Global Health Education for Anesthesiologists

Stanford University
Department of Anesthesia
Ana M. Crawford, M.D.
Disclosures

• None
Objectives

• Provide a History of Global Health

• Define Global Health

• Discuss the Global Burden of Disease, Disability Adjusted Life Years (DALYs), and the Millennium Development Goals.

• Suggest a Role for Anesthesiologists in Global Health

• Describe the Global Health Program in the Department of Anesthesia: Past, Present, Future
History of Global Health: Kenya 2005
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France 1851: 1st International Sanitary Conference

1911: Flexner Report

1920: League of Nations Health Organization

1943: United Nations Relief and Rehabilitation Agency

1978: Alma-Ata Conference and Declaration

History of Global Health: Kenya 2005

1998:
IOM defines global health

1999:
World Health Report

2000:
UN Millennium Summit → Millennium Development Goals

2008:
WHO launches Maximizing Positive Synergies Collaboration Group

1998-2000:
Global Health Initiatives launched

2015:
Millennium Development Goals due date
Objectives

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- **Define Global Health**
- Discuss the Global Burden of Disease, Disability Adjusted Life Years (DALYs), and the Millennium Development Goals.
- Suggest a Role for Anesthesiologists in Global Health
- Describe the Global Health Program in the Department of Anesthesia: Past, Present, Future
What is the definition of Global Health?

- “Health problems, issues, and concerns that transcend national boundaries and may best be addressed by cooperative actions...”
  
  Institute of Medicine, 1998
What is the definition of Global Health?

• “...good health is a state of complete physical, social and mental well-being, and not merely the absence of disease or infirmity.”

WHO Definition of Health 1946
What is the definition of Global Health?

• “Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.”

  Universal Declaration of Human Rights 1948
What is the definition of Global Health?

• “…global health is an area for study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide. Global health emphasizes transnational health issues, determinants, and solutions; involves many disciplines within and beyond the health sciences and promotes interdisciplinary collaboration; and is a synthesis of population based prevention with individual-level clinical care.”

Koplan, Bond, Merson 2009
What is the definition of Global Health?
What is the definition of Global Health?

• Answer:
  – No sole accepted definition
  – Broad
  – Non-limiting
  – Multidisciplinary
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• Describe the Global Health Program in the Department of Anesthesia: Past, Present, Future
Global Burden of Disease
Global Burden of Disease
## Ten leading causes of burden of disease, world, 2004 and 2030

<table>
<thead>
<tr>
<th>Disease or injury</th>
<th>As % of total DALYs</th>
<th>Rank</th>
<th>Disease or injury</th>
<th>As % of total DALYs</th>
<th>Rank</th>
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</thead>
<tbody>
<tr>
<td>Lower respiratory infections</td>
<td>6.2</td>
<td>1</td>
<td>Unipolar depressive disorders</td>
<td>6.2</td>
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<tr>
<td>Diarrhoeal diseases</td>
<td>4.8</td>
<td>2</td>
<td>Ischaemic heart disease</td>
<td>5.5</td>
<td>2</td>
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<tr>
<td>Unipolar depressive disorders</td>
<td>4.3</td>
<td>3</td>
<td>Road traffic accidents</td>
<td>4.9</td>
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<tr>
<td>Ischaemic heart disease</td>
<td>4.1</td>
<td>4</td>
<td>Cerebrovascular disease</td>
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<tr>
<td>HIV/AIDS</td>
<td>3.8</td>
<td>5</td>
<td>COPD</td>
<td>3.8</td>
<td>5</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>3.1</td>
<td>6</td>
<td>Lower respiratory infections</td>
<td>3.2</td>
<td>6</td>
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<tr>
<td>Prematurity and low birth weight</td>
<td>2.9</td>
<td>7</td>
<td>Hearing loss, adult onset</td>
<td>2.9</td>
<td>7</td>
</tr>
<tr>
<td>Birth asphyxia and birth trauma</td>
<td>2.7</td>
<td>8</td>
<td>Refractive errors</td>
<td>2.7</td>
<td>8</td>
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<tr>
<td>Road traffic accidents</td>
<td>2.7</td>
<td>9</td>
<td>HIV/AIDS</td>
<td>2.5</td>
<td>9</td>
</tr>
<tr>
<td>Neonatal infections and other*</td>
<td>2.7</td>
<td>10</td>
<td>Diabetes mellitus</td>
<td>2.3</td>
<td>10</td>
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<tr>
<td>COPD</td>
<td>2.0</td>
<td>13</td>
<td>Neonatal infections and other*</td>
<td>1.9</td>
<td>11</td>
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<tr>
<td>Refractive errors</td>
<td>1.8</td>
<td>14</td>
<td>Prematurity and low birth weight</td>
<td>1.9</td>
<td>12</td>
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<tr>
<td>Hearing loss, adult onset</td>
<td>1.8</td>
<td>15</td>
<td>Birth asphyxia and birth trauma</td>
<td>1.9</td>
<td>15</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>1.3</td>
<td>19</td>
<td>Diarrhoeal diseases</td>
<td>1.6</td>
<td>18</td>
</tr>
</tbody>
</table>
Millennium Development Goals

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria and other diseases
7. Ensure environmental sustainability
8. Global partnership for development
Objectives

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• Discuss Disability Adjusted Life Years (DALYs), the Global Burden of Disease, and the Millennium Development Goals.

• **Suggest a Role for Anesthesiologists in Global Health**

• Describe the Global Health Program in the Department of Anesthesia: Past, Present, Future
Global Burden of Disease: Anesthesiologist Role
Global Burden of Disease: Anesthesiologist Role

Other: 89%

Surgical: 11%
Global Burden of Disease: Anesthesiologist Role

- Injuries: 47%
- Malignancies: 24%
- Congenital Anomalies: 11%
- Pregnancy related: 7%
- Cataracts: 6%
- Perinatal Conditions: 5%
Global Burden of Disease: Anesthesiologist Role

- Republic of Mali: 1 anesthesiologist for every 396,875 people (population: 12.7 million)
- Republic of Rwanda: 1 anesthesiologist for every 808,333 people (population: 9.7 million)
- United States of America: 1 anesthesiologist for every 7,268 people (population: 307 million)
- Republic of Uganda: 1 anesthesiologist for every 1.5 million people (population: 31.7 million)

http://www.asahq.org/GHO
Global Burden of Disease: Anesthesiologist Role
Global Burden of Disease: Anesthesiologist Role

• **Buzz Words:** Capacity Building

![Diagram](https://via.placeholder.com/648x370)

Global Burden of Disease: Anesthesiologist Role

- Buzz Words: Health Systems Strengthening

Diagram:
- Healthcare Personnel
- Health Information Systems
- Health Infrastructure
- Governance

HSS
Objectives

• Provide a History of Global Health

• Define Global Health

• Discuss Disability Adjusted Life Years (DALYs), the Global Burden of Disease, and the Surgical Burden of Disease.

• Suggest a Role for Anesthesiologists in Global Health

• Describe the Global Health Program in the Department of Anesthesia: Past, Present, Future
Our Anesthesia Global Health Program: Where have we been?

• According to AAMC (Association of American Medical Colleges) data: there has been a significant increase in the number of medical students that participate in overseas clinical activities (from 6% a decade ago, to almost 40% since 2000)

http://rwjms.umdnj.edu/global_health/index.html
Our Anesthesia Global Health Program: Where have we been?

I will keep them from harm and injustice.
Our Anesthesia Global Health Program: Where have we been/are we now?

- Teaching Outside of Resources
- Medical Tourism
- Lack of Educational Focus
- Procedural Practice for Trainees
- Lack of Surgical Follow up
- Lack of Capacity Building

“The Surgical Mission”
Our Anesthesia Global Health Program: Where have we been/are we now?

- In a low resourced setting, what are you going to do when......
  - 4 yo with CV collapse on induction
  - Anaphylactic drug reaction with shock
  - Late surgical complications such as wound infections
  - TOF in an infant who will otherwise die
    • managing post-operatively? long term?
  - Scoliosis surgery with lack of blood products
  - Asked to teach surgical techniques or procedures
Our Anesthesia Global Health Program: Where have we been/are we now?

- Other Ethical Considerations for sending our trainees?

  - Unable to recognize serious or rare conditions
  - Unskilled in procedures
  - Unfamiliar with syndromic approach to diagnosis
  - Language barriers impair understanding during interviews
  - Blood-borne infections
  - Cultural Barriers impede understanding
  - Stress and guilt in trainee for actions taken
  - Responsibility exceeds capability
  - Overburdened local staff
  - Road traffic accidents
Our Anesthesia Global Health Program: Where are we going?
Our Anesthesia Global Health Program: Where are we going?

• “There is no evidence that the number of medical trainees who have visited an international location correlates with improved health outcomes in that setting.”

Jane Philpot, MD 2010
Our Anesthesia Global Health Program: Where are we going?

• Why are we building a Global Health division?

- Motivations to suppress
- Motivations to tolerate
- Motivations to which we aspire
Global Health

We can impact GBoSD
We can increase GH Research
We can strengthen academic partnerships
We can inspire good governance and organization through anesthesia societies
We can become global patient advocates

Anesthesia
Our Anesthesia Global Health Program: Where are we going?

Short Term Missions

Capacity Building

Bad Outcomes

Paternalism

Academic Partnerships

Ethical Considerations

Improve Infrastructure

Advance GH Research
Our Anesthesia Global Health Program: Where are we going?

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   1.5 Resident Opportunities, Seminars and Courses
   1.6 2011-2012 "Hot" Topics in Global Health Noon Series

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   2.2 Trip Reports
   2.3 Brazil Exchange Program
   2.4 Partnerships
   4. Special Thanks to Our Advisory Board

News, Events and Opportunities

2012 Medical Mission Trip to Haiti Needs Volunteers:
Volunteer in a medical clinic in Haiti. Contact Dr. Natacha Telsuca at ntelsuca@gmail.com or (click here) for more information.

Yale/Stanford Johnson & Johnson Global Health Scholars Program
The program strengthens healthcare infrastructure and diagnostic skills at host settings, works to diminish "brain drain" from the developing...
Our Anesthesia Global Health Program: Where are we going?
Our Anesthesia Global Health Program: Where are we going?

<table>
<thead>
<tr>
<th>Locations</th>
<th>Faculty</th>
<th>Affiliation</th>
<th>Cases</th>
<th>Calendar</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gitwe, Rwanda</td>
<td>Andrew Patterson, MD (Jeremy Collins for 2013)</td>
<td>Medical Missions for Children</td>
<td>Thyroidectomy, Cleft Lip, Cleft Palate</td>
<td>Typically March</td>
<td><a href="mailto:ajpanes@stanford.edu">ajpanes@stanford.edu</a></td>
</tr>
<tr>
<td>Kigali and Butare, Rwanda</td>
<td>Ana M. Crawford, MD</td>
<td>ASA/CASIEF</td>
<td>Teaching Anesthesia to Rwandan residents: Didactic and intra-operative</td>
<td>May</td>
<td><a href="mailto:ana9120@stanford.edu">ana9120@stanford.edu</a></td>
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<tr>
<td>Nicaragua/Guatemala</td>
<td>Ed Riley, MD (anesthesia)</td>
<td>Private</td>
<td>Pediatric Ophthalmology (20-25 cases over 1 week)</td>
<td>Variable</td>
<td><a href="mailto:edriley@stanford.edu">edriley@stanford.edu</a></td>
</tr>
<tr>
<td>Philippines</td>
<td>Ed Mariano</td>
<td>1) Philippine American Group of Educators and Surgeons (PAGES) 2) Project Perfect World (PPW)</td>
<td>1) Craniofacial birth defects and deformities related to burn injuries 2) Pediatric orthopedic surgery</td>
<td>Variable</td>
<td><a href="mailto:ermariano@gmail.com">ermariano@gmail.com</a></td>
</tr>
<tr>
<td>Bangladesh/India/Venezuela/Guatemala</td>
<td>Fred Mihm, MD (anesthesia)</td>
<td>Rotaplast, Interplast</td>
<td>Cleft lip and palate, Microtia repair, Burn contractures, Hand surgery</td>
<td>Variable</td>
<td><a href="mailto:fmihm@stanford.edu">fmihm@stanford.edu</a></td>
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<tr>
<td>Cusco, Peru</td>
<td>Ethan Jackson, MD (anesthesia)</td>
<td>Medical Missions for Children</td>
<td>Microtia repair, cleft lip and palate repair</td>
<td>Typically May</td>
<td><a href="mailto:ethanjackson@yahoo.com">ethanjackson@yahoo.com</a></td>
</tr>
<tr>
<td>Imo State, Nigeria</td>
<td>David Spain, MD (surgery) Periklis Panousis, MD (anesthesia)</td>
<td></td>
<td>Variety of Pediatric and Adult general surgery cases</td>
<td>December</td>
<td><a href="mailto:dspain@stanford.edu">dspain@stanford.edu</a>, <a href="mailto:panousis@stanford.edu">panousis@stanford.edu</a></td>
</tr>
<tr>
<td>Guatemala</td>
<td>Vicki Ting, MD (anesthesia)</td>
<td></td>
<td></td>
<td>July/August</td>
<td></td>
</tr>
</tbody>
</table>

Click here to view this table on a separate page.
Our Anesthesia Global Health Program: Where are we going?

Projects for Faculty:

– anesthesia@rwandahrh.com
Our Anesthesia Global Health Program: Where are we going?

- Projects for Faculty:

  Stanford University Center for Innovation in Global Health

  **Novel Education Clinical Trainees and Researchers (NECTAR) Program in Zimbabwe**

  The Medical Education Partnership Initiative (MEPI) is a NIH program to transform medical education in 11 sub-Saharan African countries. Stanford University’s Center for Innovation in Global Health has partnered with the University of Zimbabwe College of Health Sciences (UZCHS) and the University of Colorado Denver in receiving a 10-million dollar grant to establish the Novel Education Clinical Trainees and Researchers (NECTAR) Program in Zimbabwe. In addition, UZCHS received two pilot grant awards, of which 2.5 million is dedicated to Cardiology and another 2.5 million is dedicated to Mental Health.

  This is a five-year partnership to improve medical education and to strengthen medical research and clinical training which will be led by Principal Investigator James Hakim, MD at the UZCHS as well as Co-PIs, Michele Barry, MD, FACP, Senior Associate Dean of Global Health at Stanford University and Tom Campbell, MD at the University of Colorado, Denver.

  Meeting the healthcare training needs in Zimbabwe has been difficult due to the decreasing number of faculty members. The strategy of NECTAR is that improvements in the approach to medical education at the medical student and postgraduate levels, coupled with programs to improve faculty training and support and investments in novel educational models and technologies, will lead to improved capacity of UZCHS to meet the healthcare training and research capacity needs of Zimbabwe.

  A Visiting Professors Program is in development and will work to meet the NECTAR goals.

  **NECTAR goals will be accomplished through the following:**
  - Enhance existing medical curriculum in PERFAR areas
  - Provide mentorship to students to ensure that they become exemplary academic medical practitioners in the future
Our Anesthesia Global Health Program: Where are we going?

• Projects for Faculty, Fellows, or Residents:
  – CA-2 and CA-3 residents can now apply for February 2013!

  • Application is on globalanesthesia.stanford.edu
  • Check with your chiefs prior to applying to ensure
Our Anesthesia Global Health Program: Where are we going?

- Projects for Residents:

Yale/Stanford Johnson and Johnson Global Health Scholars Program

Background: This program has partnered over 25 years with overseas sites including:

- Borneo: Alam Sehat Lestari Health in Harmony
- Liberia: JFK Memorial Medical Center
- Rwanda: Kigali, King Faisal Hospital
- South Africa: Church of Scotland Hospital in Tugela Ferry, KwaZulu-Natal
- Uganda: Makerere College of Health Sciences and Mulago Hospital

Read Recent Article on the Impact J&J has had on Stanford Scholars
Our Anesthesia Global Health Program: Where are we going?

- Global Health Fellowship 2013

- Anesthesia in Less Resourced Settings
- Global Health Elements
- Fellowship Curriculum and Field Work
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