Global Burden of Surgical Disease:
American Council of Academic Plastic surgeons

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THE TOUCHING HANDS PROJECT
Challenges in International Orthopaedic/ Plastic Surgeons

- Not enough doctors
- Not enough equipment
- No x-ray
- No assess (remoteness)
- No money

Chantal - Rwanda
Can Hand Surgeons Really Make a Difference?

- Universal access to safe, affordable surgical and anesthesia care when needed saves lives, prevents disability, and promotes economic growth

2016

THE LANCET Commission on Global Surgery
At the launch, World Bank President said:

“Surgical is an indivisible, indispensable component of health care.”
Out of the ~250 million operations performed each year, the world’s poorest third only receive 3.5% of all surgeries.

There are more than 95 million children living with a disability. Fewer than 10 percent attend school.

Every 3 seconds someone is severely burned – 10 million+ people annually in developing countries.
Can Hand Surgeons Really Make a Difference?

- 11-15% of the world’s disability is due to surgically treatable conditions.
- Injuries cause 5.7 million deaths yearly, much more than the 3.8 million deaths caused by malaria, HIV/AIDS and tuberculosis combined.

THE LANCET Commission on Global Surgery
Bone Setter

- Person, typically not formally qualified, who sets broken or dislocated bones
Bone Setter

- Big problem
- Undesirable outcomes
10 year-old fell injuring left forearm, treated by bone setter with tight wrapping
Volkmann’s Ischemic Contracture

- Endemic in countries with bone setters
- More doctors necessary
- In the interim, education is the key
Can We Help?

• Yes we can (sometimes)
Touching Hands & Cure Ethiopia: Match Made in Heaven
Give a man a fish to feed him for a day... Teach a man to fish to feed him for a lifetime.

Freddy & Mesfin

Rick Gardner
Treatment?
Follow-Up 1 Year Later
Severe Volkmann’s
Waad- Chronic Volkmann’s

• 10 year old boy from Iraq
• Both bone forearm fracture at age 4, treated with splinting
• Too tight resulting in compartment syndrome
• Sever Volkmann’s Ischemic contracture of left arm
Preoperative position of hand
The Reverse Commute
Solution
Dorsal Forearm Scar
Tight Thumb & Web Space
Passive Extension
Volar Forearm Exposure
Identification of Proximal Neurovascular Structures
Proximal Median Nerve
Distal Median Nerve
Distal Ulnar Nerve
Distal FDP Tendons
Flexor Slide
Ghani Flap for Web Space
Proximal Nerve Stump Preparation
Sural Nerve Cable Grafting of Median & Ulnar Nerves
Free Musculocutaneous Gracilis Flap
Flap Insetting
Flap after Micro and Insetting
Six Month Follow-up
Burns- Big Burden & Big Problem

• Frequency of burn injuries related to the economic level of the country
• Fire pits, kerosene lamps, and lack of fire retardant clothing
Burns - Cambodia

4-6 million unexploded landmines in Cambodia
Burns- Guatemala
Solution

- Education
- Prevention
- Open flames
  - Guatemala
- Kerosene lamps
- Surgery
Surgery-Reconstructive Ladder

- Let it heal / secondary intention
- Skin grafting
- Flaps
- Tissue expansion
Punita- circa 2013

• 10-year-old Guyana, house fire 2011
• Lowered onto a corrugated roof
• Burns of her arms and legs treated with skin grafting
• Maggots infesting her dressings leading to graft loss
Plantar Burns
Plantar Surface & Hands
Treatment- Feet

FTSG & Fillet Flap- Lesser Toes
Treatment - Hands

FTSG
Outcome - Hands
Ethiopia

Drs. Testfaye and Fufa Circa 2018
Nafessa-Ethiopia Circa 2018

• 10 year old
• 4 years ago fell on a cooking flame
• Mom was not home, rescued by sister
Axillary Burn

- Unable to lift left arm
- No axillary access
Perforator Flap
Early Outcome!
Summary

• Global burden of surgical disease seems overwhelming

• But....

“Never doubt that a small group of thoughtful, committed, citizens can change the world. Indeed, it is the only thing that ever has.”

Margaret Mead
Thank You

Global Quality in Upper Extremity Surgery and Training (Global QUEST) Investigators
Thank You
Challenges in International Orthopaedics

• If fractures treated
• Closed fracture management is the mainstay
Sequelae

- Malunion
- Malunion
- Malunion
- Malunion
Cubitus Varus

- Varus-Do You Want to See Tons?
Guatemala 2013

- 7 cubitus varus
- 7 humeral osteotomies
- !!!!!!
Karen- Honduras 2015

• 11 y F s/p prior fall with right supracondylar fx with resultant cubitus varus malunion
X-rays
Surgery- KISS
Post-Operative
Guatemala Modification
What About the Deformed Forearm?

- Etiology
- Malunion
- Bone loss (infection)
- Brachial plexus injury (muscle imbalance)
The Solution is Often Simple- Renella Trinidad
Surgery - One Bone
What About Problems Too Big?
Chantel- Rwanda referred to THP

- Open humerus fracture
- Treated by medicine man
- Infected
- Humerus autoclaved
- Big problem
The Reverse Commute
Examination
Vascularized Fibula
Distal Humerus
Post-Operative
Subsequent X-rays
Prior To Departing For Rwanda
Video & X-rays from Rwanda