ABSTRACT: 2016 ELAM Institutional Action Project Symposium

Project Title: Broadening Alliances to Optimize Pediatric Surgical Care in Low Resources Medical Facilities through Pediatric Acute Surgical Support (PASS)

Name and Institution: AiXuan Holterman; U of Illinois College of Medicine at Peoria (UICOMP)

Collaborators: U of IL College of Medicine at Peoria (UICOMP)/Children's Hospital of Illinois (CHI), Pham Ngoc Thach U of Medicine (PNT)/ Children's Hospital #1 (CH1) in Vietnam (VN); International Pediatric Surgical Alliance for the Children of VN (IPSAC-VN); VN Education Foundation (VEF) VN Association of Pediatric Surgeons (VAPS) and American Pediatric Surgical Association (APSA)

Background: The global burden of surgical disease disproportionally affects children in Low Middle Income Countries LMIC such as VN. IPSAC-VN, a 501c3 organization, has been engaged in surgical capacity-building for 10 years. Overcrowding at its 3 children's hospitals caring for 20 M children, inadequate evaluation, triage and resuscitation of patients transferred from outlying sites adversely affect mortality and morbidity. Low resources US rural community hospitals face the same transfer-related issues.

Objectives: To develop a global health program in LMIC VN to improve pediatric surgical emergency delivery at low resource facilities where pediatric specialty expertise is lacking with application for rural central Illinois.

Methods: This 1-year project will be piloted in VN with joint 1) Faculty from UICOMP/CHI Pediatric Surgery, Intensive care and Emergency departments and VN partner faculty at PNT-affiliated CH1 for PASS curriculum development; 2) IPSAC-VN and VEF for funding; 3) VAPS, and APSA Global Health committee for curriculum input. The course main themes are for US faculty to teach the VN learners of fundamentals in the initial evaluation of pediatric trauma and common pediatric surgical emergencies; and of the principles of effective teaching. PASS objectives for learners are to (a) Recognize the illness, (b) Provide initial airway, circulatory and wound support, (c) Determine the need of transfer to higher level of care, and (d) proper hand-off to the receiving hospitals. The course combines off-site didactic, case studies lectures by remote videoconferencing by US faculty, and biyearly on-site skills training by US and VN faculty by simulation at PNT skills lab. The learners are medical practitioners from CH1-affiliated community hospitals. Designated champion-learners from the participating hospitals are charged to transfer their skills to the hospital staff and its outlying community facilities, to incorporate the course into the hospital clinical practice, and to identify future champion-learner-teacher at its subsidiary sites. PNT/CH1 faculty will incorporate the curriculum into the medical school elective courses. US faculty, IPSAC and PNT/CH1 faculty provide continued consultation and evaluation of the project.

Outcomes and Evaluation Strategy: VN teachers' and/or learners' course performances are based on US faculty evaluation of simulation scenarios, pre- and post-course performance using written tests and Clinical Performance Tool (CPT) for basic steps in pediatric resuscitation. Learners will assess course effectiveness by surveys of course relevance, intellectual substance, learning environment and teacher attributes. Program effectiveness is based on a 2-year evaluation of the # of rural community hospitals to implement the course, integration of the course into the medical school curriculum or CME activities at PNT and UICOMP, and a 2-year data for the # of VN hospitals using this curriculum, lower volume of patient transfer from provincial and district hospitals in VN to the central CH1, and improved transfer related mortality and morbidity of pediatric patients in VN and for the future, central Illinois.

BROADENING ALLIANCES TO OPTIMIZE PEDIATRIC SURGICAL CARE in Low Resources Medical Facilities through PASS (Pediatric Acute Surgical Support)

AiXuan Holterman, M.D., U of Illinois College of Medicine at Peoria

Abstract

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Collaborators

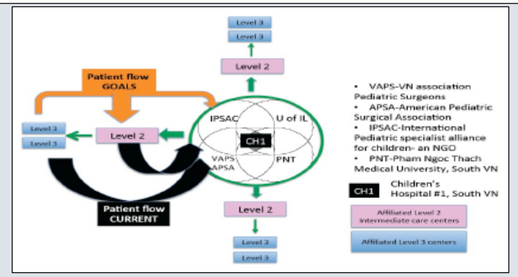
1. *UICOM-University of Illinois College of Medicine at Peoria and affiliated Childrens' Hospital of Illinois CHI
2. ** PNT-Pham Ngoc Thach U of Medicine and Pharmacy in Vietnam and affiliated Children's Hospital #1 in Ho Chi Minh City
3. # IPSAC-VN-International Pediatric Specialist Alliance for the Children of Vietnam, a NGO with 501c3 status
4. +VEF- Vietnamese Education Foundation, a US Federal government agency for 1-year funding
5. APSA-American Pediatric Surgical Society-Global Health committee

Challenges

- The global burden of surgical disease is high in Vietnam, with 20 millions children <15y/o medical care centralized to 3 children's hospitals. The majority could actually be managed at lower levels facilities (1).
- Inadequate pre- transfer assessment and resuscitation (2) adversely affect transfer- related mortality and morbidity.
- Emergency personnel are poorly trained in pediatric surgical emergencies, especially traffic injury (3).
- US rural community hospitals without pediatric surgical expertise face the same transfer issues.

Objective

A sustainable global health surgical-capacity enhancing program through surgical initial emergency care training at non-children's hospitals promoting proper initial care and preparation for surgical patients' transfer.



Methods

- A 1-year pilot project: joint efforts by UICOMP/CHI pediatric surgery, emergency medicine and intensive care faculty and PNT/CH1 paired faculty; VEF; IPSAC-VN; and National Pediatric Surgical organizations in VN and the US.

- Course objectives: PASS (Pediatric Acute Surgical Support)
  1. Recognize the child with acute surgical illness
  2. Initial airway, circulatory and wound support
  3. Identify need to transfer to higher level of care
  4. Preparation for hand-off to the receiving hospital.

- Course themes:

a) Principles of adult learning strategies in didactic, simulation and skills training. The initial learners are trained to teach future learners

b) Emergency skills for basic surgical evaluation, resuscitation, triage and resource-appropriate management of the ill child with organ-specific injuries in pediatric trauma and common pediatric surgical emergencies

- Course execution: blended off-site videoconferencing using the Vsee teleplatform (https://vsee.com) for didactic lectures, case studies; and on-site resuscitation and surgical skills training, simulation, and debriefings at the PNT skills lab

2-year evaluation

COURSE : teacher and learner performance evaluation via standard methods

PROGRAM:

1. Number of hospital sites in VN to implement course
2. Number of new teacher trainers
3. Integrating of the course into PNT medical curriculum
4. Course readiness for UICOMP implementation
5. Patient transfer volume to CH1 in VN
6. Transfer-related Mortality and morbidity to CH1.

Impact

1. **GLOBAL HEALTH**:
   - ✓ Quality care improvement VN and rural central Illinois
   - Clinical skills enhancement
   - Improve evaluation and transfer process
   - ✓ A sustainable global health impact for VN as a LMIC
   - Relieve volume burden
   - Standardize pediatric surgical emergency care in VN
   - Teach future teachers
2. **INSTITUTION:**
   - Broaden UICOMP Global Health program
   - Curriculum enhancement for PNT university
   - A service line for continuum of care from community to children's hospitals- CHI in VN and CH1 in IL
3. **APSA** and other pediatric surgical societies: enhance its mission to promote overall quality surgical care and provide opportunities for its membership to engage in high impact global health initiatives
4. **IPSAC**: pediatric surgical-capacity enhancing mission

Future directions

1. **IPSAC-VN :** reduce volume of patient transfer into CH1
   a. recruit additional VN sites for training
   b. initiate the next phase of capacity building at non-pediatric hospitals in VN for procedural skills training in simple pediatric surgical procedures
2. **UICOMP and APSA** Global Health program: a model for capacity building in LMIC
3. Preliminary course efficacy data for WHO funding to sustain and extend the program throughout VN and LMIC

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