Neurosurgical Volunteerism in the Developing World

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FIENS

Tyrer, A Roy: History of the Foundation for International Education in Neurological Surgery

Neurosurgery 40(2); 379-382, 1997
MISSION STATEMENT

To sustainably improve neurosurgical education and patient care in the developing world

Addressing the critical lack of trained neurosurgeons in the developing world since 1969
What do we bring to help solve the problems?

Our well-meaning educational efforts require:
our sustained presence
and
Our equipment “contributions” require us to:
Teach how to procure it, use it and
maintain it
COMMUNICATION

INTERNET
- Journals
- Listserv

TELEMEDICINE
- Khon Kaen, Danang
- Kenya
- Ethiopia

The problem is internet access
The problems are cost, availability, maintenance and private practice.
TECHNOLOGY

Microscope
Microsurgical Instruments
Endoscope
Spinal Fixation
CSF Shunts
Spinal fixation
Flouoscopy - generally not available

The problems are disposable costs and maintenance
FIENS: criteria for site selection

1. High integrity practitioners (clinical, surgical, didactics)
2. Funding for maintenance of reasonable facilities and instruments
3. Dedicated neurosurgery program

FIENS: volunteer activities

1. Individual volunteer activities at various site
2. Individual volunteer activities at one primary site
3. Multiple and frequent volunteers at one site
4. Organized effort by one volunteer or FIENS to promote a site
Neurosurgical Manpower

26,000 neurosurgeons world-wide

28 nations with populations over 1 million without a neurosurgeon

6600 in Europe 1:120,000
4600 in North America 1:80,000
2500 in South America 1:125,000
5200 in Japan 1:25,000
2400 in China 1:500,000
600 in India 1:1,500,000
370 in Africa 1:1,900,000
19 in Bangladesh 1:6,300,000
14 in Nigeria 1:8,500,000
The worldwide disparities of all aspects of medical care are far greater in the surgical specialties such as neurosurgery.
East Africa is a region of 400,000,000 people without neurosurgical training.

Minimal number of surgeons trained by apprenticeship or experience in other countries.
FIENS Initiative 2007

Develop regional training program for Kenya, Ethiopia, Uganda, and Tanzania

Certification through East African Surgical Association

Curriculum and development in conjunction with FIENS

Materials, drills, and microscopes donated through North American and European sources

Education through volunteer activities
Related sites
Tanzania – Ethiopia – Uganda

Through volunteer activities of multiple parties planned with the concept of North American medical centers adopting training sites (Dyads) as a sister program to help with education, donations, etc.
“Twinning”:
Duke University and New Mulago Hospital in Uganda

2007 Duke University and its Global Health Institute program to provide surplus equipment

Spearheaded by Michael Haglund, MD, Neurosurgeon

Testing the hypothesis that if complex procedures can be performed safely in a developing country with access to improved surgical, anaesthetic and monitoring equipment by virtue of a twinning program, the effort would result in an increase in caseload and complexity is all surgical specialties

2011 Neurosurgery procedures increased by 180% in number and complexity
Single day multiple case performed increased
Utilization of elective operating rooms increased from 43-98%
106% increase in overall surgical procedures
The Republic of the Union of Myanmar

One of the poorest southeast Asian economies – rice

2nd largest producer of opium with textiles, woods products, construction materials, gems, metals, oil and natural gas produces 90% of the world’s rubies

Population 68,000,000
Life expectancy 62.9
Religions 89% Buddhist 4% Christian 4% Muslim
Myanmar
Healthcare in Myanmar

Tens of thousands die yearly from Malaria, Tuberculosis, AIDS, Dysentery and other infectious diseases.

Many will seek care across the border in Thailand at the free Mae Tao Clinic covered by local and international funding.

By World Health Organization’s account, Myanmar’s health care is second only to war-ravaged Sierra Leone.

105 out of 1,000 children do not survive to age 5 compared to Vietnam 19/1000 and USA 7/1000.

Many Burmese live on 1$ per day.
Although population is approximately 62 million, most live outside major cities and cannot come to the city or afford medical costs
Neurosurgery Residency Training

High School graduation age 18
Medical school is 6 years
Internship (Medical or Surgical) 1 year
For all surgeons:
- 3 years for General Surgery Masters Degree
For Neurosurgeons:
- 3 years for Neurosurgery Masters Degree
- 3 years for Neurosurgery Doctorate Degree
- 4-5 years for Neurosurgery clinical training
- most start independent practice at approximately 40
Yangon General Hospital
Yangon General Hospital

Neurosurgical Department
University Medical Unit 1
- Dr. Win Myaing (Director and Vice President of Myanmar Neurosurgical Society)
- Dr. Kyi Hlaing

University Medical Unit 2
- Dr. Myat Thu (Director and President of Myanmar Neurosurgical society)
- Dr. Kyawzwa Aung
- Dr. Maung Maung Aung

Although general surgery residents rotate through the service there are currently two residents applying to the Ministry of Health for permission to join neurosurgery

Dr. Kyi Hlaing and assistant on the wards
Yangon General Hospital: operating rooms
Yangon General Hospital: operating rooms

Operating rooms entrance

Scrub sink

Sterile canister,
Note outdoor fan
Victoria Hospital: Private Practice
Yangon General Hospital: Postoperative Recovery Room

One ventilator available: family must pay for replacement parts
Myanmar December 2014

Under the auspices of FIENS and Dr. Win Myaing, Yangon General Hospital

Team
1. A Steiner - biomedical engineer
2. J Zervos - International Law
3. Liat Shama, MD - ENT endoscopy
4. Jack Rock, MD - Neurosurgery; cranial
5. Tracy Enos – Head nurse HFH Neurosurgery OR
6. Jody Wellwood, CNP- HFH Neurosurgery Intensive Care Unit
7. Kee Park, Md - Neurosurgery; spine
8 Day Schedule

Day 1  Meet staff and potential patients
Day 2  spinal instrumentation course and general lectures
       Ministry of Health meetings
       Hospital administration and medical school meetings
Day 3-5 Spinal operations
       Meetings for members of the group
Day 6  Cranial and pituitary operations
Day 7  Touring
Day 8  Depart Yangon
The Future

Emphasize education

Address distribution and transportation problems

Need governmental and societal support to retain specialists

Establish and maintain training programs

Success only comes when we can establish a sustainable program of high quality local neurosurgical care