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Global Surgical Volunteerism



Jeffrey D. Allred, Deseret News

Raymond R. Price MD, FACS

❖ **Associate Director Center for Global Surgery, University of Utah**

❖ **National Committee on Trauma, International Relations Committee, American College of Surgeons**

❖ **Vice-Chair WHO Global Initiative Emergency and Essential Surgical Care (GIEESC)**

❖ **Medical Director, WC Swanson Family Foundation**

Why Medical/Surgical Volunteerism?



Khovd 2009

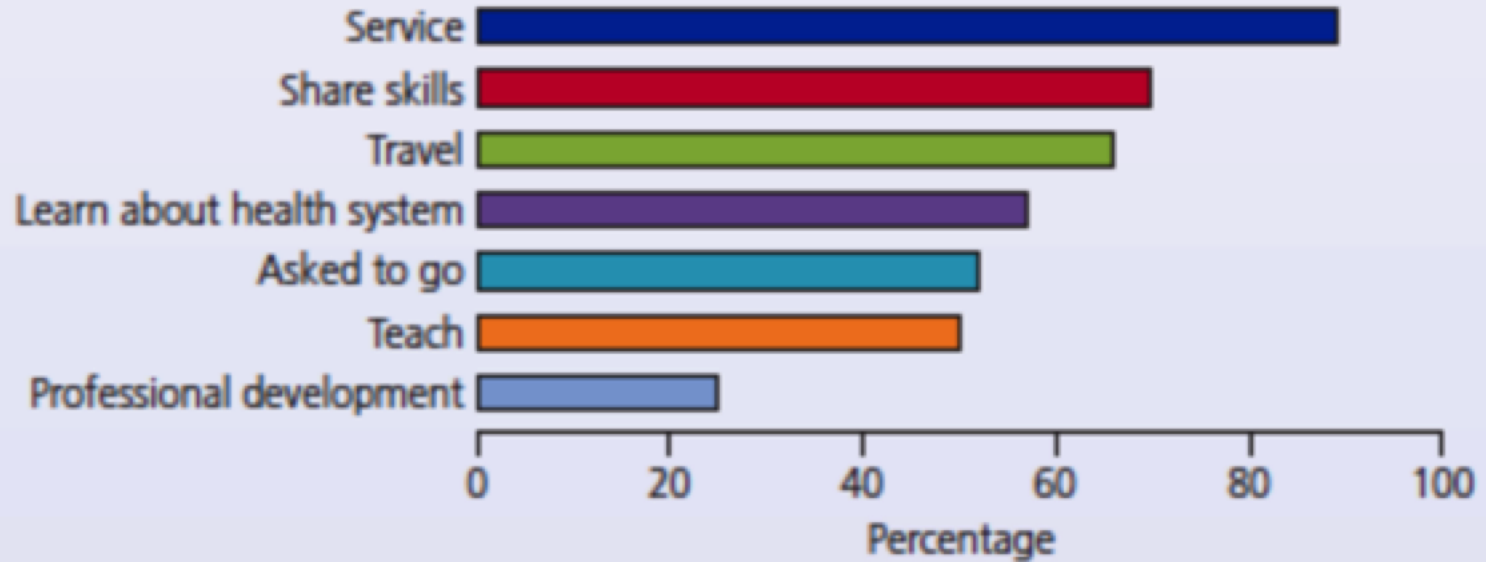


Choibalsan 2010

Chance to make a meaningful difference in the lives of others.

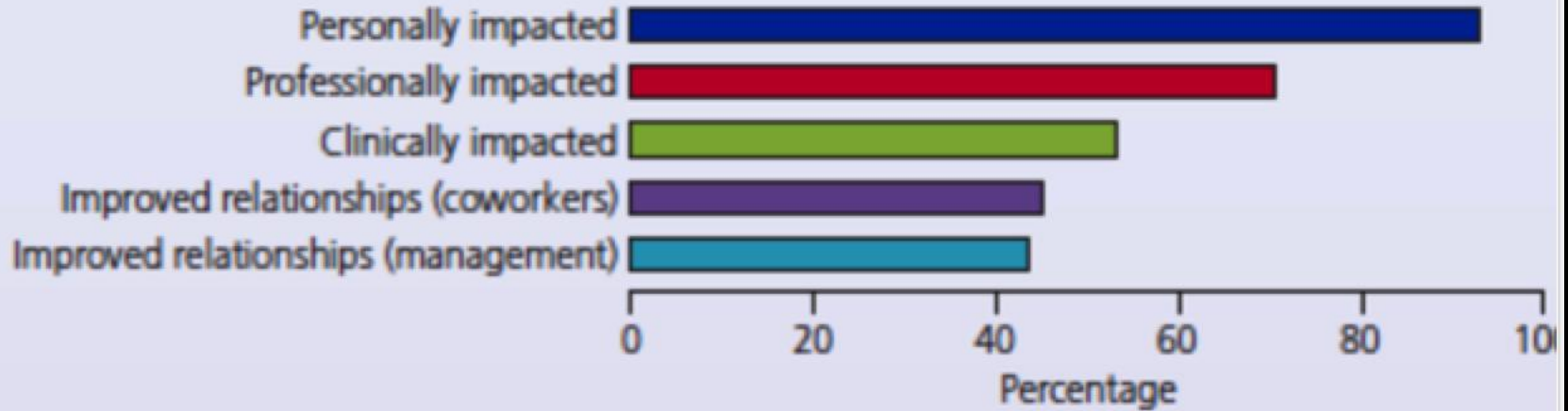
Reasons for Volunteering in Mongolia

Lombardo S, Busse H, Tefera G, Aboneh EA, Price RR



Perceived Benefits of Volunteering in Mongolia

Lombardo S, Busse H, Tefera G, Aboneh EA, Price RR



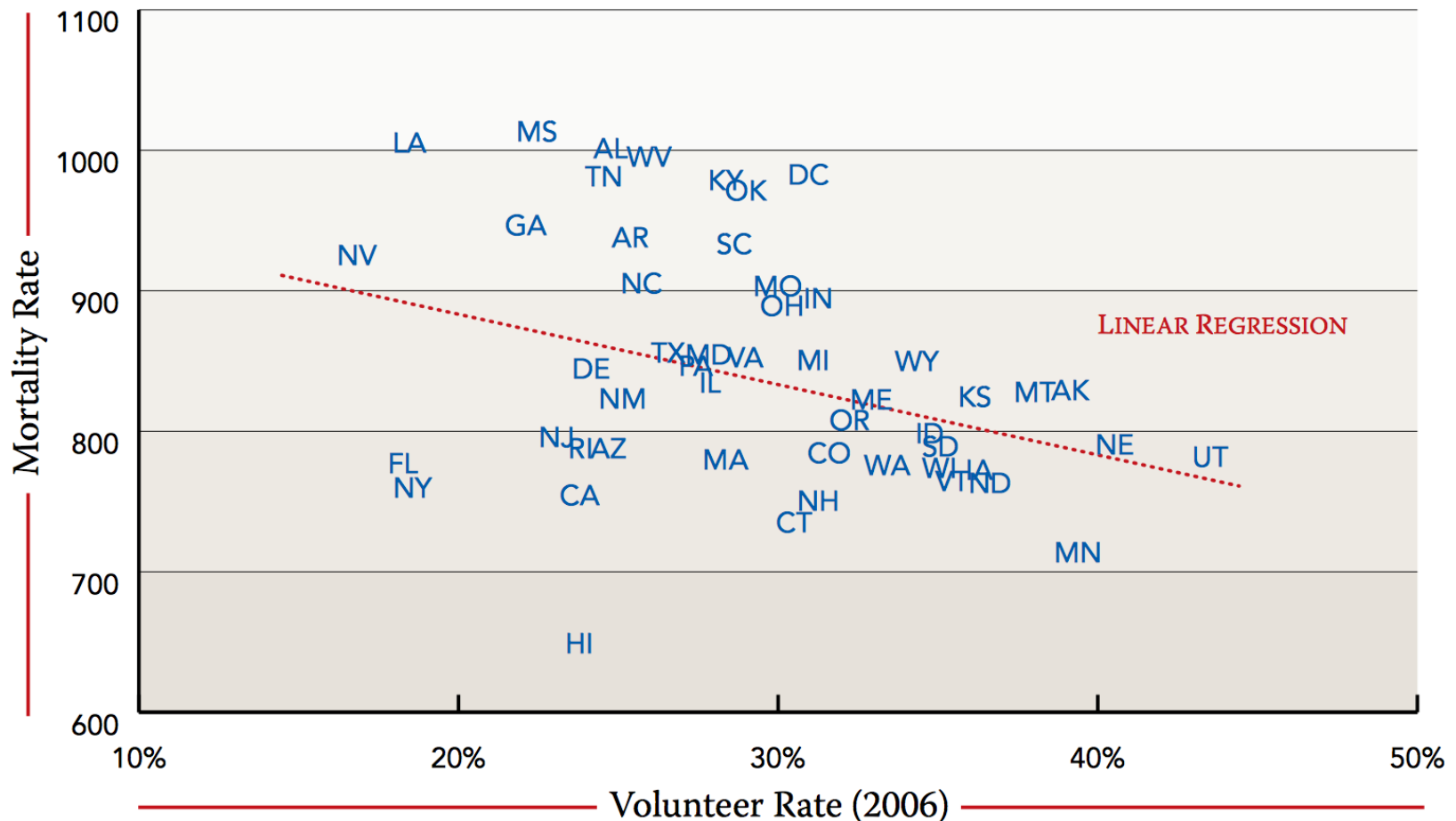
- **Volunteers have:**
 - **Lower mortality rates**
 - **Greater functional ability**
 - **Lower rates of depression later in life**



THE HEALTH BENEFITS OF VOLUNTEERING

■ ■ ■ A REVIEW OF RECENT RESEARCH ■ ■ ■

2006 VOLUNTEER RATE VS. AGE-ADJUSTED MORTALITY RATE



“Life Changing”

Robert Taylor MD, Anesthesiologist, 2007



“This has been a life changing experience. Even though I have been involved in other service opportunities, this trip has brought new meaning back to my life.”

Mokeyobo, Indonesia (2000)





Clinic

**Mokeyobo, Flores,
Indonesia, CHOICE
Humanitarian 2000**



“Many people trying to do quickly what they do not normally do, working with people with whom they do not normally work, in an environment with which they are not familiar, and at a time and place that is completely unexpected.”

<http://www.facs.org/trauma/updatehaiti/pdf/disasterquestions.pdf>



Access to clean water?



Henrick



Local Customs and Beliefs

Affect on Medical Care?

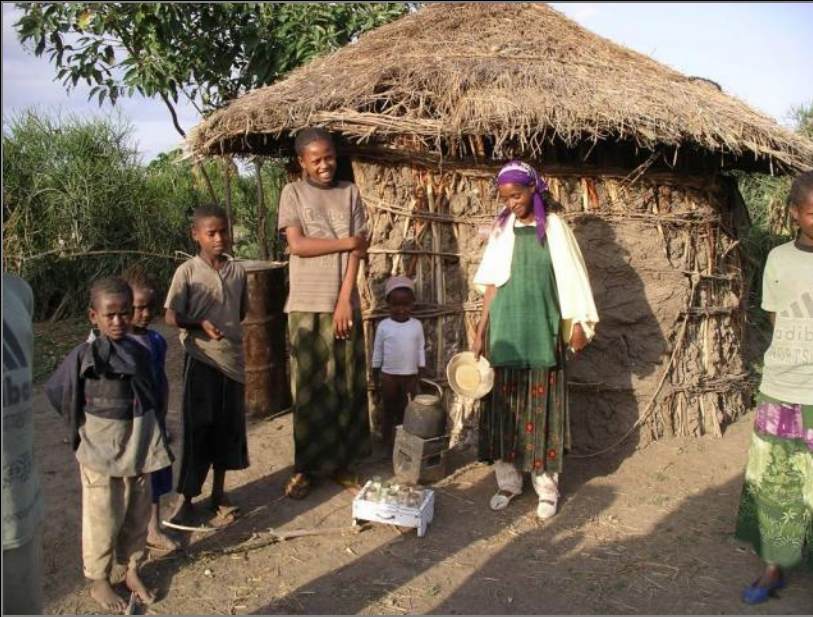


Empower the local people?

- **Implement long lasting change?**
- **Advance sustainable project?**
- **Improve the local medical education?**
- **Address the underlying public health issues?**



Ethiopia



Mongolia



One of the greatest challenges to medicine today is to find a way to provide adequate medical and surgical care to the 85% of the worlds' population who now lack it.

**6,000 short- term
medical
missions/year**

US \$ 250 million



Different types of Global Health volunteer opportunities



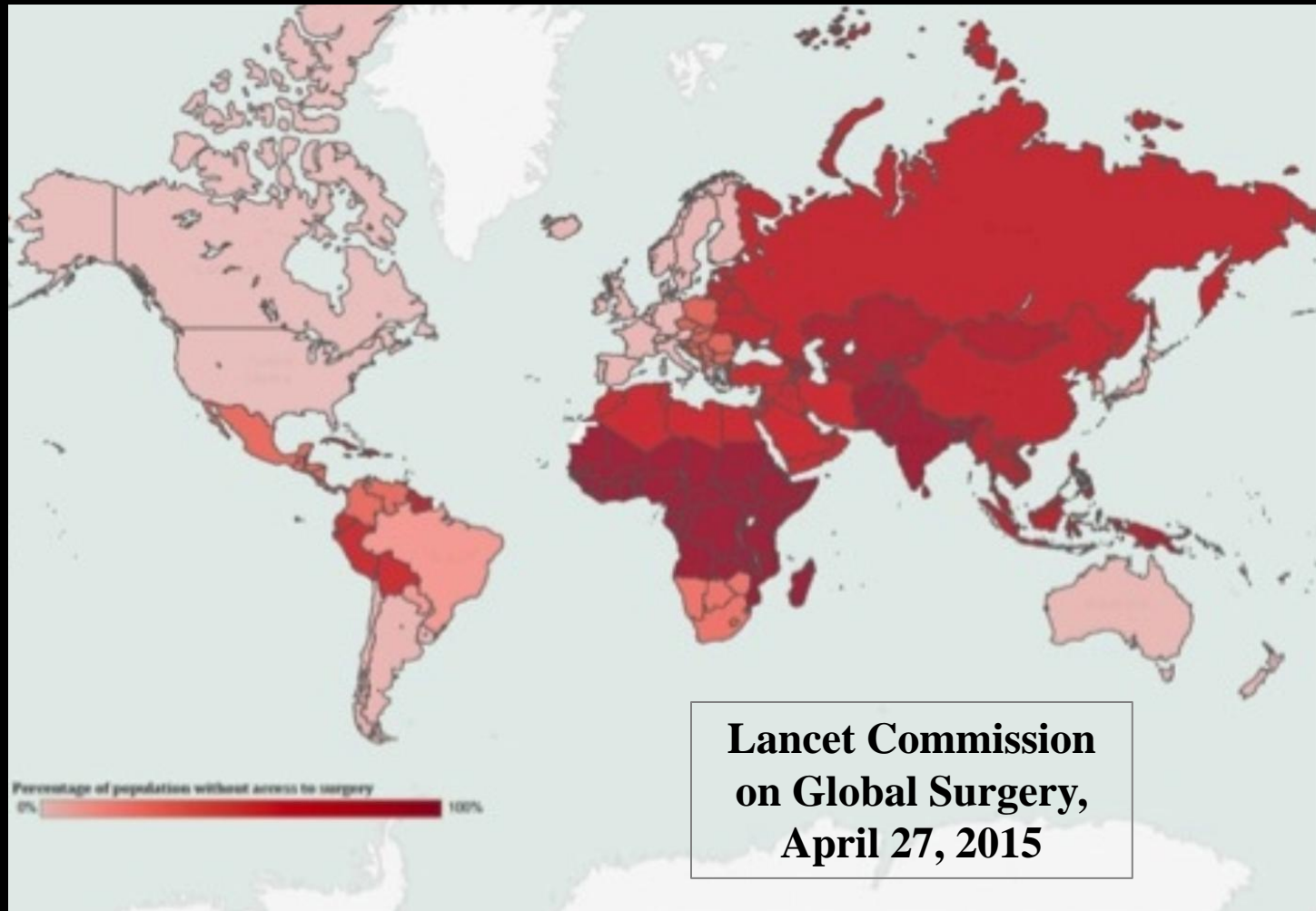
Public Health

Medical



Surgical

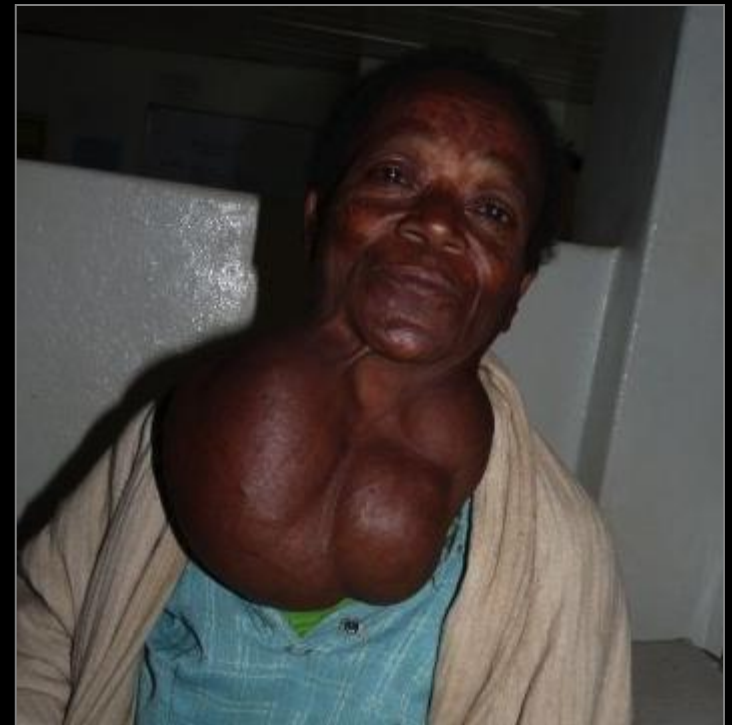
5 Billion People!



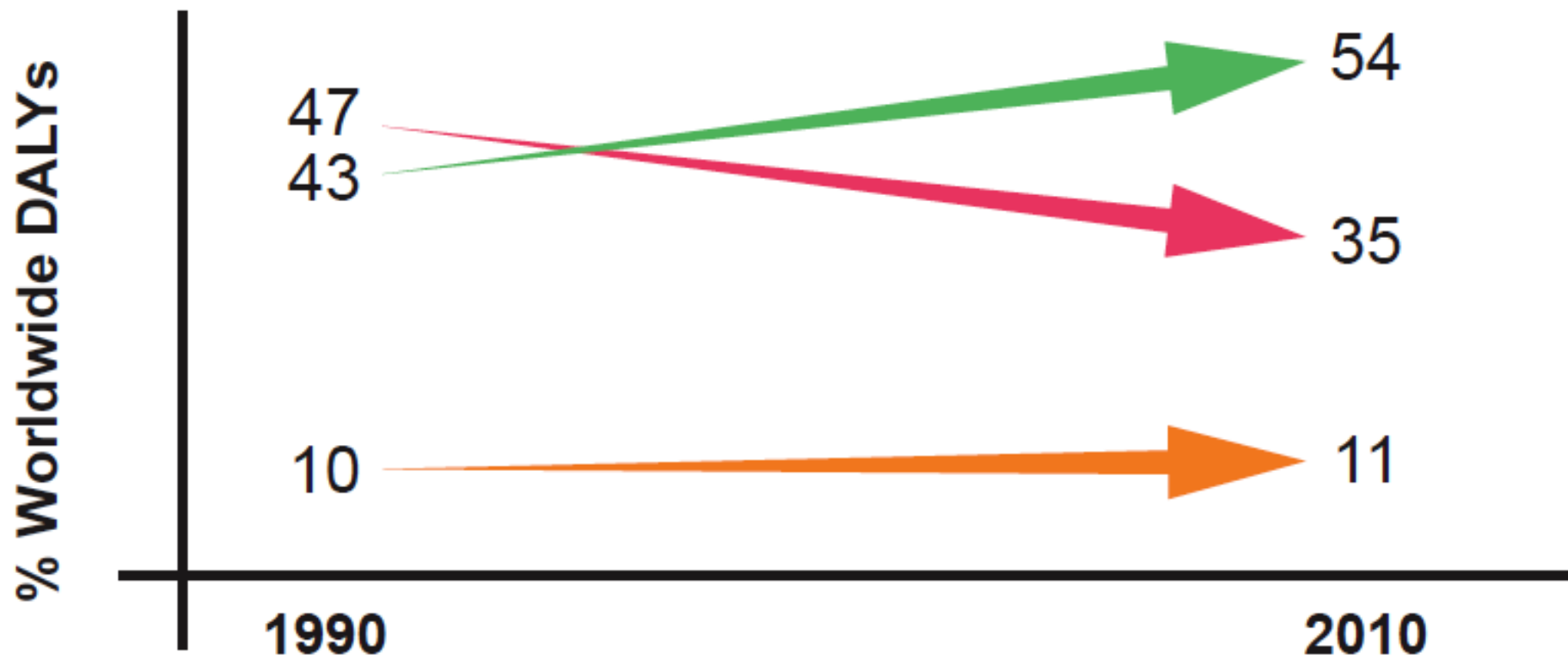
Percent population without access to safe, affordable, surgery and anesthesia when needed by country

Handicapped by Preconceived Notions

“Surgical care is too expensive to implement in LMICs when competing with other types of interventions to improve health.”

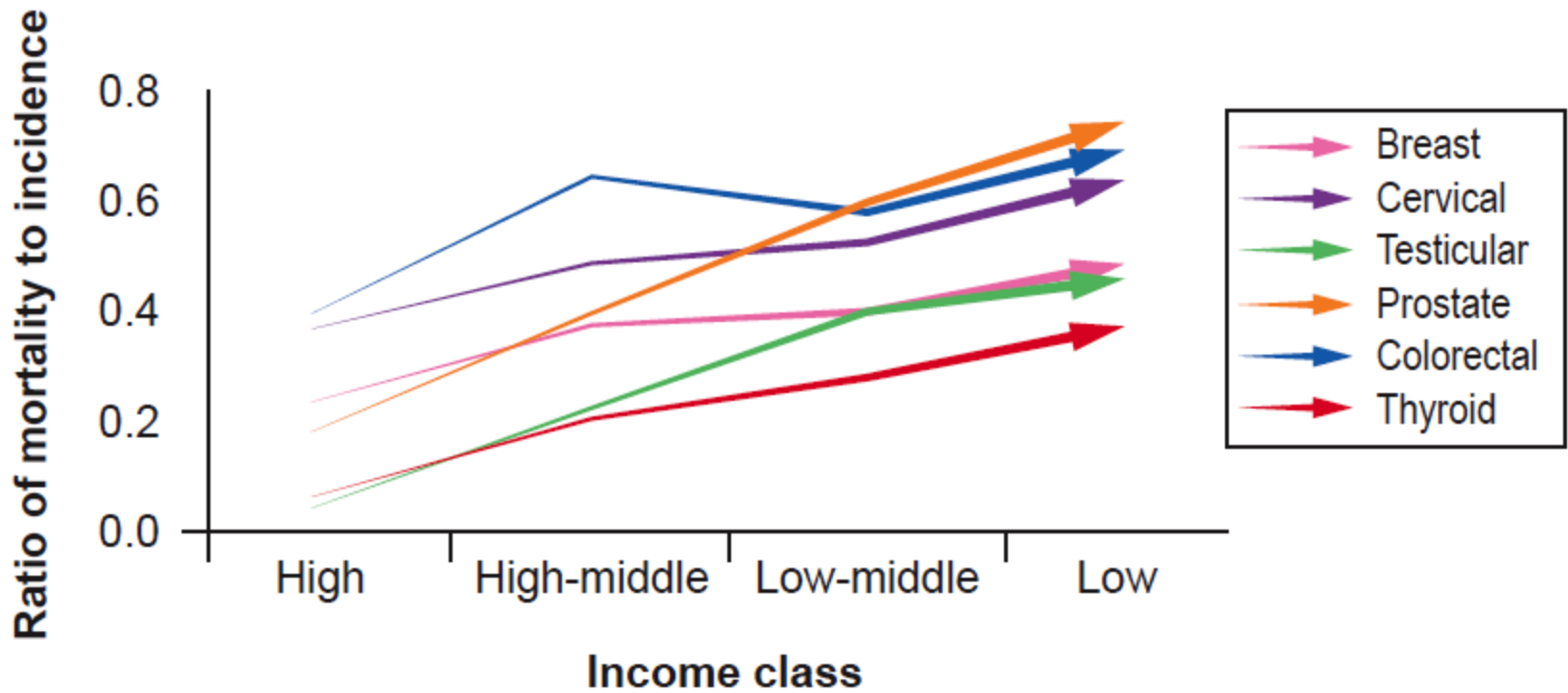


Shift in Disease Burden 1990-2010



- Communicable, maternal, neonatal, nutritional
- Non-communicable
- Injuries

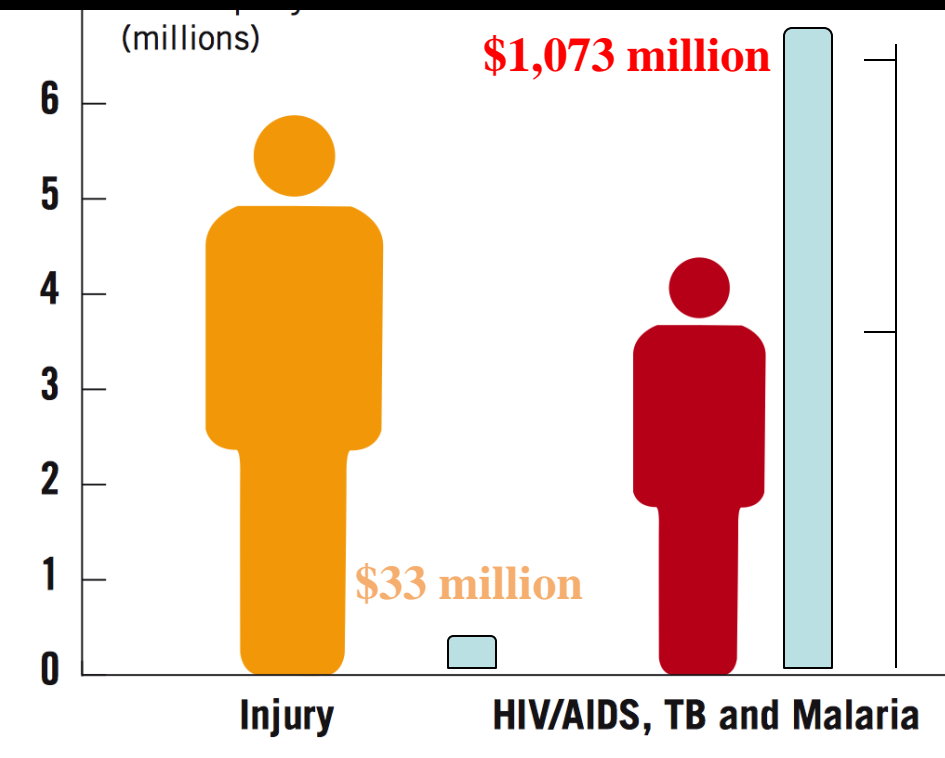
Ratio of Mortality to Incidence by Solid Tumor Type and Country Income (2008)





INJURY: 5.8 million deaths

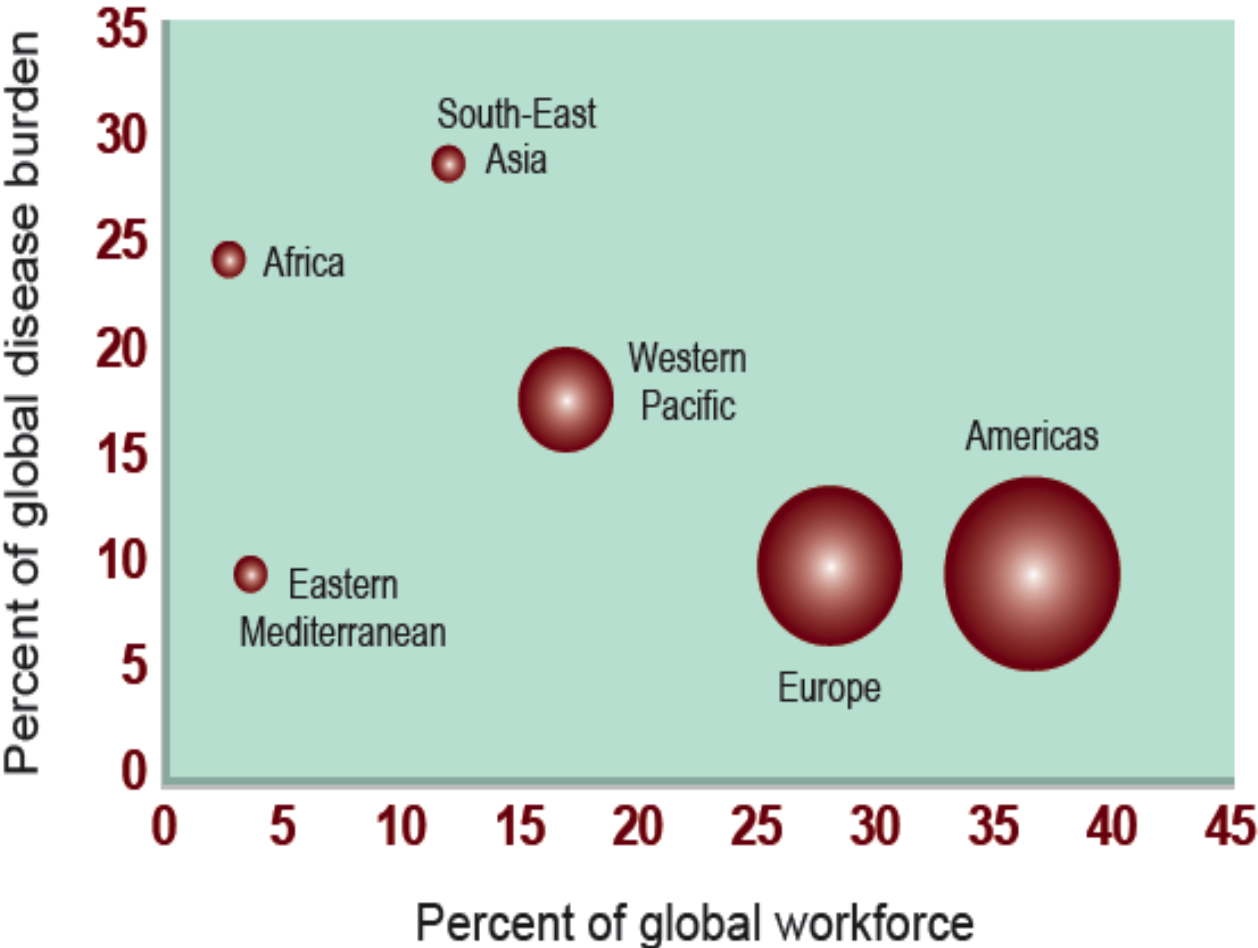
US Global Research and Development Funding



1.24 million deaths from Road Traffic Injuries
20-50 million non-fatal injuries

Injuries and violence: the facts. Geneva, World Health Organization, 2010.

Distribution of Healthcare Workers by Burden of Disease in WHO Regions



Africa suffers from 24% of the global burden of disease but has access to only 3% of health workers and less than 1% of the world's financial resources.*

* Even with grants and loans from abroad.

The lack of surgical care in much of the world cannot be solved simply through the spirit of volunteerism.

Beyond volunteerism:

Augmenting surgical care in resource-limited settings



Charitable Platforms in Global Surgery

- **Temporary**
 - Short-term
 - Self-contained



- **Surgical Specialty Hospital**



Mongolia: Trauma



Chinggis Khaan!

Laparoscopy in Mongolia

Introduced in 1994



“Buck” Rusher

Ganbold

Otgondaiai

Nyamkhuu

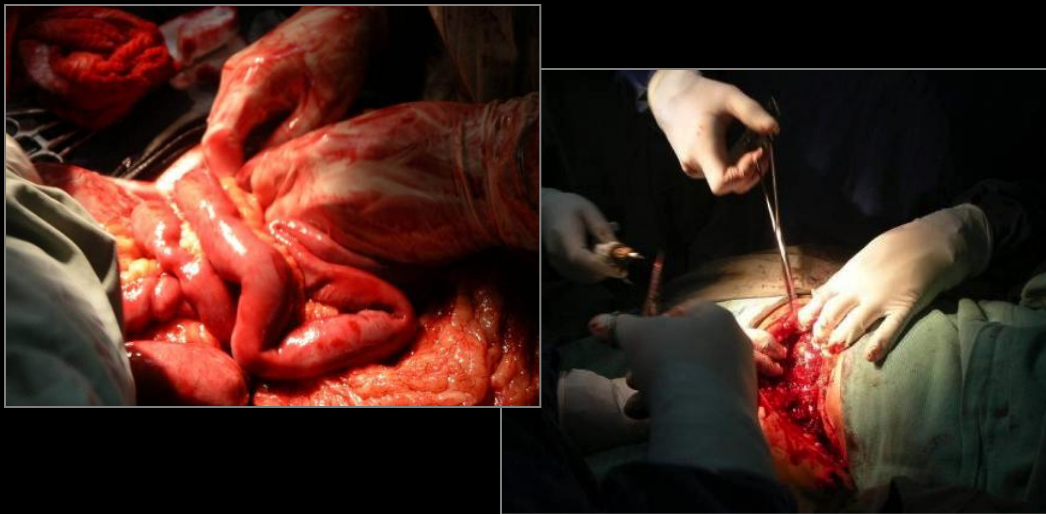
By 2005

- Only 2% of gallbladder surgeries were performed laparoscopically
- Only in the capital city, Ulaanbaatar



Should laparoscopic cholecystectomy be practiced in the developing world?

“Proper teaching and training in traditional surgery... is probably more essential than training for a technologically complex task like laparoscopy.”



Sandro Contini, MD

“Introduction and further development of laparoscopic surgery in Mongolian surgical practice is demanded.”

--- Dr. Sergelen



Countrywide Expansion of Laparoscopy in Mongolia

1. Maneuvering the local political and medical system
2. Implementing methods for sustainable infrastructure development
3. Developing an appropriate education model
 1. Didactic curriculum
 2. A functional practical component
 3. Trains multi-specialty team members



7

3 Expanding Laparoscopic Cholecystectomy to Rural Mongolia

4 Catherine M. Straub · Raymond R. Price ·
5 Douglas Matthews · Diana L. Handrahan ·
6 Davaatseren Sergelen



Social Marketing

Personal Stories: Oyunbayar

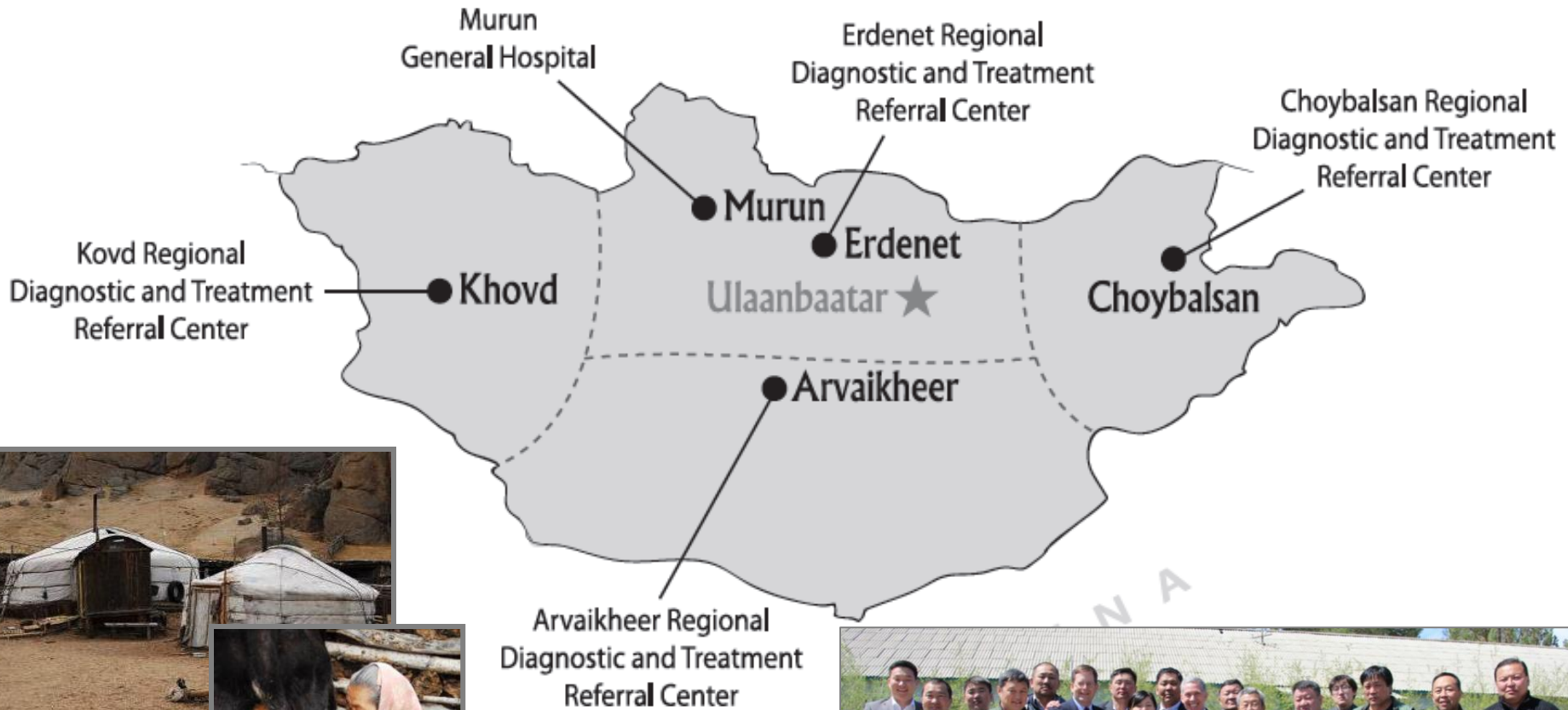


Educating the Masses



Regional Diagnostic Treatment Referral Centers of Mongolia

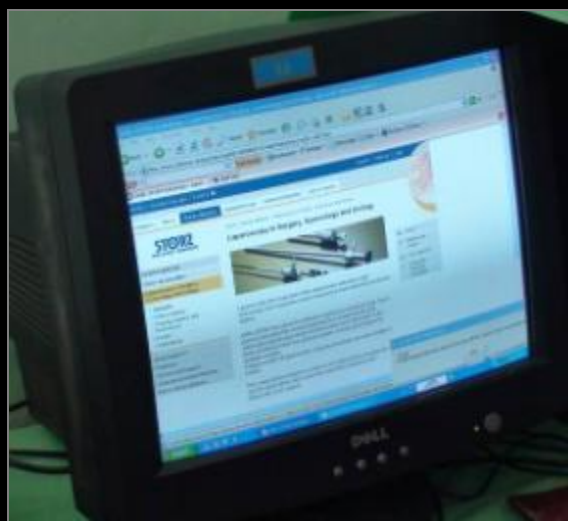
WC Swanson Family Foundation/ SAGES Laparoscopic and Emergency and Essential Surgical Skills Training



Sustaining Laparoscopy: Supply Line



Serge - Irkutsk



Oluf - Moscow



Longitudinal Educational Infrastructure Development

Training Center: Government Hospital #2, Ulaanbaatar, Mongolia



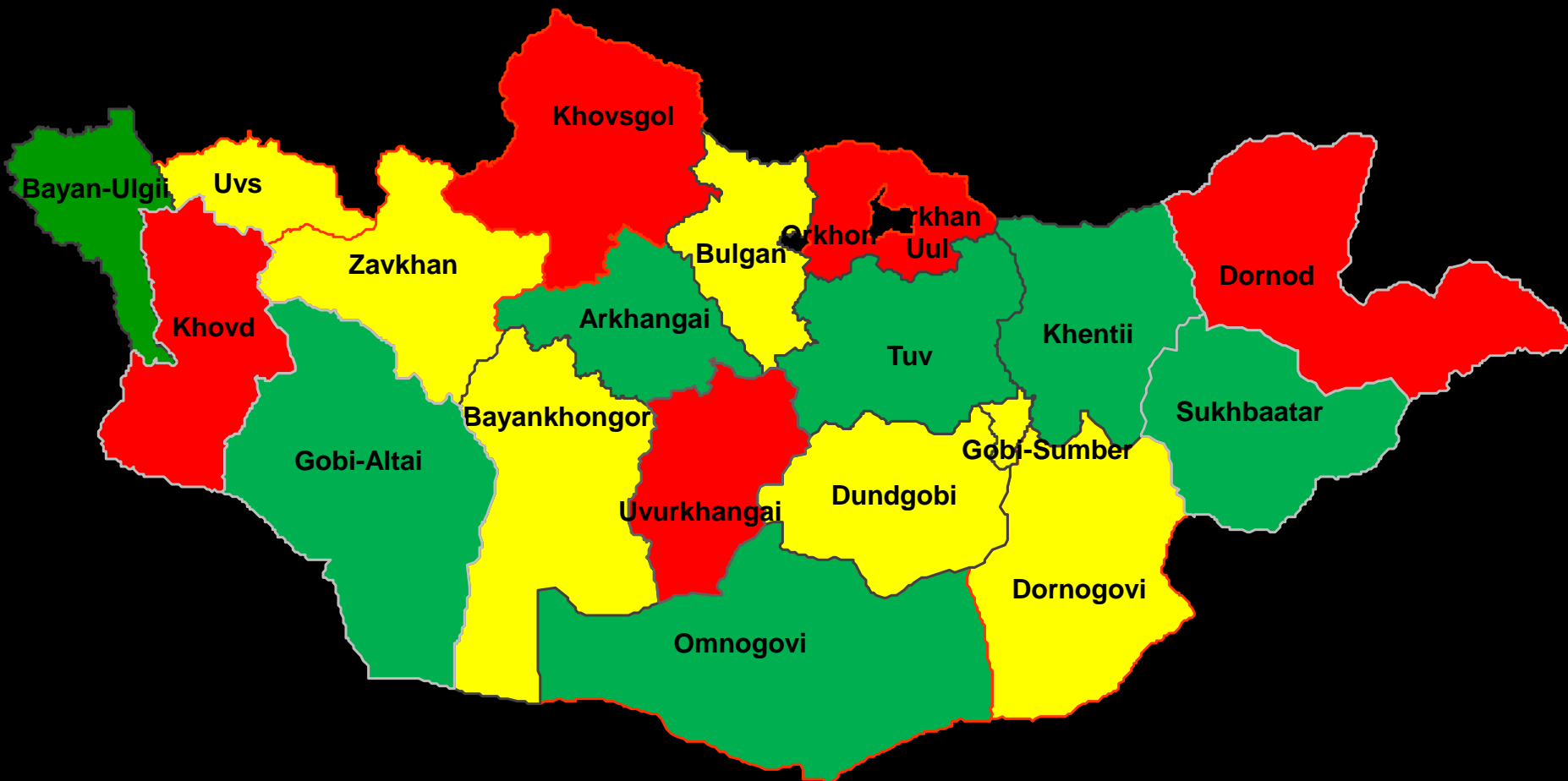
Dr. Erdene

Director of Laparoscopic
Training

Health Sciences University
of Mongolia



Countrywide Expansion of Laparoscopy in Mongolia

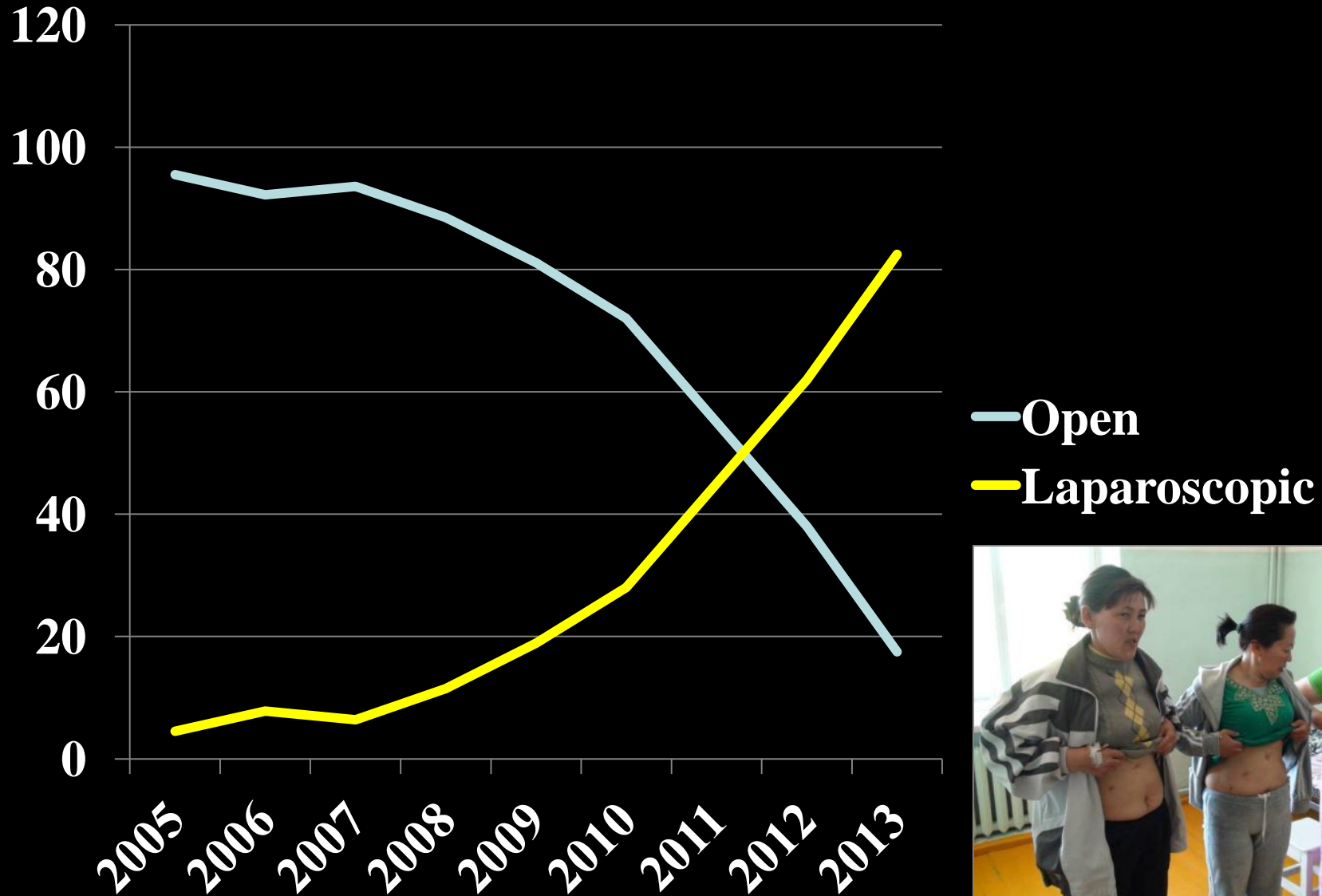


Red - Laparoscopic surgery was developed with the help of Swanson, SAGES

Green – Internal trainers

Yellow – Ministry of health will be financing the facility in 2014-2015. Needed training programme

Cholecystectomy Trends in Mongolia



Perception of Physicians and Patients about Laparoscopy in Mongolia

Conclusions



- **100% of physicians feel Lap Surgery has benefitted Mongolia**
- **76% patients would undergo Lap Surgery**
- **Travel not a barrier**
- **Largest barrier was time of surgical work-up/diagnosis, cost**
- **Cost not as large a barrier as presumed**
- **High physician retention rate in Mongolia**

Center for
Global
Surgery

Katie Wells MD

Laparoscopy as a Technological Enabler for Improved Healthcare



Erdenet

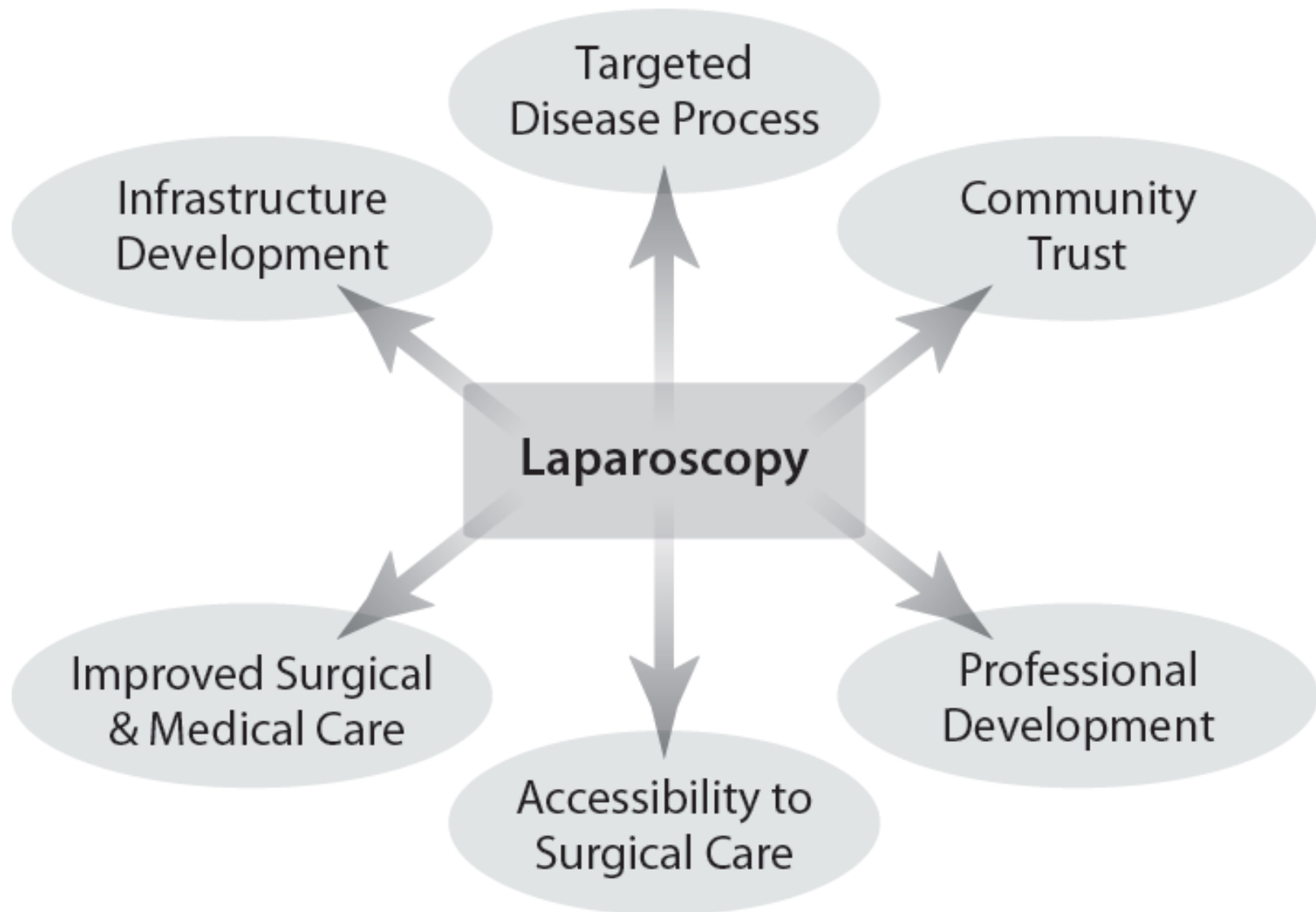


Khovd



Arvikheer

Laparoscopy: A Mechanism to Build Sustainable Surgical and Medical Care





BIOWORLD
THE UNIVERSITY OF UTAH



**LASSONDE
ENTREPRENEUR INSTITUTE**
THE UNIVERSITY OF UTAH



i-test device

**Strep, flu,
rhinovirus,
dengue fever
and malaria**



Commission examined different scenarios for scale-up of surgical care from 2012-2030 + associated investments

- Current rates of scale-up vs. aspirational rates



22.5 % annual surgical growth rate



8.9 % annual surgical growth rate

Surgical conditions exert substantial macro-economic impacts

- **\$9.2 trillion in cumulative projected losses** in economic productivity from surgical conditions in LMICs between 2015-2030
- Main causes of losses: **injuries** and **cancers**



Total scale-up costs for **88 LMICs** over the period **2012-2030** was about **\$300-420 billion USD***

- **\$1.1 billion annually for 33 LICs** (4% annual health exp.)
- **\$8.4 billion annually for 33 lower-MICs** (4% annual health exp.)
- **\$7.0 billion annually for 22 upper-MICs** (1% annual health exp.)

Scale-up of surgical care must be viewed as an investment, not a cost

*using Mongolian rates of scale-up

Self-Contained Temporary Platform

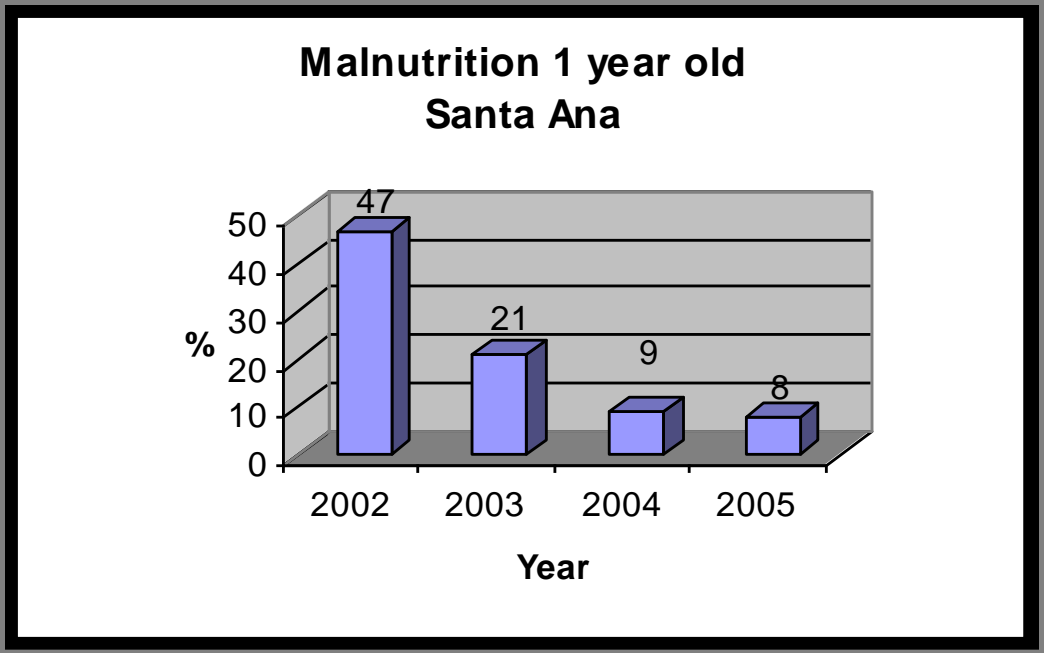
For many years, Dr. Rodas
visited remote areas of
Ecuador by plane, donkey,
or by foot, organizing teams
of volunteers



THE EFFECTS OF SURGERY ON THE COMMUNITY

Cinterandes Foundation

The Integral Family Health Plan



Paves way for integration of other healthcare interventions

Medical Diplomacy

American humanitarian assistance is “often key to demonstrating benevolence and goodwill abroad and countering ideological support for terrorism.”



Jeffrey D. Allred, Deseret News

The Pentagon’s Joint Chiefs of Staff, The National Military Strategic Plan for the War on Terrorism

Impact of American Humanitarian Leadership in Potentially ‘Hostile’ Regions

	<u>Favorable View towards US</u>
• Indonesia: Tsunami 2004	63%
Bangladesh	95%
• Pakistan: Earthquake 2005	78%

Sustainable impact not only in reversing negative attitudes towards the US but also decreasing popular support for global terrorists

“The role of international volunteer service in building bridges across growing global divides has never been more critical to the future of our nation, and global peace and stability.”



Brookings Institute policy group

Haiti Earthquake 2010

January 15-31, 2010



Disaster Response Team
The Church of Jesus Christ of Latter-day Saints

...for the UN, this is the worst disaster in its history. The entire basic infrastructure of the country was decimated severely handicapping the Haitian ability to respond effectively.

Edmund Mulet, Acting Special Representative of the Secretary-General for Haiti



Dirk Noyes

**Justice
Department**



Henri Ford MD

**One million people living in tents
and makeshift shelters**

300,000 dead



January 12-14

Estimated 1500 patients

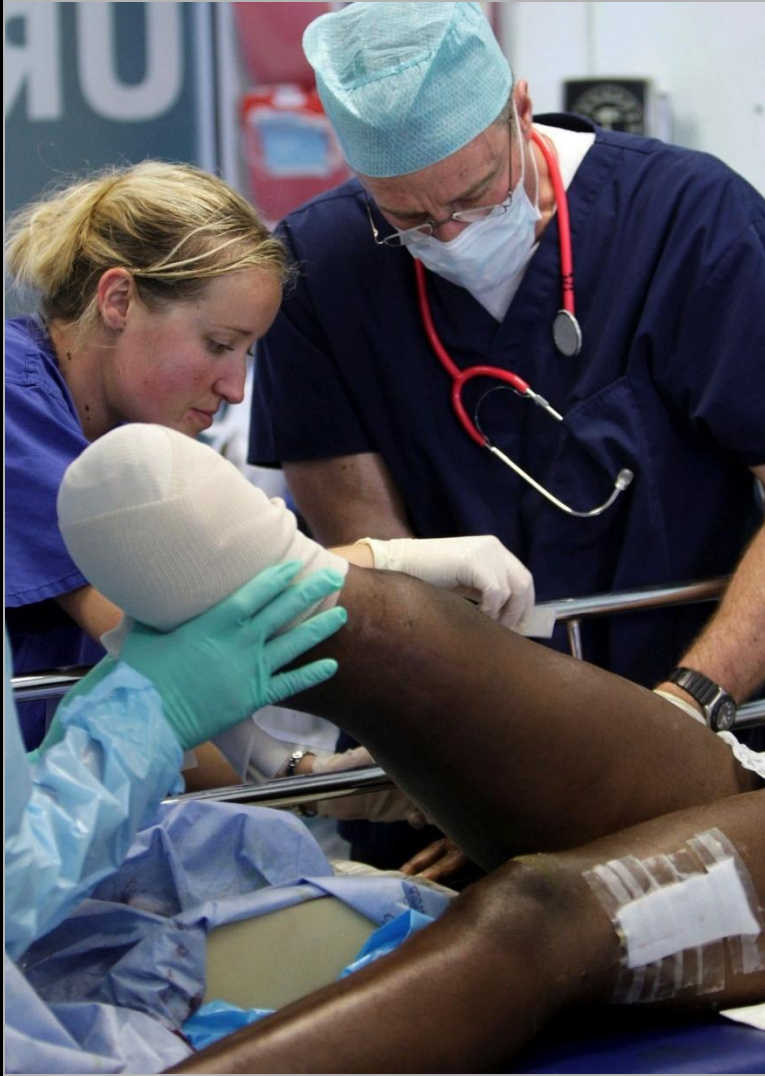
January 15-30

2148 wounded

- **3 employees were killed in the earthquake.**
- **15 were injured to the point of incapacitation.**
- **Approximately 70 (40%) lost an immediate family member.**
- **Approximately 50 (30%) lost their homes.**



Jeffrey D. Allred, Deseret News



Jeffrey D. Allred, Deseret News



Dirk Noyes MD



Jeffrey D. Allred, Deseret News



Dan Egan MD



Dan Egan MD





Jeffrey D. Allred, Desert N



U.S. Comfort

ETHIOPIA



Scale 1:51,400,000

Surgical Specialty Hospital

Addis Ababa, Ethiopia



Preparing for Surgery



Postoperative Ward Fistula Hospital





Education and Rehabilitation



85 % return to normal society



Previous patient returns for delivery

Future Trends for Global Surgery Initiatives

**Primarily
Clinical Care**



Capacity Building



- **Clinical care**
- **Education**
- **Research**
- **Innovation**
- **Advocacy**

**It is often
unrecognized that
acceptable, affordable
surgical care requires
advocacy on behalf of
patients and
communities.**

World Health Assembly Resolution



A D V O C A C Y

IT IS OFTEN UNRECOGNIZED THAT ACCESSIBLE, AFFORDABLE SURGICAL CARE REQUIRES ADVOCACY ON BEHALF OF PATIENTS AND COMMUNITIES IN WASHINGTON, D.C.



May
2014



Sixty-seventh World Health Assembly



Coordinator of the African Group of Health Experts

- **WHA Executive Board (EB) unanimously passed the EB Agenda Item “Strengthening Emergency and Essential Surgical Care and Anesthesia as a Component of Universal Health Coverage”**
- **Will be voted on May 2015 at 68th WHA**

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The G4 Alliance

ADVOCATING FOR THE NEGLECTED SURGICAL PATIENT

The Global Alliance for Surgery, Obstetrics, Trauma, and Anesthesia



SEARCH

Center for Global Surgery



To develop the next generation of global healthcare leaders able to innovatively design affordable surgical care, locally and abroad, that is accessible to all through **education, research, service, development and advocacy.**

“Do not let the four walls of the operating room limit your view of the horizon of possibilities.”



-- Dr. Edgar Rodas, University of Utah, 3/27/2013

