conditions and the unmet need for surgical care. *World J Surg* 2010;34(3):374-80.

The paper proposes key terminology for analyzing surgical care from a public health perspective and outlines a conceptual framework for estimating the burden of surgical conditions and need for surgical care. Cummulative surgical DALYs, which measure the burden of surgical conditions, can be calculated using disability weights (DW) and values for surgical care (VSC), accounting for age-specific cumulative risk of surgical disease. The impact of surgical care, or "met need," is determined as surgical DALYs averted.

3. Corlew DS. Estimation of Impact of Surgical Disease Through Economic Modeling of Cleft Lip and Palate Care. *World J Surg* 2010;43(3):391-6.

The economic impact of cleft repair in a developing country is modeled using data from 568 patients receiving surgical cleft care by the NGO Interplast in Katmandu, Nepal. Using Gross National Income (GNI) per capita, cleft repair added $856-$6,598 (cleft lip) and $2,293-$17,278 (cleft palate) to lifetime individual income. Using the more liberal Value of a Statistical Life, potential economic gains were $56,919-$143,363 (cleft lip) and $152,372-$375,412 (cleft palate). The cost of care per DALY averted was $29-73 USD.

4. Fuglistaler-Montali I, Attenberger C, et al. In search of benchmarking for mortality following multiple trauma: a Swiss trauma center experience. *World J Surg* 2009;33(11):2477-89.

The authors propose establishing the NTDB-TRISS as an international standard for measuring outcomes of multiple trauma. Based on their analysis of multiple scoring systems for prediction of mortality in prospectively-collected data from a Swiss university hospital, the NTDB-TRISS combines the highest statistical precision with the highest benchmark level in the prediction of 30-day mortality.

5. Gosselin RA, Maldonado A, et al. Comparative Cost-Effectiveness Analysis of Two MSF Surgical Trauma Centers. *World J Surg* 2010;34(3):415-9.

Cost-effectiveness of surgical care provided by MSF in two of their surgical trauma hospitals (Teme hospital in Nigeria and La Trinite Hospital in Haiti) during a three-month period was evaluated using the Global Burden of Disease methodology. The costs were $172 (Nigeria) and $233 (Haiti) per DALY averted. These values are compared with cost-effectiveness analyses for surgical and non-surgical services in other countries.

6. Juillard CJ, Mock C, et al. Establishing the evidence base for trauma quality improvement: a collaborative WHO-IATSIC review. *World J Surg* 2009;33(5):1075-86.

A review of the effectiveness of trauma quality improvement (QI) programs was conducted in preparation for developing Guidelines for Trauma Quality Improvement Programs. Thirty-six articles evaluated the effect comprehensive and issue-specific QI programs on mortality and various other outcomes, including cost. All but two of the 36 articles noted significant improvement in the measured outcome after implementation of a QI program. Several also noted cost-savings. Of note, 34/36 articles were from high income countries. The other two were from the same institution in Thailand, and both reported trauma QI processes that resulted in decreased mortality.

7. Magee WP, Vander Burg R, et al. Cleft Lip and Palate as a Cost-effective Health Care Treatment in the Developing World. *World J Surg* 2010;34(3):420-7.

The cost-effectiveness of cleft lip and palate repairs by the nonprofit organization Operation Smile is analyzed using two methods. Using the Disease Control Priorities Project (DCP1) Life Tables, which suggest that the entire burden of a cleft lip/palate is incurred within the first 4 years of life, the cost per DALY averted range from $278-$1827. Based on the observation that older children with clefts suffer from teasing, poor self-esteem, and decreased educational opportunities, the authors propose a modification to the Life Tables that reflects disability associated with these deformities for the entire life span, yielding a cost per DALY averted of $8-$96.

8. Mayer EK, Chow A, et al. Appraising the quality of care in surgery. *World J Surg* 2009;33(8):1584-93.

This article discusses the need for a structured framework to measure quality of surgical care that incorporates both clinical pathway measures (structure of care, process of care, outcome of care, and economic measures of care) and patient-reported measures (patient-reported treatment outcomes, health-related quality of life measures, and patient satisfaction). Combining these measures to create an overall composite quality score can be made feasible only if it is supported by the use of robust statistical methodology.

9. McQueen KA, Magee W, et al. Application of outcome measures in international humanitarian aid: comparing indices through retrospective analysis of corrective surgical care cases. *Prehosp Disaster Med* 2009;24(1):39-46.

This article presents outcomes of operations performed during Operation Smile surgical missions. The study exemplifies the importance of collecting, analyzing, and reporting measures of effectiveness in all surgical settings.

10. Weiser TG, Makary MA, et al. Standardised metrics for global surgical surveillance. *Lancet* 2009;374(9695):1113-7.

WHO's Safe Surgery Saves Lives initiative developed measures for assessing structure, volume, and outcome of surgical services at a national level, which included the following: number of operating rooms, number of operations, number of accredited surgeons, number of accredited anaesthesia professionals, day-of-surgery death ratio, and postoperative in-hospital death ratio. One hospital in each of eight different countries was asked to provide this information retrospectively. All hospitals were able to report on each of these measures, although the outcome measures were most difficult, as this often required cross-referencing of death registries with surgical records.

Communication & Telemedicine

1. Augestad KM, Lindsetmo RO. Overcoming distance: video-conferencing as a clinical and educational tool among surgeons. *World J Surg* 2009;33(7):1356-65.

The authors review the literature pertaining to telemedicine in surgery and report their own

experiences establishing telemedicine in Norway. Telemedicine has been used for intra-operative consultation and telementoring, didactic training in surgery clerkship, oversight of traumas in rural areas informing need for referral, and post-operative follow-up. A majority of the population in several developing countries, including South Africa, Nigeria, and Uganda, have access to 3G bandwidth, which is one theoretical means for data transmission.

2. Paige JT, Aaron DL, et al. Improved operating room teamwork via SAFETY prep: a rural community hospital's experience. *World J Surg* 2009;33(6):1181-7.

A preoperative briefing protocol implemented at a rural US community hospital was evaluated by querying 10 members of the OR staff pre- and post-intervention using a teamwork assessment scale. Teamwork was improved post-intervention based on 20 pre- and 16 post-intervention cases. Additionally, there was a trend toward shorter procedure times post-intervention based on assessment of operating times for 4 categories of matched cases.

3. Tamariz F, Merrell R, et al. Design and implementation of a web-based system for intraoperative consultation. *World J Surg* 2009;33(3):448-54.

A web-based system was designed and piloted for real-time intraoperative teleconsultation between surgeons in the US and consultants in Moscow and Russia. Fifteen thyroidectomies and parathyroidectomies were studied to confirm by teleconsultation the identity of 22 recurrent laryngeal nerves (RLN). Consultants were able to review the entire case via a secure, web-based portal, position a remote consultant-directed camera in the OR, and converse with the surgeon in real-time, while looking at the anatomy. All RLNs were successfully identified in an average of 6 minutes (including review of case footage) and there was no interruption in Internet connection.

Surgery in Conflict Settings

1. Chu K, Trelles M, et al. Rethinking surgical care in conflict. *Lancet* 2010;375(9711):262-3.

There is a lack of reliable data on the burden of surgical disease in conflict settings. While increases surgical caseloads in these settings are typically attributed to violent injury, they may also result from underlying infrastructure needs that are no longer met and from consequences of malnutrition and infectious disease (eg. bowel perforation secondary to typhoid fever, soft-tissue abscesses), which are more prevalent in conflict settings. Surgical caseloads in conflict settings are roughly comprised by interventions for violent injury (20%), obstetric emergencies (30%), accidental injury and tropical infections (30%).

2. Contini S, Taqdeer A, et al. Emergency and essential surgical services in Afghanistan: still a missing challenge. *World J Surg* 2010;34(3):473-9.

Seventeen Afghan health facilities outside Kabul were queried using the WHO Tool for Situational Analysis to Assess Emergency and Essential Surgical Care. Shortages of continuous electricity, running water, and oxygen were noted in 30-66% of health facilities. Certified surgeons and anesthesiologists were present in 64% and 27% of facilities, respectively. Lifesaving procedures were not performed in 17-42% of peripheral hospitals; 24% of peripheral hospitals did not have emergency obstetric services.

3. Taira BR, Cherian MN, et al. Survey of emergency and surgical capacity in the conflict-affected regions of Sri Lanka. *World J Surg* 2010;34(3):428-32.

Forty-seven hospitals in the conflict affected areas of northern and eastern Sri Lanka were surveyed using the WHO Tool for Situational Analysis to Assess Emergency and Essential Surgical Care (EESC). The data set was further limited to the thirty-one respondents from district and base hospitals (first level of care). Most facilities had water and about half had consistent electricity. Forty-eight percent had an OR and 57% had medical officers trained to perform basic surgical procedures. There were two surgeons and two OB/Gyn physicians among all 31 hospitals surveyed. All first-level facilities referred patients requiring laparotomy and most referred for hernia repair. Twenty-four percent referred for incision and drainage, usually because of lack of supplies. Forty-five percent of facilities did not have supplies to start an intravenous infusion.

Anesthesia

1. Dubowitz G, Detlefs S, et al. Global Anesthesia Workforce Crisis: A Preliminary Survey Revealing Shortages Contributing to Undesirable Outcomes and Unsafe Practices. *World J Surg* 2010;34(3):438-44.

A pilot Internet-based survey was conducted to estimate per-capita anesthesia providers in low and middle income countries. Based on responses from workers in 14 countries, most low and low middle income countries have less than 1 anesthesia provider per 100,000 people, ranging from Yemen with 0.07 providers/100K to Swaziland with 1.41/100K.

2. Jacob R. Anesthesia for thoracic surgery in children in developing countries. *Paediatr Anaesth* 2009;19(1):19-22.

Common reasons that children in developing countries may require thoracic surgery include repair of tracheoesophageal fisutulas, pyogenic infections, foreign body aspiration, chest injuries, and accidental ingestions. The author describes innovative techniques for lung isolation and postoperative pain management using inexpensive equipment and a minimal number of trained personnel.

3. Jochberger S, Ismailova F, et al. A survey of the status of education and research in anaesthesia and intensive care medicine at the university teaching hospital in Lusaka, Zambia. *Archives of Iranian Medicine* 2010;13(1):5-12.

The author describes the status of anaesthesia-related patient care, education, and research at Zambia's teaching hospital. Anesthetic equipment, medical supplies, drugs, and consumables are in limited supply. The institution does not have a postgraduate training program; resultingly, anaesthesia is taught as a subspecialty of surgery and few Zambian medical students become interested in pursuing anaesthesia. No recent research efforts have been made by the department of anaesthesia.

4. Newton M, Bird P. Impact of Parallel Anesthesia and Surgical Provider Training in Sub-Saharan Africa: A Model for a Resource-poor Setting. *World J Surg* 2010;34(3):445-52.

A training program for surgeons and anesthesia providers was developed in rurally-located

Kijabe Hospital in Kenya to meet the surgical needs of rural Kenyan patients. The anesthesia program emphasizes obstetric, trauma, pediatric, and regional anesthesia based on the epidemiology of surgical conditions and available resources in rural Africa. In the past 10 years, 18 RNs have been recruited from rural health centers, trained as nurse anesthetists in a 15-18-month program at Kijabe Hospital, and returned to their rural communities. Fifty-five intern-level surgeons have been trained in the specialties of general surgery, obstetrics/gynecology, and orthopedics. During this time the surgical caseload at Kijabe Hospital has increased four-fold, and case complexity has subjectively increased.

5. Rosseel P, Trelles M, et al. Ten years of experience training non-physician anesthesia providers in Haiti. *World J Surg* 2010;34(3):453-8.

Authors discuss Médicins Sans Frontières (MSF) nurse anesthetist (NA) training program, which graduated 24 students between 1998 and 2008. The program was 15-18 months long and was coordinated by expatriate anesthesiologists. Of graduates, 79% continue to work as NAs in Haiti (63% in private hospitals, 26% public, 16% mixed). Challenges to this program include lack of sustainability due to the NGO funding and administering the program, lack of acceptance by Haitian anesthesiologists and medical professional societies, and inadequate remuneration for NAs working in the public sector.

6. Thoms GM, McHugh GA, et al. The Global Oximetry initiative. *Anaesthesia* 2007;62 Suppl 1:75-7.

Global Oximetry (GO) was an initiative launched by the World Federation of Societies of Anaesthesiologists (WFSA) in Uganda, India, the Philippines, and Vietnam in 2007 with the overall aims of promoting oximetry utilization and reducing oximetry costs in lower income countries. Specific long-term objectives included created new policy, influencing, oximetry design, and setting new global standards for safer monitoring.

7. Walker IA, Merry AF, et al. Global oximetry: an international anaesthesia quality improvement project. *Anaesthesia* 2009;64(10):1051-60.

This article describes processes and results of pilot projects in Uganda, India, the Philippines, and Vietnam to increase the use of oximetry in operative and acute care settings. The oximetry gap (difference between observed and expected number of pulse oximeters) in these countries ranged from 14% in acute care settings in the Philippines to 76% in ORs of Vietnam's Binh Dinh province. Two types of oximeter were donated to select hospitals and providers were trained in appropriate use. Providers documented desaturation events in logbooks (incidence of events 12-16%) and all providers documented appropriate responses to these events. Qualitatively, providers commented that oximeters improved their anesthetic techniques and several said they are now reliant upon the tool. Two types of oximeter were evaluated, and providers were queried regarding the optimal characteristics of an oximeter. Rechargeable batteries were identified as a key feature of an oximeter for low and low middle income countries. At the end of the study period (9-15 months use), 73% and 81% of the two different oximeters, respectively, were in excellent working condition. Lack of money and systems for repair and replacement of non-functional oximeters were identified as significant barriers to global, sustainable oximetry use.

General Surgery

1. Kopelman D. Perforated peptic ulcer: 'developing' world versus 'developed' world. *World J Surg* 2009;33(1):86-7.

Complicated peptic ulcer disease remains a significant problem in developing countries. The author notes that most patients in this cohort were young men, many of whom were active smokers and alcohol users. High mortality and complication rates (10% and 30%) are emphasized.

2. Manning RG, Aziz AQ. Should laparoscopic cholecystectomy be practiced in the developing world? The experience of the first training program in Afghanistan. *Ann Surg* 2009;249(5):794-8.

A retrospective review of 137 consecutive cholecystectomies (102 laparoscopic, 35 open) was done in a hospital in Kabul, Afghanistan, a developing country devastated by 3 decades of war and lacking standardized surgical training programs and infrastructure. Six percent of LC patients suffered major complications, which was higher than rates reported in other developed and developing countries. The authors cite lack of ERCP, inability to do intraoperative cholangiography, and non-standard surgeon-training programs as major challenges to doing safe laparoscopic cholecystectomies in this environment.

3. Shah SP, Epino H, et al. Impact of the introduction of ultrasound services in a limited resource setting: rural Rwanda 2008. *BMC Int Health Hum Rights* 2009;9:4.

Ultrasound services were introduced at two rural Rwandan district hospitals. Obstetrical scanning was the most frequently used application. Ultrasound changed management plans in 43% of patients scanned, and the most common change was the plan a surgical intervention. There was 96% concordance between interpretations by Rwandan physicians and a blinded, ultrasound fellowship trained emergency medicine physician reviewer from the United States.

Obstetrics/Gynecology

1. Wylie BJ, Mirza FG. Cesarean delivery in the developing world. *Clin Perinatol* 2008;35(3):571-82, xii.

The WHO advocates an optimal national Cesarean Delivery (CD) rate of 5-15%. Ninety-two percent of the least developed countries have CD rates lower than 5%, with the average rate of CD being 2% in these countries. In both least developed countries and countries with "emerging economies," urban CD rates are significantly higher than rural rates. An estimated 75% of hospitals providing obstetric care in Africa do not have the ability to perform CD. In low-income countries, neonatal and maternal mortality rates are inversely associated with CD rates. However, CD is emerging as a cultural norm in more advanced developing nations in Latin America and East Asia, where rates are as high as 77% in the richest segments of these populations. CD rates are not associated with maternal or neonatal mortality in these countries, and negative maternal outcomes (wound infections, increased transfusion requirements, prolonged hospitalization) are highlighted.

Otolaryngology

1. Fagan JJ, Jacobs M. Survey of ENT services in Africa: need for a comprehensive intervention. *Glob Health Action* 2009 Mar 19; 2. doi: 10.3402/gha.v2i0.1932.

Citing the contribution of ear, nose, and throat disorders to the global burden of disease, this article describes results of a survey of ENT surgeons in 18 sub-Saharan African countries regarding availability of ENT, audiology, and speech therapy services and training. The authors find a paucity of ENT services and training opportunities in low-income African nations.

Plastic and Reconstructive Surgery

1. Aziz SR, Rhee ST, et al. Cleft surgery in rural Bangladesh: reflections and experiences. *J Oral Maxillofac Surg* 2009;67(8):1581-8.

The authors describe three brief surgical missions to repair clefts in Bangladesh, primarily aboard Impact Foundation Bangladesh's "Boat of Life." Twenty-three percent of their patients were adult-size and posed unique challenges due to wider clefts, requiring more extensive soft tissue dissection, increased transfusion requirements, and occasionally the use of dermal biomaterials for tension-free repair. The authors note that despite their operative successes, supportive care (genetic counseling, dental specialty care, speech pathology, audiology) is often lacking in these rural environments. They emphasize the importance of training local practitioners during their missions and they highlight two oral and maxillofacial surgery training programs in the country.

2. Bemudez L, Carter V, et al. Surgical Outcomes Auditing Systems in Humanitarian Organizations. *World J Surg* 2010;34(3):403-10.

Operation Smile developed a cleft surgery outcomes database and evaluation system using pre- and post-operative photographs that were reviewed by independent evaluators. Twenty percent of patients returned for one-year postoperative visits, which were completed by local foundations, and their photographs were sent to the organization's international headquarters. Outcomes data was returned to the mission teams and individual surgeons about the patients on whom they had operated one-year prior. Five hundred eighty procedures were evaluated and feedback reports were provided to 134 volunteer surgeons. The authors note that this method enabled evaluation of cosmetic outcomes, but not outcomes involving feeding, breathing, or hearing.

3. Corlew DS. Estimation of Impact of Surgical Disease Through Economic Modeling of Cleft Lip and Palate Care. *World J Surg* 2010;43(3):391-6.

The economic impact of cleft repair in a developing country is modeled using data from 568 patients receiving surgical cleft care by the NGO Interplast in Katmandu, Nepal. Using Gross National Income (GNI) per capita, cleft repair added $856-$6,598 (cleft lip) and $2,293-$17,278 (cleft palate) to lifetime individual income. Using the more liberal Value of a Statistical Life, potential economic gains were $56,919-$143,363 (cleft lip) and $152,372-$375,412 (cleft palate). The cost of care per DALY averted was $29-73 USD.

4. Hodges S, Wilson J, et al. Plastic and reconstructive surgery in Uganda – 10 years experience. *Paediatr Anaesth* 2009;19(1):12-8.

This group with affiliations with St. George's Hospital in London describes their work addressing cleft lip/palate and burns contractures though subsidized up-country visits by specialists to serve the rural poor and the establishment of a specialist unit at Mengo Hospital in Kampala. Because of high rates of malnutrition and death associated with cleft lip and palate, this group offers nutritional support and repair in affected babies as early as 6 weeks old. The authors also highlight the need for improved anesthesia equipment and services in developing countries.

5. Magee WP, Vander Burg R, et al. Cleft Lip and Palate as a Cost-effective Health Care Treatment in the Developing World. *World J Surg* 2010;34(3):420-7.

The cost-effectiveness of cleft lip and palate repairs by the nonprofit organization Operation Smile is analyzed using two methods. Using the Disease Control Priorities Project (DCP1) Life Tables, which suggest that the entire burden of a cleft lip/palate is incurred within the first 4 years of life, the cost per DALY averted range from $278-$1827. Based on the observation that older children with clefts suffer from teasing, poor self-esteem, and decreased educational opportunities, the authors propose a modification to the Life Tables that reflects disability associated with these deformities for the entire life span, yielding a cost per DALY averted of $8-$96.

Surgical Oncology

1. Agarwal G, Ramakant P, et al. Breast cancer care in developing countries. *World J Surg* 2009;33(10):2069-76.

This article summarizes presentations at the symposium titled "Breast Cancer Care in Developing Countries," held as part of the Breast Surgery International program at the International Surgical week 2007 in Montreal, Canada. Presenters discuss breast cancer epidemiology, care, and outcomes in India, Mexico, and Croatia.

2. Chirdan LB, Bode-Thomas F, et al. Childhood cancers: challenges and strategies for management in developing countries. *Afr J Paediatr Surg* 2009;6(2):126-30.

The authors summarize the most common cancers affecting children in developing countries, many of which are amenable to surgical intervention, and they describe barriers to care, which include lack of awareness, lack of specialists and cancer care centers, and reliance on traditional healers. They propose potential solutions including training of cancer care specialists, establishment of standardized treatment protocols, and creation of pediatric cancer units, potentially in collaboration with centers in developed countries that could work together on research, patient care, training, and public awareness endeavors.

Trauma/Burn/Critical Care

1. Atiyeh BS, Costagliola M, et al. Burn prevention mechanisms and outcomes: pitfalls, failures and successes. *Burns* 2009;35(2):181-93.

Ninety percent of fatal fire-related burns occur in low and middle income countries, with half of these occurring in South-East Asia. Primary burn prevention in LMICs is emphasized in this article. Risk factors for burns include overcrowding, lack of water supply, and low income. LMIC-specific etiologies include homemade kerosene lamps and malfunctioning kerosene pressure stoves, dwellings made of highly combustible materials (treated/painted woods and plastics),

and women cooking at floor level or over an open fire while wearing loose fitting clothing made from non-flame retardant fabric. The authors propose that prevention should include educational campaigns as well as legislative efforts to regulate dwellings, products, and handling/transportation of highly-flammable materials.

2. Fuglistaler-Montali I, Attenberger C, et al. In search of benchmarking for mortality following multiple trauma: a Swiss trauma center experience. *World J Surg* 2009;33(11):2477-89.

The authors propose establishing the NTDB-TRISS as an international standard for measuring outcomes of multiple trauma. Based on their analysis of multiple scoring systems for prediction of mortality in prospectively-collected data from a Swiss university hospital, the NTDB-TRISS combines the highest statistical precision with the highest benchmark level in the prediction of 30-day mortality.

3. Juillard CJ, Mock C, et al. Establishing the evidence base for trauma quality improvement: a collaborative WHO-IATSIC review. *World J Surg* 2009;33(5):1075-86.

A review of the effectiveness of trauma quality improvement (QI) programs was conducted in preparation for developing Guidelines for Trauma Quality Improvement Programmes. Thirty-six articles evaluated the effect comprehensive and issue-specific QI programs on mortality and various other outcomes, including cost. All but two of the 36 articles noted significant improvement in the measured outcome after implementation of a QI program. Several also noted cost-savings. Of note 34/36 articles were from high income countries. The other two were from the same institution in Thailand, and both reported trauma QI processes that resulted in decreased mortality.

4. Nakahara S, Saint S, et al. Evaluation of trauma care resources in health centers and referral hospitals in Cambodia. *World J Surg* 2009;33(4):874-85.

This study evaluated available equipment and knowledge for trauma care at health centers (HC) and referral hospitals (RH) in rural Cambodia through a survey of 85 HCs and 17 RHs. Criteria for essential equipment and knowledge was adapted from the WHO Guidelines for Essential Trauma Care (EsTC). Most HCs had equipment for managing shock but not airway and breathing. Many HC providers did not have basic life-saving knowledge/skills regarding airway management, neck protection, and pelvic wrapping, and some HCs did not have essential equipment including needles, stethoscopes, or blood pressure cuffs. Most RHs had appropriate knowledge and equipment for managing airway, breathing, and circulation, but lacked CT scanners, chest tube and central venous line equipment, knowledge of pelvic wrapping for pelvic fractures, and ability to perform burr holes. Equipment availability was correlated with number of staff. Knowledge and skills were correlated with population density and inversely-correlated with distance to a higher level of care.

5. Samuel JC, Akinkuotu A, et al. Epidemiology of injuries at a tertiary care center in Malawi. *World J Surg* 2009;33(9):1836-41.

Data was collected on injured patients presenting to the major referral hospital for central Malawi over a 5-month period. The sample of 1,474 patients was largely male (76%) with a bimodal age distribution (<5yo and 26-30 yrs). Road-traffic injuries and assault were the most

common reasons for treatment (43% and 24% respectively). Most patients arrived by private vehicle (44%), which was the fastest means of transportation (avg 120 minutes). The hospital admission rate was 27%. There were 25 mass casualties leading to 102 admissions, and seven were associated with a fatality.

Editorials & Opinions

1. Gostin LO, Mok EA. Grand challenges in global health governance. *Br Med Bull* 2009;90:7-18.

This article discusses current challenges to global health governance and proposes solutions for improved global health in our era of globalization. The current response by multiple actors, each with their own narrowly defined goals, often results in misdirected, fragmented, and duplicated efforts. The authors argue for an increased role of WHO in establishing global health priorities, coordinating the efforts of interested parties, and increasing transparency, accountability, and monitoring of outcomes.

2. Kingham TP, Muyco A, et al. Surgical elective in a developing country: ethics and utility. *J Surg Educ* 2009;66(2):59-62.

The author describes his experiences as a surgical resident on an elective rotation at a large referral hospital in Malawi. Benefits of such an experience include case variety, heavy reliance on history and physical examinations for diagnoses, need for ingenuity in resource-poor settings, and reinforcement of common principles in safe surgery. He highlights concerns of such experiences, which include the challenge of adapting clinical decision-making to the country's resources, inadequate supervision, and risk of transmission of communicable diseases to visiting residents.

3. Kopelman D. Perforated peptic ulcer: 'developing' world versus 'developed' world. *World J Surg* 2009;33(1):86-7.

Complicated peptic ulcer disease remains a significant problem in developing countries. The author notes that most patients in this cohort were young men, many of whom were active smokers and alcohol users. High mortality and complication rates (10% and 30%) are emphasized.

4. Luboga S, Galukande M, et al. Recasting the role of the surgeon in Uganda: a proposal to maximize the impact of surgery on public health. *Trop Med Int Health* 2009;14(6):604-8.

The authors argue that the clinical and educational role played by surgeons in developing countries must be redefined, with the surgeon assuming a greater role in leadership, management, and public health advocacy by documenting the unmet need for surgery and the resources required to improve access to care.

5. Monjok E. The neglect of the global surgical workforce: experience and evidence from Uganda. *World J Surg* 2009;33(1):150-1; author reply 152-3.

This general practitioner and administrator shares a possible solution employed in Mozambique. Through short postgraduate training programs (18 months), the country trains

"tecnicos de cirurgica," to increase surgical services in rural populations.

6. Nthumba P. M. 'Blitz surgery:' redefining surgical needs, training, and practice in sub-saharan Africa. *World J Surg* 2010;34(3):433-7.

The author argues that reconstructive operations performed during surgical "blitzes" (short trips by individuals and organizations to developing countries) have poorer outcomes than local, in-hospital procedures, primarily because of inadequate preoperative and postoperative care. The "blitz" approach neglects a significant majority of the population and promotes community dependence on unsustainable services. The author envisions a new reconstructive surgical service tailor-made for Africa that is affordable and sustainable yet able to deliver quality surgical care to the remotest villages through involvement of local communities and the training and retention of local surgeons.

Guidelines

1. World Health Organization. Guidelines for trauma quality improvement programmes. 2009. http://whqlibdoc.who.int/publications/2009/9789241597746_eng.pdf. Accessed February 18, 2010.

Proceedings

1. McQueen KA, Parmar P, et al. Burden of Surgical Disease: Strategies to Manage an Existing Public Health Emergency – Report of the 2009 Humanitarian Action Summit Working Group. *Prehospital and Disaster Medicine* 2009;24(4):228-31.

Proceedings of a Burden of Surgical Disease Working Group meeting during the 2009 Harvard Humanitarian Initiative's Humanitarian Action Summit (HHI/HAS). The group discussed results of an online surgery of 100 International Organizations (IOs) that provide surgical services globally. They made the following recommendations for improved surgical service delivery by humanitarian organizations: 1. Understand the local needs and resources; 2. Incorporate best practices into ongoing delivery of surgical care including infrastructure, safety checklists, and appropriate follow-up; and 3. Integrate routine collection of data on surgical conditions and outcomes.

2. Perkins RS, Casey KM, et al. Addressing the Global Burden of Surgical Disease: Proceedings from the 2nd Annual Symposium at the American College of Surgeons. *World J Surg* 2010;34(3):371-3.

Volunteerism & Experiences

1. Aziz SR, Rhee ST, et al. Cleft surgery in rural Bangladesh: reflections and experiences. *J Oral Maxillofac Surg* 2009;67(8):1581-8.

The authors describe three brief surgical missions to repair clefts in Bangladesh, primarily aboard Impact Foundation Bangladesh's "Boat of Life." Twenty-three percent of their patients were adult-size and posed unique challenges due to wider clefts requiring more extensive soft tissue dissection, increased transfusion requirements, and occasionally the use of dermal biomaterials for tension-free repair. The authors note that despite their operative successes, supportive care (genetic counseling, dental specialty care, speech pathology, audiology) is often lacking in these rural environments. They emphasize the importance of training local practitioners

during their missions and they highlight two oral and maxillofacial surgery training programs already existing in Bangladesh.

2. Chu K, Rosseel P, et al. Surgeons Without Borders: A Brief History of Surgery at Médicins Sans Frontières. *World J Surg* 2010;34(3):411-14.

Médicins Sans Frontières (MSF) began in 1981 by providing humanitarian aid to war refugees. One of the organization's strengths is its supply chain, by which it has the ability to set up major operating facilities within 48 hours in remote areas using large pre-packaged surgical kits. MSF surgeons perform vascular, obstetrical, orthopaedic, and other specialized surgical procedures. MSF also provide surgical care in post-conflict contexts and occasionally trains local practitioners in anesthesia and basic surgery to build local capacity. The organization acknowledges that the long-term solution to alleviating the global burden of surgical disease lies in building a domestic surgical workforce and infrastructure; however, the organization plays a critical role in providing relief during acute emergencies.

3. Eberlin KR, Zaleski KL, et al. Quality assurance guidelines for surgical outreach programs: a 20-year experience. *Cleft Palate Craniofac J* 2008;45(3):246-55.

Participants in Medical Missions for Children (MMFC) outline quality assurance guidelines for surgical outreach missions, including recommendations for pre-trip planning, perioperative concerns, and follow-up care.

4. Hodges S, Wilson J, et al. Plastic and reconstructive surgery in Uganda – 10 years experience. *Paediatr Anaesth* 2009;19(1):12-8.

This group with affiliations with St. George's Hospital in London describes their work addressing cleft lip/palate and burns contractures though subsidized up-country visits by specialists to serve the rural poor and the establishment of a specialist unit at Mengo Hospital in Kampala. Because of high rates of malnutrition and death associated with cleft lip and palate, this group offers nutritional support and repair in affected babies as early as 6 weeks old. The authors also highlight the need for improved anesthesia equipment and services in developing countries.

5. Lee DK, Weinstein S. International public health in third world country medical missions: when small legs walk, we all stand a little taller. *J Am Podiatr Med Assoc* 2009;99(4):371-6.

The authors share a compilation of their long-term experience and outcomes from international medical and surgical pediatric mission trips to Latin American countries.

6. McQueen KA, Hyder JA, et al. The provision of surgical care by international organizations in developing countries: a preliminary report. *World J Surg* 2010;34(3):397-402.

This article describes an Internet-based survey of International Organizations (IOs) delivering surgical care in developing nations. Forty-six organizations (response rate 46%) provided 223,425 cases per year. Most organizations routinely collect data on surgical volume, case mix, and outcomes. The majority of IOs integrate with the referral patterns of local providers, incorporate

these practitioners into their organization's delivery of care, and have provisions for follow-up care in place. Eighty-nine percent reported that they incorporate education and training into their missions.

7. McQueen KA, Magee W, et al. Application of outcome measures in international humanitarian aid: comparing indices through retrospective analysis of corrective surgical care cases. *Prehosp Disaster Med* 2009;24(1):39-46.

This article presents outcomes of operations performed during Operation Smile surgical missions. This study exemplifies the importance of collecting, analyzing, and reporting measures of effectiveness in all surgical settings.

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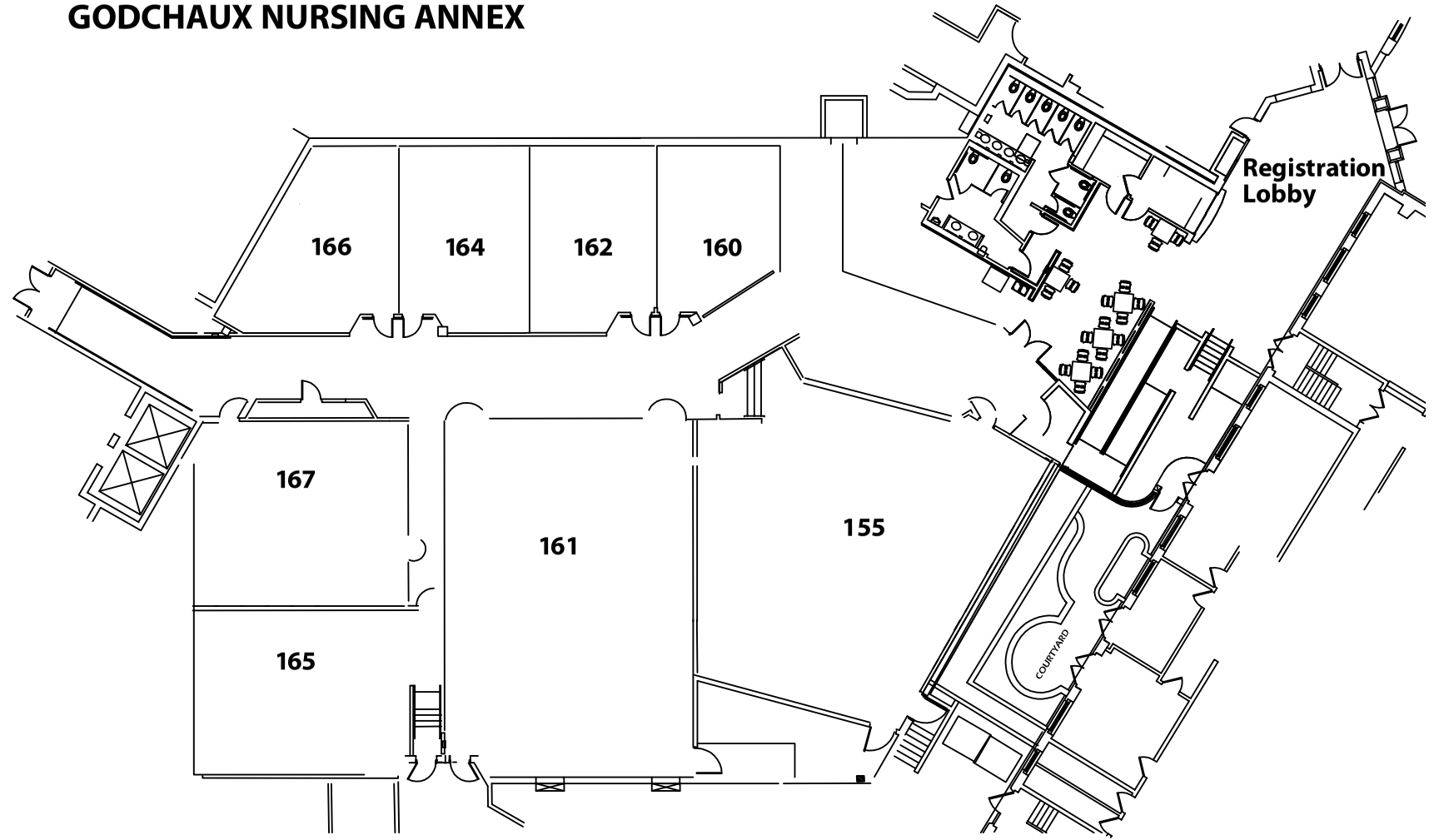
GODCHAUX NURSING ANNEX



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