CAPACITY BUILDING IN PEDIATRIC GLOBAL HEALTH

UIC Global Health Committee
Arvind Shukla
Lewis Hsu
AiXuan Holterman
aithanh@uic.edu
I have no disclosure
I do not have financial interest in any of the materials discussed

Some of the contents may not reflect the department global health committee’s by my own opinion
At the end of this presentation you will understand

• Some of the BARRIERS to HEALTH INEQUITIES in developing countries
• WHY is SURGERY a Global health burden
• The ETHICAL issues underlying Global Health and Global Health Research
Objectives

• Global Health and the drivers of Global health
• Global Surgery as essential component of global health
• Research as an essential component of global health
• UIC Global Health committee
  Mission and values
  UIC pediatrics GH pilot site
  UIC pediatrics GH Program development opportunities and goals
  (Resident rotation perspectives)
  (Pediatric department survey)
• QA
Definitions

**INTERNATIONAL HEALTH**- applications of the principles of public health to problems and challenges of low and low middle income countries-Merson MH

**GLOBAL HEALTH**

*Consortium of Universities for Global Health*

The area of study, research and practice that places a priority on improving health and achieving equity in health for all people worldwide- Jeffrey Koplan

A discipline that advances efforts to improve the well-being of people and the planet- Keith Martin

**Collaborative trans-national** research and action for promoting health for all- Beaglehole and Bonita, Global Health Action 2010
## The world by income, 2019

Classified according to World Bank estimates of 2017 GNI per capita (current US dollar, Atlas method)

- **Low income** ($995 or less)
- **Lower middle income** ($996 – $3,895)
- **Upper middle income** ($3,896 – $12,055)
- **High income** ($12,056 or more)

### 2017 population by income group

<table>
<thead>
<tr>
<th>Country</th>
<th>Population (millions)</th>
<th>Population density (people per sq.km)</th>
<th>GNI/capita ($)</th>
<th>Income Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burundi</td>
<td>10.9</td>
<td>423</td>
<td>290</td>
<td>LOW INCOME</td>
</tr>
<tr>
<td>Liberia</td>
<td>4.7</td>
<td>49</td>
<td>380</td>
<td></td>
</tr>
<tr>
<td>Nicaragua</td>
<td>6.2</td>
<td>52</td>
<td>2,130</td>
<td>LOW MIDDLE INCOME</td>
</tr>
<tr>
<td>Vietnam</td>
<td>95.5</td>
<td>308</td>
<td>2,170</td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>129.2</td>
<td>66</td>
<td>8,610</td>
<td>UPPER MIDDLE INCOME</td>
</tr>
<tr>
<td>Guatemala</td>
<td>16.9</td>
<td>158</td>
<td>4,060</td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td>8.5</td>
<td>214</td>
<td>80,560</td>
<td>HIGH INCOME</td>
</tr>
<tr>
<td><strong>USA</strong></td>
<td>325.7</td>
<td>36</td>
<td>58,270</td>
<td></td>
</tr>
</tbody>
</table>
HEALTH INEQUITIES in CHILDREN

- 27% world population 0-14 years old
- < 5 years of age - 5.4 M deaths or 15,000 deaths/day
- 2.5 M deaths < 1 month of age

- 6.2 fold difference fold in mortality between HIC and LMIC
- >1/2 deaths preventable

- Access, delays, costs, quality and safety of care at multiple levels

WHO 2018
World bank 2018
WHY INTERESTS IN GLOBAL HEALTH

"Global Health" Publications

<table>
<thead>
<tr>
<th>Year</th>
<th>Publications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>54</td>
</tr>
<tr>
<td>1960</td>
<td>156</td>
</tr>
<tr>
<td>1970</td>
<td>1,137</td>
</tr>
<tr>
<td>1980</td>
<td>27,794</td>
</tr>
<tr>
<td>1990</td>
<td>39,759</td>
</tr>
<tr>
<td>2019</td>
<td>65,355</td>
</tr>
</tbody>
</table>
"If we have no peace, it is because we have forgotten that we belong to each other." — **Mother Teresa**

**MEDICINE and HUMANITARIAN WORK**

To seek welfare of others
DRIVER-THE AGE OF INFORMATICS
DRIVER-GENERATIONAL CHARACTERISTICS

GENERATION Y

Born in the mid-1980's and later, 70 millions professionals

• Work-life balance
• Meaningful work
• Team-oriented

• OPEN MINDED, tolerant of differences
• SOCIAL CONSCIENCE
• Passionate about their causes

GENERATION Z

Born mid 1990s to mid 2000s
23 Millions

“Digital natives”
Internet connectivity
Ethnic diversity
Global awareness

https://www.globalsurgerystudents.org/
• 2016 AAP survey- 56%/1,100 pediatric graduates prefer programs with GH training

• National survey 724 surgical resident responders- 92% interest
  - 82% prefer international rotation over local electives
  - 54% will use vacation time
  - 85% plan to do volunteer work after graduation

• Academic and professional societies-a core training curriculum in GH integrated into pediatric residency training. Stanton, B.Ped Ann 2008, Pitts et al., JAMA Pediatrics 2016

• 73% pediatric training programs offer GH training Pak-Gornstein, S. Pediatrics 2019
(PEDIATRIC) SURGERY and GLOBAL HEALTH
### DALY-Disability-adjusted life year

*# years lost to illness, disability and early death*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV/AIDS</td>
<td>28300</td>
<td>26100</td>
<td>54400</td>
<td>-44.8%</td>
<td>-53.9%</td>
<td>-49.6%</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>28000</td>
<td>17000</td>
<td>45000</td>
<td>-19.1%</td>
<td>-20.6%</td>
<td>-19.7%</td>
</tr>
<tr>
<td>Malaria</td>
<td>24000</td>
<td>21100</td>
<td>45000</td>
<td>-33.0%</td>
<td>-35.4%</td>
<td>-34.2%</td>
</tr>
<tr>
<td>Neonatal preterm birth</td>
<td>38400</td>
<td>31800</td>
<td>70200</td>
<td>-20.9%</td>
<td>-18.7%</td>
<td>-19.9%</td>
</tr>
<tr>
<td>Road injuries</td>
<td>49800</td>
<td>18000</td>
<td>67800</td>
<td>-6.5%</td>
<td>-4.8%</td>
<td>-6.1%</td>
</tr>
<tr>
<td>Pedestrian road injuries</td>
<td>16500</td>
<td>7090</td>
<td>23600</td>
<td>-12.3%</td>
<td>-11.2%</td>
<td>-12.0%</td>
</tr>
<tr>
<td>Digestive congenital anomalies</td>
<td>2970</td>
<td>2220</td>
<td>5190</td>
<td>-16.1%</td>
<td>-9.5%</td>
<td>-13.4%</td>
</tr>
</tbody>
</table>

*Lancet 2018; 392: 1859–922*
• Road-related mortality in LMIC at 1.7-fold the combined fatalities of the “big 3” HIV/TB/malaria
• Injuries-Top causes of death and DALY for 5-14 years  \textit{WHO 2018}
• 187/100K death from acute surgical illness vs 164 for all infection

\textit{Zafar, SN 2011 Surgery}
(PEDIATRIC) SURGERY and GLOBAL HEALTH

A paradigm shift
Emergency and essential surgery-

Conditions “primarily or extensively treated with surgery, have a large health burden and can be successfully treated by surgical procedures that are cost-effective and feasible to promote globally”.

Essential Surgery $ 7-200/DALY averted
Mumps vaccine $ 1.5
Antiviral $ 300-500
Landmark event 2
2015 LANCET PUBLICATION

Meara, JG et al., Lancet 2015
5 Billion cannot access safe surgery when needed

143 million more procedures needed annually at minimum

33 million Individuals face catastrophic expenditures paying for surgery & anaesthesia annually

+ 48 million = 81 million
COSTS OF implementing surgical and anesthesia capacity
2015-2030: 350 Billions USD

Alternative to inaction:
GDP LOSSES 12.3 Trillions USD
Core indicators for monitoring universal access to safe, affordable surgical and anaesthesia care when needed

<table>
<thead>
<tr>
<th>INDICATOR NAME</th>
<th>TARGET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to timely essential surgery</td>
<td>A minimum of 80% coverage of essential surgical and anaesthesia services per country by 2030</td>
</tr>
<tr>
<td>Specialist surgical workforce density</td>
<td>100% of countries with at least 20 surgical, anaesthesia and obstetric physicians per 100 000 population by 2030</td>
</tr>
<tr>
<td>Surgical volume</td>
<td>80% of countries by 2020 and 100% of countries by 2030 tracking surgical volume; A minimum of 5 000 procedures per 100 000 population by 2030</td>
</tr>
<tr>
<td>Perioperative mortality rate (POMR)</td>
<td>80% of countries by 2020 and 100% of countries by 2030 tracking POMR; In 2020, evaluate global data and set national targets for 2030</td>
</tr>
<tr>
<td>Protection against impoverishing expenditure</td>
<td>100% protection against impoverishment from out of pocket payments for surgical and anaesthesia care by 2030</td>
</tr>
<tr>
<td>Protection against catastrophic expenditure</td>
<td>100% protection against catastrophic expenditure from out of pocket payments for surgical and anaesthesia care by 2030</td>
</tr>
</tbody>
</table>
Landmark event 3
WORLD HEALTH ASSEMBLY DECLARATION 2015

SIXTY-EIGHTH WORLD HEALTH ASSEMBLY

Agenda item 17.1

WHA68.15

26 May 2015

Strengthening emergency and essential surgical care and anaesthesia as a component of universal health coverage

The Sixty-eighth World Health Assembly,

Having considered the report on strengthening emergency and essential surgical care and anaesthesia as a component of universal health coverage;

UNIVERSAL ACCESS TO SAFE and AFFORDABLE Surgical and anesthesia care is a HUMAN RIGHT
SURGERY was the NEGLECTED STEPCHILD of GLOBAL HEALTH
PEDIATRIC SURGERY IS THE **UNBORN CHILD** OF GLOBAL HEALTH

• Congenital anomalies-
  0.5 M annual deaths, leading cause of mortality < 5 y/o  *GDB Compare Data Visualization 2016*
  3.2 M with DALY
  9% of Global health burden, 97% in LMIC  *Wright, NJ et al., Lancet 2018*
  2/3 of congenital anomalies are treatable by surgery

• Pediatric surgery-No earmarked fund
  (HIV US funding: 16 Billions USD)

Sitkin, NA, WJS 2015
Global surgery encompasses anesthesia, all surgical specialties including trauma surgery, general surgery, ob-gyn, perioperative medicine, critical emergency medicine, pain management and palliative care, rehabilitation, nursing and other health professions involved in the care of surgical patients.

Global Surgery is defined as an area of study, research and practice that seeks to improve health outcome and achieve health equity for all people who require surgical care with a special emphasis on underserved populations and populations in crisis. It uses collaborative, cross-sectional and trans-national approaches and is a synthesis of population-based strategies with individual surgical care. Dare AJ et al, The Lancet 2014  Juran S et al. Canad J Anesth 2019
Global health encompasses the study, research and practice to improve health and health equity for the underserved and for populations in crisis.

The causes of health inequities are complex. At the patient level, it is poor access, delays in care, gaps in the quality and safety of care and catastrophic costs of care at multiple levels of the health system. Patients are untreated, undertreated and mistreated Bickler et al. Bull WHO 2002

Global health-a collaborative, interdisciplinary, multidisciplinary and transnational endeavor

Global surgery accounts for a third of the global health burden-investing in essential surgery is affordable, saves lives and promotes economic growth
Approaches to GLOBAL HEALTH

Volun "tourism"

Are you spending money and efforts
Are you taking away
Are you investing
INTERVENTIONS

High volume
Short term
Mission

5 operating theaters
82-beds recovery room
CT scan, Xray and lab facilities

126 cabins for volunteer accommodations
Day care facility on deck
28 vehicles for land-based service

3,300 surgeries
37,000 eye and dental procedures

18,000 facial reconstructions in 2012
66 countries
164 missions at 124 sites

$ 68 M operating expenses
$ 40 M monetary donation

Operation Smile

©2011 Mercy Ships
High volume clinical services
Short term volunteerism

• Are you spending money and efforts
  Clinical safaris, surgical brigades, itinerant care
  Can the money be better used to build local capacity

• Are you taking away
  Burden on local institutions to host the international teams
  Promoting and perpetuate dependencies on international teams
  Shifting resources away from the local professionals (training, livelihood)
  “Dumping” your complications or follow-up care, licensing/malpractice issues

• Are you investing
  Paying for experiential exercise vs long term cultural understanding
  Sustainable benefits to the local community/institution
  Building workforce, infrastructure, relationship
  Outcome metrics of your intervention
INTERVENTIONS

Training/Education

American Academy of Pediatrics

WFSA

SAFE Anesthesia

Helping Babies Breathe: The Golden Minute

Helping Babies Survive
GLOBAL HEALTH
The academic perspective

Volun"tourism"

vs

CAPACITY BUILDING

Are you spending money
Are you taking away
Are you investing
University Health Care Systems of the 21st century

• From individual competencies to cross-discipline team competencies

• Clinical service, teaching and research integrated as systems of health care to enhance safety, efficiency and efficacy

• Global orientation to health care
The well being of the academic mission at the core of health care

a. Excellence in patient care
b. Training the future work force and quality of the work force
c. Performing research meaningful to their health
d. Sharing and publishing knowledge

Global Health: Achieving health equity worldwide with a focus on health needs of the underserved. The importance for the comprehensive academic approach to Global Health
POSITION STATEMENT
U.S. SURGICAL SOCIETIES

AMERICAN SURGICAL ASSOCIATION
Global Surgery: Effective Involvement of US Academic Surgery
*Report of the American Surgical Association Working Group on Global Surgery*

*Annals Surg, 2018*

AMERICAN PEDIATRIC SURGICAL ASSOCIATION
Guidelines and checklists for short-term missions in global pediatric surgery: Recommendations from the American Academy of Pediatrics Delivery of Surgical Care Global Health Subcommittee, American Pediatric Surgical Association Global Pediatric Surgery Committee, Society for Pediatric Anesthesia Committee on International Education and Service, and American Pediatric Surgical Nurses Association, Inc. Global Health Special Interest Group

*J Ped Surg, 2018*

SOCIETY OF UNIVERSITY SURGEONS
An academic career in global surgery: a position paper from the Society of University Surgeons Committee on Academic Global Surgery

*Surgery, 2018*

LOCAL PRIORITIES
LOCAL SUSTAINABILITY
BUILD/STRENGTHEN CAPACITY
HEALTH SYSTEMS

ENGAGEMENT
BIDIRECTIONAL-TWINNING
MUTUALLY BENEFICIAL
PARTNERSHIP-TWINNING

BEST PRACTICES
RESEARCH is AN ESSENTIAL COMPONENT TO CAPACITY BUILDING in GH

1. Strengthening research capacity in LMIC – “one of the most powerful, cost effective, and sustainable means of advancing health and development. Commission on Health Research for Development, Sitthis-Amon C, BMJ 2000

2. <10% of international clinical trials addressing LMIC needs are locally led. Franzen, SR BMJ 2016

3. WHO-aiming for LMIC as producers and users of research. Dyes C, WHO 2013
Vertical vs horizontal capacity building

- Disease eradication (TB/Malaria/HIV) or specialty-specific program (anorectal malformations, ...)
  - Focused
  - High impact
  - Low cost
  - Well funded
  - BUT less interdependent with health systems

- Building health systems
  - Patient safety, quality interventions
  - Multidisciplinary Research
  - Global surgery
    - surgery-anesthesia-ICU-nursing-rehabilitation
    - trauma-emergency medicine-ICU-nursing-rehabilitation
Lewis Hsu DISCLOSURES

- **Research grants** - Global Blood Therapeutics, Pfizer, AstraZeneca, Sancilio/Micelle BioPharm, Incyte. NIH 5U01HL134042-03.
- **Consulting** - Hilton Publishing, Pfizer, AstraZeneca, Emmaus, EmmiSolutions, U of Cincinnati, Millennium Pharmaceuticals, Gerson-Lehman Group, Navigant, Guidepoint

I will discuss only publicly available information. I will discuss progress in sickle cell disease in general terms with no endorsement of commercial products.
COLONIALISM IN SCIENCE:  
THE "HELIКОPTER RESEARCHER”*

Get the data and do the analysis elsewhere  
... no equipment or other infrastructure  
... no expertise in local personnel  
... no sustainable benefits to health

* http://theconversation.com/helicopter-research-who-benefits-from-international-studies-in-indonesia-102165
ADDRESSING A CHRONIC DISEASE
By
BUILDING CAPACITY for RESEARCH and CARE

Don’t be a “helicopter researcher”

Build capacity
1. Needs assessment
2. Collaborate on funded projects and manuscripts
3. Build on existing infrastructure
4. Train existing personnel, train the trainer
5. Plan for sustainability
What about Sickle Cell Disease?

**Global Health:** SCD has high prevalence & mortality in LMIC

- Diagnosing SCD requires technology
- Treatments are expensive & long
- Cure is high-tech, expensive hematopoietic stem cell transplant

 Estimated number of newborns with SCA per country from 2010 to 2050.

Piel FB et al. SCA Burden 2010-2050 PLOS Medicine 5 July 2013 10 (7)e1001484 Fig2.
1. Clinical trials in LMIC
2. Hemoglobinopathy screening
   a) Train on HPLC and registry database
   b) Set up tracking for cohort study
   c) Train to develop research questions
3. Implementation Science frameworks
   a) Organize needs assessments
   b) Implement with local healthcare
   c) Assess readiness for change
   d) Evaluate & adjust during implementation
   e) Train to develop research questions


UIC Global Health Committee 2018
U of IL Pediatric GH Committee
2018-2019 activities

• MISSION statement and GOALS

• WEBSITE to inform the department of GH activities

• IDENTIFY PILOT SIGNATURE PROJECTS and SITES for capacity building and for pediatric faculty and residents participation that address:
  – TRAINING
    Resident international rotation guidelines and requisites
  -- EDUCATION
  – RESEARCH
**Mission-**

To IMPROVE THE HEALTH OF LOW RESOURCE COMMUNITIES by fostering SERVICE, QUALITY EDUCATION, INNOVATIVE RESEARCH in pediatric global health through

- **RECIPROCITY**
- **INTERPROFESSIONAL** COLLABORATIONS

BY:

1. developing and implementing **innovative, sustainable** activities
2. Multi-disciplinary **longitudinal capacity building** partnership
3. preparing future leaders in **competencies** for pediatric global health.
4. **integrating** research, education and clinical program development
5. engaging and informing the faculty
U of IL Pediatric GH Committee

• Programs of **academic value** to the department
• Outcome assessment for all of the GH activities toward publishable and fundable GH program
• **Guidelines for GH activities**-interprofessional collaborations; full partnership, evidence-based interventions, system-strengthening and context-appropriate.
• **Resource sharing and exchange of ideas** by Collaborating with the Center for Global Health and U of IL GH partners.
Intended outcome

• National and international recognition
• Innovative contributions to pediatric medicine
• Academic productivity in GH
• Realize the strength of international and interprofessional collaborations
• A culture of “service” to others
• Attract talented faculty, trainees and staff to the department
UIC Pediatrics Global Health

What is our mission?

To improve the health of low resource communities through the integration of innovative research, quality education and service, and inter-professional collaborations in pediatric health.

[Image of a group of people with flags representing projects in Vietnam, Tanzania, Kenya, and Brazil]

Click here to learn more about us

PROJECTS
Learn more about our project missions, goals, activities, and successes.
Vietnam
a pilot site for UIC pediatric GH
November 2018
Background

Vietnam war protest
Peak 1968-1969

Last days of US presence
1975
Vietnam

- Socialist Republic of VN
- Population- 95.5 M
- Children< 15 y/o: 23.4% or 22 Millions
- 1986 Open door policies
- 2007 WTO membership
- GDP per capita
  - (2007) 900 USD
  - (2017) 1,834 USD
IPSAC-VN
501(c)3
Founded 2009

International Pediatric Specialist Alliance for the Children of Vietnam
www.IPSACvietnam.org

**Vision**
All children of Vietnam will have equal access to quality surgical care

**Mission**
Through partnership with VN medical colleagues
To enhance capacity in pediatric surgery
To increase access to surgical care for all children of VN
IPSAC sites - 8 active MOUs

- Pham Ngoc Thach U of Medicine (2012-)
- U of Medicine and Pharmacy (2015-)
- National U of Science (2018-)

Level 1 Urban children hospital:
- National Hospital of Pediatrics (2012-)
- Hue Central Hospital (2010-2012)
- Danang Women and Children’s (2011-)
- Kon Tum General Hospital (2013-2017)

Level 2 provincial children hospital:
- Children Hospital 1 (2009-)
- Children Hospital 2 (2014-)
- City Children Hospital (2016-)
- Can Tho Children’s Hospital (2016-)
- Can Tho U of Medicine and Pharmacy (2016)

Expired MOU:
- Thanh Hoa Pediatric Hospital (2014-2017)
Hanoi (7.6 M)-Nation Children Hospital
Ho Chi Minh City (8.2M)-Children Hospitals 1, 2 and 3

City Children Hospital-2017
1,028 beds

CH1-1,600 beds

CH2-1,500 beds

National Children Hospital
1,400 beds
CH1-Capacity overflow

Daily admissions-3,000
Daily visits-5,000

NICU

CDH 30
Gastrochisis 35
TEF 42
Atresia-140

31 Provinces
CH1 and IPSAC partnership
Since 2009
Phase 1

• Academic approach
  Clinical exchanges
  Advanced training and workshops
  Academic support
  Mentoring
  Collaborative research

• Multidisciplinary
Relieve surgical burden at urban CH
By enhancing local capacities at provincial hospitals

Health Care Reform- Ministry of Health’s Direction of Healthcare Activities (2008)
Technology transfer from central to provincial hospitals
Dispatching workers from higher-level hospitals to support lower-level hospitals

IPSAC PHASE 1

IPSAC PHASE 2
Work force competency
Phases 1,2- Since 2009
VN CH and provincial hospitals and IPSAC
   Education
   Clinical service
   Research

Phase 3-Since 2018-
VN CH and IPSAC and UIC pediatrics
• Impact
• Measurable outcome
• Context appropriate scholarly activities
   Disease with greatest burden
   Rare disease yet high local prevalence
   Scalable efforts
WHO data - Road traffic death/100,000 population (2018)

93% of road traffic fatalities and injuries in LMIC
STRENGTHENING SURGICAL CARE
FROM VERTICAL SYSTEM
TO HORIZONTAL SYSTEM

Piloting a multimodal curriculum to enhance emergency pediatric surgical capacity in low resources medical facilities

U.S. Government VEF Faculty Scholar Project
(2016)
RATIONALE FOR PASS course
Reduce preventable surgical mortality and morbidities

1. PEDIATRIC TRAUMA
   - Traffic injury-leading cause of death for children worldwide
   - Automobiles and highways use on the rise in VN.

2. LIFE-THREATENING PEDIATRIC SURGICAL ILLNESSES
   - > 50% of surgical needs are emergencies
   - Improving pre-transfer care or local care of the pediatric surgical patients at lower level hospitals improves outcome
   - Reduce overcrowding at central CH
   - Ministry of Health new policy-implement training and technology transfer between levels 1 and 2,3 hospitals
What is different about PASS

• US and VN faculty partnership
• Institutional twinning
• Standardized modified PALS and ATLS curriculum adapted to the needs of VN (future Pediatric Acute Surgical and Life Support-PASLS)
• Multidisciplinary, team training
• Interactive, discussion-based for Critical thinking
• Outcome assessment

• Train the trainers-
  Designated local champions at CH
  Future champions at provincial hospitals
PASS Course activities

Skills demonstration
Skills practice
Simulated case scenarios

Team-based case management
Team debriefing

Anesthesia
Pediatric surgeon
EM
Performance Before and after

TEAM DYNAMICS SCORES (Team n=13) *

CASE MANAGEMENT SCORES (Team n=13) *

WRITTEN TEST Learners n=57

p<0.001

p<0.001

p=0.005
# Course evaluation

<table>
<thead>
<tr>
<th>Didactic content</th>
<th>Too basic</th>
<th>Right</th>
<th>Too advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5%</td>
<td>95%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation score</th>
<th>1 (poor)</th>
<th>2 or 3</th>
<th>4</th>
<th>5 excellent</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sim stations</td>
<td>-</td>
<td>-</td>
<td>4%</td>
<td>96%</td>
<td></td>
</tr>
<tr>
<td>Practical value</td>
<td>-</td>
<td>-</td>
<td>4%</td>
<td>96%</td>
<td></td>
</tr>
<tr>
<td>Instructor</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Respectful</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US</td>
<td></td>
<td></td>
<td>2%</td>
<td>98%</td>
<td></td>
</tr>
<tr>
<td>VN</td>
<td></td>
<td></td>
<td>5%</td>
<td>95%</td>
<td></td>
</tr>
<tr>
<td>-Enthusiastic</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US</td>
<td></td>
<td></td>
<td>3%</td>
<td>97%</td>
<td></td>
</tr>
<tr>
<td>VN</td>
<td></td>
<td></td>
<td>7%</td>
<td>95%</td>
<td></td>
</tr>
<tr>
<td>Course methods</td>
<td>-</td>
<td>-</td>
<td>11%</td>
<td>89%</td>
<td>Course too short more sim cases</td>
</tr>
</tbody>
</table>
1st GRADUATING PASS CLASS September 2017
Children Hospital 1, Ho Chi Minh City, Vietnam

5th GRADUATING CLASS November 2018
FUTURE local trainers class March 2019
City Children Hospital, Ho Chi Minh City, Vietnam
BILIARY ATRESIA
An orphan disease with global pediatric health issue

• Rare- 1/20,000 live births
• Lethal without early Kasai portoenterostomy
• High surgical failure (50%/2 years need new liver)
• >80% long term survivors need liver transplantation

Hayes et al. Surgery 1963
BILIARY ATRESIA
A higher burden in developing countries

- 1/3,000* live births in LMIC vs 1/32,000 in HIC
- Delayed diagnosis and treatment
- No available liver transplantation as rescue therapy for failed Kasai

WHY BILIARY ATRESIA IN LMIC
- <10% research done in LMIC
- Strengthening research capacity in LMIC – “one of the most powerful, cost effective, and sustainable means of advancing health and development.” Commission on Health Research for Development


Liu M et al. Surgery (2016)
• FDA IND multicenter randomized controlled interventional trial

  Research question
  Does GCSF improve the 2-years clinical outcome of BA
  New diagnosis of BA
  2 groups of subjects: Kasai and no Kasai

  • Phase 1-Safety and dose determination of GCSF
    Ministry of health approval in VN
    Kasai (6-9 subjects) and no Kasai (6-9 subjects)
  • Phase 2- 2 years efficacy transplant-free survival and liver function

  • Collaborative sites
    VN clinical sites: Nation Children Hospital, CH1, CH2
    VN Translational site: National U of Science
    International clinical sites: D.C National, Seattle Children, Aga KhanU in Karachi
UIC pilot program-Vietnam
New collaboration-2018
City Children Hospital-1,028 beds

Helicopter pad
Emergency room
Simulation center
New collaboration - Nov 2018
City Children Hospital

Dr Nam and UIC rotation team

PASS team

Televised PASS learners

Televised PASS faculty

Concluding ceremony
Mission-
To IMPROVE THE HEALTH OF LOW RESOURCE COMMUNITIES by fostering SERVICE, QUALITY EDUCATION, INNOVATIVE RESEARCH in pediatric global health through
• RECIPROCITY
• INTERPROFESSIONAL COLLABORATIONS
Work in progress
A MODEL FOR UIC and GLOBAL PARTNERS PROGRAM
BIDIRECTIONAL TWINNING in CAPACITY BUILDING

SIGNATURE PROJECTS
For residents and faculty?
- ? VN endemic infectious diseases
- ? Biliary Atresia

- Trainees international rotation
- Future PASLS course
- Future faculty exchange

Quality improvement
? CLABSI, ? SAFE ANESTHESIA
? ANTIBIOTICS Stewardship

RESEARCH

TRAINING EDUCATION

SERVICE DELIVERY
• Site criteria
  Twinning
  Faculty presence
    supervision
  longitudinal projects
  evaluation
  Structured curriculum and schedule

• Expectations
  Pre-departure preparation
  Competencies
  Post rotation scholarly activities
Work in progress
DEPARTMENT COMMITMENT and SUPPORT

RESEARCH

SIGNATURE PROJECTS
For residents and faculty?

TRAINING EDUCATION

• Trainees rotation
• Faculty exchange
• Future PASLS course

SERVICE DELIVERY

Quality improvement
? CLABSI, ? SAFE ANESTHESIA
? ANTIBIOTICS Stewardship

FACULTY

• Protected time
• Use of CME credit toward travel expenses
• Recognition
• Pilot grant funding
CONSIDERATIONS

• Are you spending away money and efforts
  Return on investment on resident international rotations, Faculty PTO and travel
  Local institutional or collaborators’ commitment
  Are the residents prepared
  Outcome metrics of your intervention

• Are you taking away
  Burden on local institutions to host your activities and resident supervision
  Recognition in publications
  Brain drain
  Potential unknown negative impact on local patients, community and institution

• Are you investing
  Building workforce, infrastructure, relationship
  Clear benefit to both institutions
  Sustainable benefits to the local community/institutions
  Outcome metrics of your intervention
SUMMARY
UIC Pediatric Global Health Program

• PATIENT-CENTERED
• ACADEMIC VALUES
• INTERPROFESSIONAL and MULTIDISCIPLINARY
Integrate patient care, education, training, research and technologies in building capacities

• IMPACTFUL
• MUTUALLY BENEFICIAL and CONTEXT-APPROPRIATE
• SUSTAINABLE
ACKNOWLEDGEMENTS

Partners in VN

National Children’s Hospital
Children’s Hospital 1
City Children’s Hospital
Pham Ngoc Thach U of Medicine-Pharmacy
VN National U-Stem Cell Institute

• Susanne Feret
• UIC Pediatric GH Committee
  A Shukla-Co Director
  M Barnes
  L Hsu
  S Kecskes
  J Klein
  A Kreppel
  P Roper
  R Smith
  J Wang

• College of Nursing
• College of Pharmacy

www.IPSACvietnam.org
QUESTIONS and COMMENTS
COMMENTS/DISCUSSION