

APPD 2015 GLOBAL HEALTH PEDIATRIC EDUCATION GROUP ABSTRACT PAMPHLET

Theme: Innovative strategies for optimizing global health education

	TITLE	SUBMISSION AUTHOR	THEME
S T A T E S I D E E I N N O V A T I O N S	Tracking your Track: Harnessing the Power of Individualized Checklists to Eliminate Email Fatigue	Mike Pitt, MD, University of Minnesota, mbpitt@umn.edu	<i>Administrative strategies for global health tracks</i>
	Global Health Advocacy	Jennifer Watts, MD, MPH, Children's Mercy Hospitals and Clinics, jwatts@cmh.edu	<i>Integrating global health into stateside experiences</i>
	Individualizing Beyond Six Educational Units: Incorporating Global Health into all Residency Rotations	Nicole St Clair, MD, Medical College of Wisconsin, nstclair@mcw.edu	<i>Self-directed learning tools for global health trainees</i>
	Preparing Pediatricians to Go in Harm's Way: A Global Health Curriculum for Unstable Environments	Matthew D. Eberly, MD, National Capital Consortium Pediatric Residency at Walter Reed National Military Medical Center, matthew.eberly@usuhs.edu	<i>Global health curriculum</i>
	Medical Student Instruction in Global Human Trafficking (M-SIGHT): a Pilot Study of a New Online eLearning Module	Amanda Liewen, MS4, University of Louisville School of Medicine amanda.liewen@louisville.edu	<i>Global health curriculum</i>
	Resident Advocacy At Home and Abroad: A Curriculum Designed to Prepare Residents to Provide Care for Underserved Populations locally and globally	Stephen Warrick, MD, Cincinnati Children's Hospital Medical Center, Stephen.Warrick@cchmc.org	<i>Global health curriculum</i>
	A Resident-Driven Educational Strategy: The Global Health Clinical Case Series	Andrea Lach Dean, MD, Baylor College of Medicine, aldean@texaschildrens.org	<i>Global health curriculum</i>
	Preparing Locally to Learn Globally	Jacquelyn Kuzminski, MD, Medical College of Wisconsin, jkuzminski@mcw.edu	<i>Global health curriculum</i>
	Using the Framework of Child Rights and Social Justice to Advance Global Child Health Education	Sherry Shenoda, MD, University of Florida, Sherry.Shenoda@jax.ufl.edu	<i>Global health curriculum</i>
	Global Health in the United States – The Development of the Border Health Track (BHT)	Lisa Ayoub-Rodriguez MD, Texas Tech Health Science Center – El Paso lisa.ayoub-rodriguez@ttuhsc.edu	<i>Global health curriculum</i>
	Simulating the Emotional Challenges of a Global Health Elective: A Multi-Institutional Study of a Novel Curriculum	Michael B. Pitt, MD, University of Minnesota, mbpitt@umn.edu	<i>Global health simulation</i>
	Simulation Use for Global Away Rotations (SUGAR): Resident Reported Changes to Pre-Trip Preparation After Encountering Common Emotional Challenges in a Simulated Environment – A Multi-Institutional Study	Michael Pitt, MD, University of Minnesota, mbpitt@umn.edu	<i>Global health simulation</i>
	Simulation Use for Global Away Rotations (SUGAR): Useful in Preparation, But What About When Abroad?	Michael B. Pitt, MD, University of Minnesota, mbpitt@umn.edu	<i>Global health simulation</i>
	Developing a Global Health (GH) Residency Track- Experiential Education and Collaboration	Bahareh Keith DO, University of Florida, baharehkeith@peds.ufl.edu	<i>Global health track development</i>
The Cincinnati Experience: Training International Medical Graduates (IMGs) to create an impact locally and globally	Chuck Schubert, MD, Cincinnati Children's Hospital and Medical Center CHUCK.SCHUBERT@cchmc.org	<i>Stateside training for global populations</i>	

	TITLE	SUBMISSION AUTHOR	THEME
G L O B A L I N N O V A T I O N S	International Collaborative Office Rounds (iCOR): An Innovative Global Health Education Strategy	Lynne C. Huffman, MD, Stanford University, huffmanl@stanford.edu	<i>Educational innovations for global partners</i>
	Development and Implementation of a Long Distance Hybrid Subspecialty Cardiology Curriculum for Pediatric Registrars in Malawi	Anne Greene, MD, George Washington University, agreene125@aol.com	<i>Educational innovations for global partners</i>
	Implementation of a Pediatric Emergency Triage Protocol and Curriculum in Santiago, Dominican Republic	Alexandra Leader, MD, Mount Sinai Medical Center, NY, alex.leader@gmail.com	<i>Educational innovations for global partners</i>
	Trainee feedback in Rwanda can guide medical education reform	Mark Corden, MD, CM, Children's Hospital Los Angeles, mcorden@chla.usc.edu	<i>Educational innovations for global partners</i>
	Graduate Medical Education in a resource limited setting: Focus on the development of a Pediatrics Residency Program in Haiti	Antonia P. Eyssallenne, MD, PhD, University of Miami/Jackson Memorial Hospital, aeysallenne@med.miami.edu	<i>Educational innovations for global partners</i>
	Use of Rapid Cycle Deliberate Practice Simulation in a Resource-Limited Setting	Samantha L. Rosman, MD, Boston Children's Hospital, Global Pediatrics Program, samantha.rosman@gmail.com	<i>Educational innovations for global partners</i>
	A Multidisciplinary Longitudinal Educational Program to Improve Neonatal Outcomes in the Republic of Georgia	Candice A. Hobbs, NNP, Mayo Clinic Rochester MN hobbs.candice@mayo.edu	<i>Educational innovations for global partners</i>
	Development of International Fundamental Pediatric Support (PFCCS) Instructors	Sheri Crow, M.D., Mayo Clinic, Rochester, MN, Crow.Sheri@mayo.edu	<i>Educational innovations for global partners</i>
	Care of Marginalized Medically Complex Children as a Teaching Tool in Global Child Health: Systems Based Practice	M. Townsend Cooper, Jr. MD, University of Oklahoma, Michael-T-Cooper@ouhsc.edu	<i>Global health elective on-site education</i>
	Helping Babies Breathe – A Platform for Global Networking	Kavi Gnanasekaran, MD, University of Rochester Medical Center Pediatrics Residency Program, Kavi_Gnanasekaran@urmc.rochester.edu	<i>Global health elective on-site projects</i>
	Ulienda wapi: Long-term follow-up of past participants of North American and European rotations from Moi University School of Medicine, Kenya	Jordan Huskins MD, Indiana University School of Medicine jhuskins@iu.edu	<i>Impact of global educational partnerships</i>
	Career choices and global health engagement: 24-year follow-up of U.S. participants in the Indiana University-Moi University elective	Rachel A. Umoren, MD, MS, Indiana University School of Medicine, rumoren@iu.edu	<i>Impact of global educational partnerships</i>
	Impact of Global Health Electives	Christiana Russ, MD, Children's Hospital Boston, Christiana.Russ@childrens.harvard.edu	<i>Impact of global health electives</i>
	Importance of Cultural Relativism in Global Health Field Work: Evaluating the Comparison of its impact on Disparities of HIV in Senegal and Botswana at the beginning of the HIV Pandemic	Bunmi Bakare, MD, MPH, Rutgers Robert Wood Johnson Medical School, bakareol@rwjms.rutgers.edu	<i>Global engagement</i>

Tracking your Track: Harnessing the Power of Individualized Checklists to Eliminate Email Fatigue

Valerie Cole & Mike Pitt, MD (Presenter)
University of Minnesota
cole0430@umn.edu; mbpitt@umn.edu
612-624-4477

Background:

There are multiples steps required for confirming that residents are prepared for going abroad on a global health elective including safety precautions (i.e. consent forms, proof of insurance, emergency contacts, etc.), logistics preparation (have you confirmed housing, have you met with mentor, etc.). In addition to the information needed for electives, residents on our Pediatric Global Health Track at the University of Minnesota have several requirements for successful completion of the global health track during their residency. Track administrators have traditionally monitored these requirements via paper checklists, serial email reminders, spreadsheets and constant follow-ups to wrangle residents' information and documents. Anecdotal feedback from residents in the past revealed that some residents were choosing not to participate because of a lack of transparency or opted out completely because of confusion on what was actually required. Additionally it was challenging for Program Leadership and Administration to quickly assess completion with requirements prior to assigning a certificate in global health at the end of residency. This resulted in varying levels of compliance and increasing frustration on both sides.

Methods:

Using tools within New Innovations Residency Management Suite (RMS), we have since streamlined this process by using interactive checklists assigned to residents in all stages of their GH experience (overall certificate requirements, pre-trip steps, upon return to dos) which serves not only as an individualized checklist, but a storing clearing house where these important documents/consents can be housed. Residents and administrators can check their progress in real time and see a progress bar indicating what is left to be completed. (See Figure)

Results:

One year into this transition, residents have reported increased confidence in their ability to meet track certificate and international rotation specific requirements (with pre-trip requirements now at 100% compliance) and our track leadership is able to focus more on education and curriculum than collecting paperwork.

Conclusion:

Implementing individualized checklists within our existing resident management suite has streamlined the process by which we track resident participating and requirements and led to increased satisfaction and compliance by residents and administrators.

#	Step Name	Status	Required
1	UMN-Peds-Global Health-MKSA Test <i>Moodle and follow up on test results. Work with Program Director to determine results, and necessary action for those who do not pass.</i>	COMPLETE Return Step	REQUIRED
2	UMN-Peds-Global Health Travel Insurance & UMN Release/Waiver <i>You must obtain CISI Travel Insurance, in addition to what is provided by MedEx. Upload a copy of the travel insurance card when received in the mail. Processing can take 7-10 business days.</i>	TO DO Upload Files	REQUIRED
3	UMN-Peds-Global Health-Academic Project Planning <i>Review document with Global Health Advisor, country specific faculty expert, or Track Leadership.</i>	TO DO	REQUIRED
4	UMN-Peds-Global Health-Pre Departure 1:1 Mtg w/Cindy Howard or Mike Pitt <i>Confirm 1:1 has happened.</i>	COMPLETE Return Step	REQUIRED
5	UMN-Peds-Global Health-Pre Departure Orientation <i>Work with Program Directors to select a date, time, and location for group orientation.</i>	COMPLETE Return Step	REQUIRED
6	UMN-Peds-Global Health-STEP Enrollment with US Dept of State <i>Register your travel with the U.S. Department of State through their Smart Traveler Enrollment Program (STEP). An additional benefit of registering is in country notification of relevant health concerns.</i>	TO DO	REQUIRED

Global Health Advocacy

Jennifer Watts, MD, MPH
Children's Mercy Hospitals and Clinics
816-559-9503
jwatts@cmh.edu

Global health educators are continuously searching for innovative ways to integrate global child health education into the current residency curriculum. With the fairly recent addition of a required advocacy month in the 2nd year at Children's Mercy Hospital (CMH), our Global Health team participated in developing this month to add global health advocacy for all global health track residents.

At CMH, the advocacy elective allows the residents to learn about and participate in various community groups and activities. For the global health track residents, approximately half of their advocacy month is spent participating in global health organizations and activities. During the "global health" days of the month, residents spend time in clinics such as Healthy Departures (travel clinic) and International Adoption Clinic. They participate in the lab preparing malaria slides and O&P slides. They shadow interpreters. In the community, they attend refugee orientation sessions and assist with one-on-one tutoring for ESL, GED and citizenship classes. They also participate in soccer coaching, community gardening, farmer's markets, and BMI screening for Zumba classes in a neighborhood where English is seldom spoken. Upon completion of the month, residents provide a written plan for a travel clinic visit, an international adoption visit, and a reflective narrative for the other activities.

Global Health residents have enjoyed these activities embedded in their advocacy rotation. It has provided them with global health exposure without having to travel as well as improve their cultural competency. Common themes in evaluations include: improved understanding and appreciation; plan to incorporate more appropriate education in well child checks; now feel comfortable using interpreters; enjoyed being part of healthy community activities in neighborhoods that really need them. In addition, both community organizations have been able to secure an increased amount of grant funding through our partnerships.

Thus far, integrating global health into the current advocacy curriculum seems to be advantageous. By doing so, residents' workload has not increased, nor do the residents have to sacrifice opportunities to partake in global health. They do however, gain incredible insight and discover lifelong opportunities within the community.

Individualizing Beyond Six Educational Units: Incorporating Global Health into all Residency Rotations

Nicole E. St Clair, MD, Jacquelyn Kuzminski, MD, Medical College of Wisconsin Department of Pediatrics, Wauwatosa, WI, Gitanjali Arora, MD, DTMH, UCLA, Los Angeles, CA, Sabrina M. Butteris, MD, University of Wisconsin School of Medicine & Public Health, Madison, WI, Maneesh Batra, MD MPH, University of Washington, Seattle, WA, Christiana M. Russ, MD, DTMH, Boston Combined Residency Program/Boston Children's Hospital, Boston, MA, Tania Condurache, MD, MSc, George C. Rodgers, MD, PhD, University of Louisville School of Medicine, Louisville, KY, Charles Schubert, MD, Cincinnati Children's Hospital, Cincinnati, OH, Michael B. Pitt, MD, University of Minnesota/Amplatz Children's Hospital, Minneapolis, MN

nstclair@mcw.edu

Background: Due to a new ACGME mandate, pediatric residents are now required to develop an Individualized Curriculum, composed of six educational units that cater to their career interests. In 2013, an APPD workshop was provided to assist educators with developing individualized frameworks for residents with global health interests. At that workshop, a global health educational tool was proposed that could be offered longitudinally throughout residency. This tool, consisting of global health-specific objectives for each pediatric core and specialty rotation, is intended to serve as an optional resource for self-motivated residents during their rotations. Due to significant interest in the idea, further efforts have been made to develop the tool.

Objective: To describe an ongoing national effort to develop a global health educational tool that can be applied during all residency rotations.

Methods: Interested faculty were recruited from the APPD global health educators network to serve as authors for global health-specific objectives for a core or specialty rotation. Authors were asked to develop objectives that are pertinent to the provision of care in low-resource settings; are vetted by sub-specialists; and are accompanied by resources that would allow the resident to achieve the objectives independently in 3 hours or less.

Results: Objectives have been developed for 30 rotations, with an anticipated completion of objectives for 6 additional rotations by spring, 2015. Distribution of these objectives to interested residents is already occurring, and feedback is being obtained by a cohort of senior resident reviewers to optimize the tool.

Conclusion: The development of global health-specific learning objectives for pediatric core and specialty rotations is a unique way to nourish a resident's individual interests while completing standard residency training. This is an easily scalable tool for residents with other foci of interests, and should be considered as residency programs promote individualized training experiences.

Preparing Pediatricians to Go in Harm's Way: A Global Health Curriculum for Unstable Environments

Matthew D. Eberly, Chris M. Watson, Matthew J. Weeks, Gregory H. Gorman;
National Capital Consortium Pediatric Residency at Walter Reed National Military Medical Center; Bethesda, MD
matthew.eberly@usuhs.edu

Background:

Pediatricians in the Uniformed Services serve as a highly irreplaceable resource, able to rapidly deploy to potentially austere environments in support of international humanitarian assistance and disaster relief (HA/DR) efforts led by the U.S. Government. For instance, in 2010 the United States Naval Ship (USNS) Comfort provided care for 237 pediatric surgical patients in response to the Haitian earthquake.ⁱ Additionally, during the conflicts in Afghanistan and Iraq, pediatric non-combat related admissions to U.S. military hospitals represented 57% of the total 6273 pediatric admissions over 10 years.ⁱⁱ Thus, developing a unique global health education curriculum for military pediatric residents remains a critical need.

Methods:

The National Capital Consortium Pediatric Residency (NCCPR) established a military unique global health curriculum focused on HA/DR. Each pediatric resident is required to complete the two-day Military Medical Humanitarian Assistance Course (MMHAC) developed in conjunction with the Uniformed Services University. Residents are then encouraged to participate in a 2-4 week supplemental global health rotation as part of their training.

Results:

Over the past 10 years, more than 60 residents have successfully completed the MMHAC module. Additionally, 20 residents have participated in medical readiness training exercises (MEDRETEs) in Honduras, 10 residents have served on the USNS Comfort, and 5 residents have participated in Operation Smile missions. Summative residency evaluations by NCCPR graduates indicates qualitatively greater understanding of HA/DR principles, contingency operations, medical mission planning, healthcare in developing nations, and cultural knowledge. In a recent survey of NCCPR graduates, 13 of 65 respondents (20%) indicated they had deployed within three years of finishing residency. Of the 13 deployed pediatricians, 12 (92.3%) felt our global health curriculum was beneficial.

Conclusions:

The NCC Pediatric Residency program's global health curriculum focusing on the military unique HA/DR mission is a sustainable model for augmenting residency education and improving global health knowledge.

- i. Walk RM, Donahue TF, Sharpe RP, Safford SD. Three phases of disaster relief in Haiti--pediatric surgical care on board the United States Naval Ship Comfort. *J Pediatr Surg.* 2011;46(10):1978-84
- ii. Edwards MJ, Lustik M, Burnett MW, Eichelberger M. Pediatric inpatient humanitarian care in combat: Iraq and Afghanistan 2002 to 2012. *J Am Coll Surg.* 2014;218(5):1018-23

Medical Student Instruction in Global Human Trafficking (M-SIGHT): a Pilot Study of a New Online eLearning Module

Amanda Liewen, MS4, Olivia Mittel, MD, MS, Carrie Bohnert, MPA, and Tania Condurache, MD, MSc, University of Louisville School of Medicine
amanda.liewen@louisville.edu

Background. Human trafficking (HT) is the third largest organized crime worldwide (32 billion dollars annually); 60,000 incidents are estimated in the United States yearly (13,000 of which are children). Despite growing concern among healthcare professionals and law enforcement agencies, little formal education on HT is available in medical schools and residency programs.

Objectives:

1. To enhance knowledge, confidence, and experience with HT victims among medical students and residents, by engaging in a standardized patient (SP) encounter, followed by an interactive web-based educational module.

Strategy

The Pediatric Clerkship and Pediatric Residency Program at the University of Louisville implemented an educational tool detailing identification of, communication with, and referral to safety of suspected victims.

We developed an SP encounter of a 16-year-old girl presenting with genital HSV infection, displaying HT victims “red flags” (e.g. avoidant behavior, branding tattoos). The SP only discloses social history information when the trainee ensures confidentiality, respect and privacy, inspiring trust. The trainee fills out a Step 2 Clinical Skills style note listing the history of present illness, differential diagnoses with supporting evidence, and treatment plans.

Following the encounter, the trainees complete an online interactive module on the subject of HT, intended to debrief the trainees after the SP encounter, and educate them on the international and domestic public health issue of HT. This interactive case-based module defines HT, discusses its prevalence, and describes the role of the healthcare professionals in treating, rescuing and rehabilitating the victims.

Evaluation data

With IRB approval, the results of the pre and post-educational knowledge quizzes and evaluation surveys are compared using the Chi-square test for proportions of correct answers. Of the first group of trainees (n=17) participating in this ongoing educational intervention, 100% either agreed or strongly agreed that their knowledge of HT increased, the module provided adequate instruction, and that the subject matter was effectively presented.

Conclusions

The knowledge quizzes and evaluation surveys of this ongoing educational intervention will be used to evaluate its effectiveness and guide future improvements. This innovative educational tool could be adopted by other institutions for raising awareness and knowledge about the topic of HT among trainees.

Resident Advocacy At Home and Abroad: A Curriculum Designed to Prepare Residents to Provide Care for Underserved Populations locally and globally

Stephen Warrick, MD; Brian Volck, MD; Stephanie Clark, MD, MPH; Chuck Schubert, MD
Cincinnati Children’s Hospital Medical Center
Stephen.Warrick@cchmc.org

Background:

All pediatrics residents are required to have training in patient advocacy per the Accreditation Council on Graduate Medical Education. At Cincinnati Children’s Hospital Medical Center, all residents participate in a two-week advocacy rotation, primarily during the intern year. Residents who show a specific interest in Global Health (GH) career pathways have the opportunity to participate in a unique advocacy course which focuses on both local and global advocacy topics.

Methods:

In 2012, based on Global Health Track resident feedback we merged our two-week advocacy and two-week global health curriculum into one rotation. The curriculum was designed to meet the needs of a variety of learners with didactic, interactive, group, and reflective activities in the form of lectures, book discussions, video presentations, and simulation cases with group debriefing. Topics that are included in the 2 week Global Health Advocacy (GHA) rotation include child abuse (local and global), cultural humility, health literacy, childhood nutrition, legislative advocacy, poverty issues, school issues, car safety and trauma prevention, emerging infectious/tropical diseases, Helping Babies Breathe training, review of WHO integrated management of childhood illness, and ethical dilemmas encountered by physicians both at home and abroad. All topics are carried out by personnel with expertise in the particular topic area.

Evaluation:

Over the past 3 years we have worked to develop a novel curriculum in the form of Global Health Advocacy. We have made incremental changes each year based on resident feedback and debriefing. We will soon begin our 3rd global health advocacy month in March 2015, and once completed will have trained over 20 residents.

Conclusions:

Resident training for GH is important to success in any setting involving underserved populations. Our GHA curriculum provides training tailored to those with a specific interest in GH as a part of their future career. While our program may not be generalizable to all residency programs, we have experience that may be valuable to other programs that are developing or enhancing GH and/or residency advocacy curricula.

A Resident-Driven Educational Strategy: The Global Health Clinical Case Series

Andrea Lach Dean, Stephanie A Marton, Gordon E Schutze

Baylor College of Medicine, Department of Pediatrics and Texas Children's Hospital Houston
aldean@texaschildrens.org

Objective: The Baylor College of Medicine/Texas Children's Hospital Residency in Global Child Health (GCH) offers comprehensive education to pediatric trainees to prepare them to be global health leaders. The curriculum adds an additional clinical year spent in a resource poor site. In order to maximize this experience, global health education is an integral part of the Houston-based training to expose residents to common global diseases, maintain new knowledge after they return and keep their domestic training relevant to career goals. The Global Health Clinical Case Series optimizes on the experiences of GCH residents to expand the clinical knowledge base of their peers while in the United States.

Description: The series was initiated 2012. The optional conferences are held approximately every other month and take place after clinical hours off the hospital campus. GCH residents who have completed their rotation abroad present while other GCH residents attend. The presenter selects a real case encountered while abroad and invites dialog about the differential diagnosis, work up, management and varying perspectives of attendees. The presenting resident facilitates the discussion; a faculty leader of the GCH residency is present to add additional insight.

Evaluation: A record of cases presented has been kept. Topics have included malnutrition, tuberculosis, prevention of mother-to-child HIV transmission, presumptive diagnosis of severe HIV disease, Kaposi's Sarcoma, antiretroviral therapy initiation, failure and side effects, non-HIV immunodeficiency, and non-HIV infectious diseases. Cases have been presented from residents' experiences in Lesotho, Malawi, Swaziland, Botswana and Romania. Each conference has been well attended.

Lessons Learned/Generalizability: The addition of the clinical case series to the GCH residency programs fosters a community of committed residents who seek to utilize their global health experience to enhance the training of their colleagues. These conferences allow residents to learn from others while strengthening their own experience by comparing and contrasting their perspectives with their peers. A global health clinical case conference series can play a valuable role in any training program that offers residents the opportunity to spend clinical time abroad.

Preparing Locally to Learn Globally

Jacquelyn Kuzminski, MD, Nicole St Clair, MD, Tiffany Frazer, MPH

Medical College of Wisconsin
jkuzminski@mcw.edu

Program/Project Purpose:

Fewer than 30% of medical schools prepare their students for global health electives. To align with the Association of American Medical College's Guidelines for Premedical and Medical Students Providing Patient Care During Clinical Experiences Abroad, the Medical College of Wisconsin (MCW) developed a combined undergraduate and graduate medical education (UME and GME) pre-departure curriculum. To our knowledge, there are no other academic programs that jointly train UME and GME trainees.

Structure/Method/Design:

An interdisciplinary group of MCW faculty determined the essentials of pre-departure preparation for UME/GME trainees based on a literature review, discussion with national colleagues and local expert consensus. 2.5 hours of training materials were developed: 1) Two 20 minute on-line preparation modules on health and safety; 2) a Guide for Global Engagement; and 3) an in-person 1.5 hour seminar on the ethics of short-term global health electives. The curriculum was piloted, modifications were made, and exempt approval was obtained for the formal evaluation. Data was gathered

through annual surveys (2013-2015) to assess whether the mandatory curriculum enhances trainee preparation for global health electives.

Results:

A 100% response rate was obtained from the 48 trainees who participated in the ethics seminar over a two year period. Using a 5 point likert scale with a high score of 5, the seminar’s ability to capture potential ethical situations was scored an average of 4.6 (high 4.9, low 4.2). The usefulness of the preparation curriculum was rated a 4.4 (high 4.6, low 4.2). The learners reported understanding the material with a rating of 4.63 (high 4.8, low 4.4) and felt the facilitators were effective in stimulating discussion with a score of 4.8 (high score 5, low score 4.5). The small group setting was felt to provide an opportunity for discussion scoring 4.7 (high 4.9, low 4.4).

Conclusions:

An interdisciplinary curriculum, with a combination of online tools and an in-person ethics seminar, can be an effective method to prepare both undergraduate and graduate medical trainees simultaneously for global health electives. This is a potentially scalable model for other academic programs seeking to prepare large groups of trainees for global health electives.

Using the Framework of Child Rights and Social Justice to Advance Global Child Health Education

Rita Nathawad, MD (Rita.Nathawad@jax.ufl.edu)
Sherry Shenoda, MD (Sherry.Shenoda@jax.ufl.edu)
University of Florida, Jacksonville

Background

The most comprehensive means of addressing the complex issues of global health-care provision is a child-rights and social justice model, as articulated in the United Nations Convention on the Rights of the Child (CRC). It is in the spirit of seeking to train pediatric residents to view themselves as child advocates rather than simply as health-care providers, that this global health curriculum has been developed. This curriculum teaches residents to use the CRC as the framework for analyzing global health issues. Where the biomedical approach focuses on disease processes and treatments, this curriculum urges learners to think about root-causes, social determinants of health, equity and social justice as the guiding principles for every global health problem.

Methods

This curriculum will begin with a section on socioeconomic determinants of health, equity and child rights. After the learner has acquired this foundation, they will explore basic concepts of global health from a rights-perspective. The curriculum will take into account the principles of adult learning theory and differences in learning styles by using a web-based interactive platform that includes cases and small group discussions.

Results

Anticipated Outcomes of this curriculum are that students will:

- 1) Recognize the impact of global activities on the health and wellbeing of children both locally and abroad.
- 2) Translate the principles and norms of child rights, health equity and social justice into pediatric practice and act as advocates of children’s health and wellbeing.

Conclusions

This curriculum will enable students to gain an in depth understanding of the complex interplay between biological, social and environmental determinants from a global perspective. Using the CRC as a primary tool in the analysis of children’s health and wellbeing, students will approach pediatrics as more than health care providers but as child advocates. Movement away from a purely biomedical approach to health and integration of a more global perspective into pediatrics will facilitate students to provide holistic care that is not simply concerned with the absence of disease, but aims at the promotion of optimum physical, mental and social wellbeing.

Global Health in the United States – The Development of the Border Health Track (BHT)

Lisa Ayoub-Rodriguez MD, Blanca Garcia MD, Fatima Gutierrez MD, Namrata Singh MD, Carmen Prieto MD
Texas Tech Health Science Center – El Paso

lisa.ayoub-rodriguez@ttuhsc.edu

Objectives:

1. Develop a path to train pediatricians to serve the border and growing immigrant population.
2. BHT is designed to train advocates, leaders and innovators for the border underserved and immigrant population.
3. The BHT seeks to attract global health trainees and facilitate a new career pathway.

Description:

El Paso is on the US/Mexico border and with Cd. Juarez, Chihuahua. There is a fence along the border but when it comes to healthcare there are no boundaries for our patients. The community is largest bi-national community and has one of the longest physician wait times in the US, with a physician to patient ratio equal to Panama and other underserved countries. Our setting lends to a great training environment to prepare our residents for border/immigrant medicine. We are in the first year of the BHT which has the following components:

1. Residents have applied to be a part of the BHT. Current cohort: Two PGY1 and Six PGY2 residents.
2. Border Immersion Month – Provided residents with education about social determinants of health, windshield surveys of local *colonias*, border family interviews, community meetings with non-profits and community advocates to further understand the challenges within a border community.
3. One week “live in” at an immigrant shelter meeting families and hearing their first hand stories of struggles with access to healthcare.
4. Quarterly conferences – Provides entire residency with education regarding leadership or advocacy then had small group skill building with border health residents.

Future: Establish plan to assure goal directed mentorship with project development and implementation. Expand 2-3 year curriculum for longitudinal training.

Evaluation data: Not yet available

Lessons learned/generalizability:

1. Curriculum will be tiered so that all residents will benefit from exposure to immigrant and border issues yet more in depth development will be used to skill build with the invested BHT residents.
2. After curriculum is further developed can be shared nationwide to enhance resident education without border proximity.

Simulating the Emotional Challenge of a Global Health Elective: A Multi-Institutional Study of a Novel Curriculum

Michael B. Pitt, MD, University of Minnesota/Amplatz Children's Hospital, Minneapolis, MN, Sabrina M. Butteris, MD, University of Wisconsin School of Medicine & Public Health, Madison, WI, Sophie B. Gladding, Ph.D., University of Minnesota, Minneapolis, MN, Philip R. Fischer, MD, Mayo Clinic, Rochester, MN, Cindy R. Howard, MD, University of Minnesota, Minneapolis, MN, Nicole E. St Clair, MD, Medical College of Wisconsin Department of Pediatrics, Wauwatosa, WI, Stephen D. Warrick, MD, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, Walter J. Eppich, MD, MEd, Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago, IL, Jacquelyn Kuzminski, MD, Medical College of Wisconsin, Milwaukee, Wisconsin, Laura M. Houser, MD, UW Madison, Madison, WI, Chuck Schubert, MD, Cincinnati Children's Hospital, Cincinnati, Ohio, Ann M. Campagna, MD, University of Minnesota, Minneapolis, MN, Tina Slusher, MD, University of Minnesota, Minneapolis, Minnesota

mbpitt@umn.edu

BACKGROUND: Increasing numbers of residents are participating in global health electives (GHE) in resource-limited settings. Pre-departure preparation is acknowledged as critical to residents success abroad. Yet most preparation is relatively passive relying on didactic presentations, discussion and independent readings. Little active preparatory curriculum exists to allow residents to experience and debrief the challenges they may face abroad.

OBJECTIVE: Design and evaluate a global health pre-departure simulation curriculum to prepare residents for common challenges they may encounter abroad.

METHODS: Pediatric global health educators from a consortium of 7 institutions agreed on common challenges residents encounter on GHEs including *frustration* at working with limited resources, *floundering* when encountering a disease they

haven't seen before, perceived *futility*, and dealing with *failure*. We developed cases addressing these themes and created 2-page simulation guides including a debriefing script. Facilitators from each site were trained to lead and debrief the cases. After each case, participants and facilitators completed an evaluation. We used descriptive statistics to analyze perceptions of usefulness of the simulation and conducted a thematic analysis of written comments of the most difficult and valuable parts of each case.

RESULTS: We obtained surveys from 160 resident learning encounters, and 52 facilitator surveys. Respondents generally found the simulations useful with a mean resident score of 4.49/5 (SD 0.82) and facilitator score of 4.85/5 (SD 0.36) on a 1-5 scale (1 = not at all useful to 5 = very useful). The two most common themes for the most difficult part of the case were: working with limited resources and lack of medical knowledge. For the most valuable part of the case, the two most frequent themes were: expansion of medical knowledge and learning to work with limited resources. Strong emotions such as frustration, nervousness, fear, and sadness were elicited in 98 % of participants.

CONCLUSIONS: Active pre-departure preparation for GHEs using standardized, simulated cases appears to be an effective way to prepare residents for the challenges they will face abroad when encountering unfamiliar diseases and working with limited resources. Residents reported experiencing strong emotions in the simulated environment, which may be useful in mitigating the challenges they can present when encountered while abroad.

Simulation Use for Global Away Rotations (SUGAR): Resident Reported Changes to Pre-Trip Preparation After Encountering Common Emotional Challenges in a Simulated Environment – A Multi-Institutional Study

Michael Pitt, MD, University of Minnesota, Sophia Gladding, PhD, Nicole St. Clair, MD, Sabrina Butteris, MD
On behalf of the SUGAR Investigators
mbpitt@umn.edu

Background: As more residents participate in global health (GH) experiences, educators struggle with how to best prepare them for the challenges of practicing medicine in resource-limited countries. To address this need, pediatric GH educators from seven institutions collaborated to develop a standardized, peer-reviewed, medical simulation curriculum, which addressed both medical management and emotional challenges often encountered on GH experiences. Over one year, 52 residents across seven sites participated in 162 cases, which included a simulation of a common challenge faced in resource-limited settings followed by a structured debriefing.

Objective: Determine common themes identified by residents regarding anticipated changes, if any, they planned to make as the result of the simulated GH experiences.

Design/Methods: We conducted a thematic analysis of written responses to the evaluation questions asking if they anticipated making any changes to their preparation as the result of the simulation session. Two authors independently coded the written comments using themes initially identified by one author. The two authors compared their coding, discussing areas of disagreement until consensus was reached. We then calculated the frequency of each theme and selected representative quotes.

Results: Residents provided 137 written comments. Ninety-six percent of the responses indicated a planned change as the result of the session with the most common change being plans to increase medical knowledge 76 (55%). Other changes in preparation included learning about or bringing specific resources, focusing on cultural, emotional or mental preparation, and attempting to better understand their role during the rotation. Categories of changes identified and representative quotes are listed in Table 1.

Conclusions: The opportunity to experience and process common challenges of practicing medicine in limited resource settings through simulation prior to their GH experiences appears to motivate residents to anticipate and take an active role in their pre-departure preparation.

Table 1: Resident Response - Are there any changes to your global health rotation pre-trip preparation that you anticipate making as a result of this simulation session? (n=137 written comments)

Change in Pre-Trip Preparation	Number of Comments with Theme (%)	Representative Quote
Expand/review medical knowledge	76 (55)	"Familiarize myself with common illnesses and complications in limited resource settings."
Obtain and take specific resources with me	26 (19)	"Bring WHO Hospital Care for Children* handbook along with me."
Learn about local resources	22 (16)	"Taking more time to try and understand available resources and treatment limitations before scenarios arise."
Cultural/language preparation	12 (9)	"Knowing to talk with locals about end of life culturally."
Emotional and mental preparation	9 (7)	"Prepare to deal with difficult conversations with parents."
Learning about roles and expectations	7 (5)	"Think about expectations and role."
Practice/gain clinical skills	6 (4)	"Practice Neonatal Resuscitation Program (NRP)."
No changes	6 (4)	"Not pre-trip [changes], but it makes me more cognizant of asking about resources once arriving."

*Pocket Book of Hospital care for children. WHO Press, 2013.

Simulation Use for Global Away Rotations (SUGAR): Useful in Preparation, But What About When Abroad?

Michael B. Pitt, MD, University of Minnesota, Sophia P. Gladding, PhD, Sabrina M. Butteris, MD

On behalf of the SUGAR Investigators

mbpitt@umn.edu

BACKGROUND: Simulation Use for Global Away Rotations (SUGAR) is a pre-departure simulation curriculum designed to provide residents participating in global health electives (GHE) the opportunity experience and debrief common challenges encountered in resource-limited settings.

OBJECTIVE: Determine residents' perceptions of the usefulness of participation in SUGAR *after* completing their GHE.

METHODS: Residents from seven institutions who participated in SUGAR were sent an anonymous survey on returning from their GHE asking about the utility of SUGAR, and to identify aspects which were particularly helpful while abroad. We used descriptive statistics to analyze perceptions of usefulness and conducted a thematic analysis of written comments of the most helpful parts of the simulation sessions.

RESULTS: We obtained surveys from 34 residents who had participated in SUGAR prior to their GHE. Respondents reported the simulations were useful with a mean score of 4/5 [SD 0.8] (1 = not at all useful to 5 = very useful). No residents felt they had done too many simulation cases, regardless of how many they had completed with 40% (6/11) of those who had participated in more than five cases indicating they should have done more. The most common themes for the aspect of SUGAR which was most helpful were: practicing working with limited resources (36%), learning to problem-solve (29%), and expanding medical knowledge (26%). These mirrored the most common themes identified in residents' comments immediately after the simulation sessions. However, a greater percentage of comments (26%) on return from GHE contained the theme of cultural preparation as the most helpful aspect of SUGAR as compared to 2% of comments from immediately after the simulation sessions.

CONCLUSIONS: Active pre-departure preparation for GHEs using standardized, simulated cases appears to be an effective way to prepare residents for the challenges they will face in resource-limited settings. Its usefulness appears to be durable with the utility of cultural preparation, in particular, increasing after participation in a GHE.

Developing a Global Health (GH) Residency Track- Experiential Education and Collaboration

Bahareh Keith DO, FAAP, Nicole Paradise Black M.D., M.Ed., FAAP

University of Florida

baharehkeith@peds.ufl.edu

Description: Collaboration is key to developing and implementing a GH Residency Track. We conducted needs assessment through literature search and discussions with residents. This process revealed high demand and positive impact. Our targeted needs assessment showed we did not have the financial/administrative support to assist our learners in achieving their GH goals. We obtained buy in from the department chair as a key stakeholder. He volunteered \$1000 scholarships for track residents. Given known challenges in retaining resident salary during experiential rotations we problem-solved ways to guarantee salary maintenance with the residency program director. Collaboration and survey of faculty across campus revealed a wide variety of willing mentors.

Our aim is in the words of Sara Grusky, to be “complacency shattering” and bring students to the “fundamental understanding of the need for profound social change.” Our primary objective was to create a longitudinal track that prepares residents for GH work. To develop a robust curriculum with specific competency-based learning we utilized the competencies from Academic Pediatric Association’s educational guidelines for pediatric residency. The American Academy of Pediatrics’ GH Training in Graduate Medical Education Guidebook was used as a resource for specific needs.

Our instructional strategy and content sequencing is based on higher-level cognitive tasks and experiential learning with faculty guidance. The framework of the curriculum has a longitudinal local component and on-site component specific to the student’s curricular objectives. We integrate noon conferences didactics to provide background information. Residents choose a problem to address, and in essence create their own curriculum by researching it, problem-solving, and developing a strategic plan. We stay true to John Dewey’s views on experiential education ensuring the experience has continuity and interaction.

Lessons Learned/ Generalizability- There was no alternative to a one-on-one discussion of the resident’s goals and our program’s ability to meet these learning objectives. Given the novelty of such learner- centered experiential learning we had to personally discuss this strategy with learners. Resident satisfaction with this method has been high based on informal comment. However, we are in the first cycle of residents and will have official results through survey in summer 2015.

The Cincinnati Experience: Training International Medical Graduates (IMGs) to create an impact locally and globally

Chuck Schubert, MD, Cincinnati Children’s Hospital and Medical Center
CHUCK.SCHUBERT@cchmc.org

Background

IMGs account for 30% of the pediatric workforce in the US; many work in Health Professional Shortage Areas (HPSAs). There are numerous issues regarding their presence but little research is available about their performance, outcomes or reasons for migrating to the US or returning home. The Cincinnati Children’s Hospital Pediatric Residency (CCHMC) has intentionally accepted IMGs from different continents since 2001. The program’s intention is to train competent pediatricians, able to give back both locally and globally.

Objectives

To assess the CCHMC IMGs for academic standing on admission, motivations to train in the US, contributions to care in their home country during / after residency, career outcomes, and decision making involved in returning to their home countries

Methods

This was an exploratory investigation using a custom designed survey developed through an iterative process of expert review followed by pretesting to ensure question clarity, ease of completion and correspondence with the research objectives. IMG participants included 11 current CCHMC residents and all 29 who graduated within the past 10 years. IMGs were primarily from Latin America, Asia and Europe

Results:

23 graduate and 10 current residents responded (82.5%). USMLE scores were comparable to US graduates. Of 23 graduates: 13 completed fellowship, 4 did not apply, 6 in fellowship. Of the 17 not currently in fellowship: 13 work in an academic setting and 4 in private practice. Five participated in rotations and 3 collaborated in research in their home country during residency. Six returned to their home country to work, while 4 intended to but were unable. All IMGs identified significant differences in pediatric training at home vs. in the US: stating more teaching, wider variety of

patients and better research opportunities. All IMGs identified disadvantages to returning to work in their home country, stating lack of infrastructure, local resistance to change and work environment.

Conclusions

IMGs training at CCHMC have comparable USMLE scores and career choices to their US counterparts. Many IMGs intend to return or collaborate with their home country institutions for personal and professional reasons. However, significant obstacles/disadvantages exist for IMGs to return home, partially defeating the purpose of the J1 visa return home requirement. In addition, IMGs staying in the US contribute to the US by working in HPSAs for 3+ years to waive the return home requirements.

International Collaborative Office Rounds (iCOR): An Innovative Global Health Education Strategy

Lynne C. Huffman MD, Stanford University School of Medicine, Stanford, CA
Carol C. Weitzman MD, Yale School of Medicine, New Haven, CT
Heidi M. Feldman MD PhD, Stanford University School of Medicine, Stanford, CA
Jennifer Kiing MBBS FRACP, National University Hospital, Singapore
Shang Chee Chong, MBBS MRCPCH, National University Hospital, Singapore
Brian G. Tang MD, Palo Alto Medical Foundation, Palo Alto, CA
huffmanl@stanford.edu

Objectives

Developmental and behavioral disorders are highly prevalent throughout the world. It is critical for clinicians who provide developmental and behavioral care to children understand the influence of culture on the presentation and management of clinical cases. Collaborative Office Rounds (COR) are designed to enhance pediatric care through the use of small group discussions at regular meetings of stable multidisciplinary teams. International COR or iCOR is an international health education strategy, developed to increase cross-cultural understanding of DBP problems among practicing clinicians (e.g., general pediatricians, developmental-behavioral pediatricians, child psychiatrists, psychologists, advanced practice nurses) and trainees (e.g., fellows, residents).

Strategy

Each month a faculty or trainee from one of three clinical sites (Singapore, Stanford, Yale) presents a case. There are 8-10 attendees at each site. Telemedicine video conferencing methods allow real-time group discussion across nations and time zones. iCOR uses a model of reflective peer supervision, which expands upon the medical model of case presentation by integrating patient data and clinician subjective experience of the patient and patient family.

Evaluation data

In Spring 2013, an evaluation research project assessed the impact of iCOR education experience on professional development with regard to knowledge, attitudes, and skills. Survey data were collected from 21 respondents (Singapore n=9, Stanford n=8, Yale n=4). On a 4-point scale (where 4=strong impact), mean scores ranged from 2.4 (impact of iCOR on changes in practice of screening) to 3.3 (impact of iCOR on family-centered care). Regarding extent to which iCOR addressed cultural competence, mean score on a 4-point scale (where 4=very well) was 3.5 (SD 0.5). On a 5-point scale, a global rating of the iCOR experience was very positive (Mean 4.3, SD 0.8). There were no significant site-based differences.

Lessons learned

- 1) Telemedicine approaches can facilitate the establishment of a broad, connected international DBP educational network.
- 2) Reflective peer supervision is an effective educational strategy, with positive impact on knowledge, skills, and attitudes.
- 3) Heightened awareness of cultural factors can enhance management of DBP problems and provider-patient relationships.
- 4) Appreciation of global practice variation suggests the utility of this education model in developing as well as developed countries.

Development and Implementation of a Long Distance Hybrid Subspecialty Cardiology Curriculum for Pediatric Registrars in Malawi

Laura Newberry, MD, College of Medicine, University of Malawi

Neil Kennedy, MRCPCH MMedSci DTMH, College of Medicine, University of Malawi

Elizabeth Anne Greene, MD, Children's National Medical Center, George Washington University School of Medicine, agreene125@aol.com

Our objective was to create a cardiology curriculum for pediatric registrars in Malawi.

At present there are no pediatric cardiologists on faculty or practicing in Malawi. On an initial teaching visit by Dr. Greene in April of 2013 focus groups with the registrars defined the topics they felt needed more in depth content. Drs Kennedy and Newberry added content to cover the specifications for the standardized pediatric examinations. The topics included basic ECGs and arrhythmias, the cardiac cycle, left to right shunts, cardiomyopathy, embryology, obstructive lesions, the cyanotic newborn, rheumatic heart disease and pharmacology. Self-learning modules and review questions were developed and edited by Dr. Greene with the pediatric cardiology fellows and their attending mentors at CNMC. The registrars were given 2-4 weeks to work on each one and return the quiz answers with any questions or comments. Writing the modules also provided a teaching and learning experience in international medical education for cardiology fellows at CNMC. A second site visit after the first 6 modules allowed small group review sessions of the previous modules, and introduction of the remaining 4.

Preliminary evaluation of 131 answers on the initial 6 modules shows a 95% correct rate. The registrars self-assessment of their level of knowledge increased from an average of 3.3 to 4.8 after the using the modules (Likert scale of 1-5); and their confidence increased from 2.25 to 4.3 on a scale of 1-5.

The curriculum development began with an invitation to work together from the faculty in Malawi after an initial visit. Content was determined by the Malawi registrars and the faculty. Modules were developed by the cardiology fellows and faculty at CNMC. There was very positive comments from the registrars as the modules were sent out. Response to the second visit was very positive and allowed development of an ongoing relationship with the registrars. This combination of a personal relationship with the registrars and good quality, requested content, resulted in learning and increased confidence on the part of the registrars while utilizing a long distance self-learning module cardiology curriculum.

Implementation of a Pediatric Emergency Triage Protocol and Curriculum in Santiago, Dominican Republic

Alexandra Leader MD, Natasha Desai MD, Sallyn Torres MD, Ramon Murphy MD MPH,

Suzanne Bentley MD MPH

alex.leader@gmail.com

Background:

Rapid and appropriate triage is critical to emergency medical care. Arturo Grullón Regional Children's Hospital (HIRUDAG), an academic tertiary care facility with a catchment of 7.5 million people in the Dominican Republic (DR), lacked a triage protocol in the Emergency Department (ED). Patients' vital signs were not routinely measured and pediatric residents managed the ED without formal teaching on principles of emergency triage. Patients were historically managed in order of time of arrival, not by severity of illness. Hospital faculty identified the lack of a pediatric triage protocol and triage education as a barrier to achieving acceptable quality of emergency care.

Methods:

The house staff and faculty of HIRUDAG and the Global Health Institute of Mount Sinai collaborated to assess clinical and educational needs in the ED and to design and implement a pediatric emergency triage protocol and didactic curriculum based on the World Health Organization's Emergency Triage Assessment and Treatment course materials. The triage protocol redefines patient flow, house staff responsibilities, and hospital charting tools in the ED at HIRUDAG. A three-tiered system of triage classification is used with accompanying didactic materials outlining pediatric resuscitation algorithms. Bi-monthly lectures on pediatric emergency triage are given to house staff with pre/post-tests to evaluate experience, attitudes, and knowledge of triage principles. Responsibility for facilitating triage education sessions was transitioned to senior residents at HIRUDAG and the chief resident performs regular monitoring of the triage protocol to ensure ongoing quality implementation.

Results:

Initially, 80% of house staff respondents had never been taught principles of triage; 91% felt triage education to be critical to their medical training. Results of pre/post-tests over 2 years indicate that house staff displayed improvement in case-based triage of emergent and urgent patients after the didactic lecture and discussion. Test scores improved from pre/post on both knowledge-based MCQ and case-based decision making questions (pre-test score 32% vs. 78%, p 0.03). Additionally, residents all reported increased confidence in triaging patients.

Conclusion:

The need for a pediatric emergency triage protocol in an academic tertiary care center in the DR was addressed by integrating a newly designed triage protocol and emergency triage curriculum for house staff. A collaborative approach transitioned responsibility for teaching didactic sessions and monitoring the triage protocol to senior residents at HIRUDAG, achieving sustainability of both the protocol and educational initiative.

Trainee feedback in Rwanda can guide medical education reform

Mark Corden, MD, CM, Li Cowell, Sheree Schrage, Tej Nuthulaganti, Patrick Kyamanywa
Children's Hospital Los Angeles
mcorden@chla.usc.edu

Objective of the strategy:

Recent global health initiatives have focused on improving human capacity in medical education in low-resource settings. One example is the Rwanda Human Resources for Health (HRH) Program, which pairs year-long US medical faculty with Rwandan colleagues to train resident physicians. Although trainee surveys are commonly used to evaluate medical education in resource-rich settings, few use such surveys in resource-limited settings. In our novel intervention, we solicited Rwandan trainee feedback, hypothesizing that serial surveys could be used to evaluate the success and sustainability of the HRH program over time.

Description of the strategy:

We administered a confidential, web-based survey to Rwandan medical postgraduates starting in 2013. An expert group designed an initial survey, based in part on ACGME resident surveys. Trainees rated themselves in certain competencies, evaluated their educational experience, documented time spent supervised, and reported their future plans.

Evaluation Data:

On initial survey, trainees were very positive about their skills and the overall training program (e.g. 98% felt confident about the majority of their clinical decisions; 95% felt the program helped them learn a significant amount of new information). These results were less helpful in suggesting improvements to Rwanda's medical education reform.

Questions with less positive responses stood out in contrast. Some led to specific recommendations for improvement (e.g., 47% disagreed that the program provided research/scholarly opportunities). Others were more open to interpretation (e.g., 82% disagreed that their quality of life was good). In this case, free-text suggestions for improving the program provided possible explanations (e.g. 15% referenced trainee salaries; 12% requested increased supervision).

Lessons Learned/Generalizability:

In 2014, authors refined the survey. We conducted cognitive interviews with a small group of Rwandan trainees to minimize cultural differences in interpretation of survey questions. Future plans include focus groups to unpack issues uncovered in the initial surveys.

Through Rwandan program leadership's continuing support for this survey process, we found that including trainee perspectives has been useful in evaluating and improving medical education in our low-resource setting. While the process of survey implementation can be generalized to other global medical education programs, the tool itself will likely be more useful if targeted to the local trainee population and context.

A Multidisciplinary Longitudinal Educational Program to Improve Neonatal Outcomes in the Republic of Georgia

Candice A. Hobbs, NNP, William A. Carey MD, Malinda Harris MD, Peter Smith RT, Christopher E. Colby MD, Mayo Clinic
Rochester MN
hobbs.candice@mayo.edu

Background: A collaborative relationship between physician and civic leaders in the Republic of Georgia and a group of multidisciplinary neonatology care providers from Mayo Clinic began in August of 2012. The specific aim of this program was to improve the health care delivered to their neonatal population.

Methods: Four separate visits to the Republic of Georgia have occurred between 2012 and 2014.

Visit	Strategy
8/2012	Needs Assessment/Discussions with Minister of Health, UNICEF and USAID
4/2013	Multidisciplinary team from Mayo taught Georgian neonatologists through lectures, locally produced culturally sensitive educational videos and simulation <ul style="list-style-type: none"> • Resuscitation • Neonatal Airway Management • Peripherally Inserted Central Catheter Insertion • Therapeutic Hypothermia • Surfactant Administration
11/2013	Mayo Neonatologists returned to Georgia for ongoing education on implementation of therapeutic hypothermia and management of congenital heart disease
11/2014	Multidisciplinary team returned and reinforced earlier educational principles and simulated use of newly integrated hypothermia delivery system.

Results: Analytic data is challenging to collect in the Republic of Georgia. However, observational data suggest that through this educational initiative, newborns are more likely to receive appropriate resuscitation, airway management, surfactant administration and peripherally inserted central catheters. There has now been at least one baby who has been treated with therapeutic hypothermia in Georgia while being remotely supported from the neonatologists at Mayo Clinic.

Conclusions: A multidisciplinary team based educational strategy in the Republic of Georgia has enhanced the care that newborns receive.

Development of International Fundamental Pediatric Support (PFCCS) Instructors

Beth Ballinger, M.D.¹, David Tsibadze, M.D., Ph.D.³, Sheri Crow, M.D.², Giorgi Kvitsinadze, M.D.³, Grace M. Arteaga, M.D.²
 Division of Trauma, Critical Care, General Surgery¹, Division of Pediatric Critical Care Medicine², Maternal and Child Health, D. Tvildiani Medical University³.
 Mayo Clinic, Rochester, MN, and D. Tvildiani Medical University, Tblisi, GEORGIA
Crow.Sheri@mayo.edu

Objective:

PFCCS trains providers to manage acutely ill children. Our goal was to evaluate PFCCS as a tool to develop a consistent and sustainable critical care educational system in the Republic of Georgia while using a “train the trainer” education strategy.

Methods:

Over 18 months and 4 visits, Mayo Clinic and Georgian Pediatric Critical Care leadership collaborated to: 1) Survey health care needs within the Republic of Georgia, 2) Preview PFCCS lectures and simulation scenarios to evaluate interest and win “buy-in” from key stake-holders throughout the Georgian medical infrastructure, and 3) Identify PFCCS instructor candidates. Training for Georgian PFCCS instructors was achieved as follows: 1) PFCCS course consultants presented PFCCS course Day 1 materials to Georgian instructor candidates. 2) Simulation learning principles were taught to

instructor candidates and basic equipment was acquired, 3) Instructor candidates presented PFCCS Day 1 to Georgian learners while mentored by PFCCS consultants, 4) Evaluation and debriefing with instructor candidates using PFCCS course evaluation forms, and 5) Translation of PFCCS slides into the Georgian language. Steps 1-4 were repeated for PFCCS Day 2 content.

Results:

Six candidates were identified and completed the PFCCS instructor training. The trainer's first independent presentation of the PFCCS course was taught to 15 Georgian medical students. These students demonstrated significant improvement in their test scores following course completion (n=14) (pretest: 38.7±7 vs post-test 62.7±6, p<0.05). A Likert scale of 1 to 5 (1=not useful; 5=extremely useful) was used to evaluate the responses for a) Relevance of PFCCS content to clinical work: Very useful (mode=9), b) Effectiveness of lecture delivery: Effective (mode=8), and c) Value of skill stations for clinical practice: Very useful (mode=8).

Conclusion:

PFCCS instructor training is an effective tool that can be tailored to the local needs of an international setting with demonstrated user satisfaction. Further studies are needed to show improved patient outcomes through translation of PFCCS principles into the Georgian healthcare system.

Care of Marginalized Medically Complex Children as a Teaching Tool in Global Child Health: Systems Based Practice

M. Townsend Cooper, Jr. MD
The University of Oklahoma
Department of General and Community Pediatrics
Michael-T-Cooper@ouhsc.edu

Objectives: By the end of the elective, residents will be able to:

1. Appreciate the complex systems affecting the care of individual patients through participating in an advocacy program for medically fragile children.
2. Utilize that knowledge to develop a broader understanding of the impact of system factors on health.
3. Reflect that knowledge back on their U.S. experience.

Description: Under the direction of a locally based faculty who had broad knowledge of the medical environment, residents were involved in cases of impoverished medically fragile children for this developing elective. They participated in an existing care coordination project geared toward these children that involved local community members and health professionals of varying background and education. In addition to participating in direct patient care, they witnessed local workers strive to find solutions to barriers to care for the individual patients. These barriers included economic, social, political, and security obstacles unique to different micro-environments in Lima, Peru. The residents also visited patient homes, which gave them an opportunity to learn about the living conditions, community structures, transportation and other challenges that impacted access to care.

Lessons Learned/Generalizability: As an on-site physician living in Lima for 3 ½ years and working in the informal urban settlements, it became clear that some of the most important lessons to be imparted to the residents were regarding health system and patient interaction with the complex, variable environment of the resource poor urban setting. Significant breakdowns regularly occur at this intersection and lend themselves to advocacy. The most effective way to expose residents to the myriad of complex determinants was to involve them in care and advocacy of medically fragile children. Each Global Health environment is unique but has similar factors in play, so a similar program expanded to other sites could help residents appreciate the necessity of understanding local structures when engaging a Global Health population. The complexity of the cases compels the residents to consider multi-faceted problems. In addition, highlighting these interactions in the Global Health setting allows learners to re-examine U.S. systems with a new perspective upon their return.

Graduate Medical Education in a Resource Limited Setting: Focus on the Development of a Pediatrics Residency Program in Haiti

Antonia P. Eyssalenne, MD, PhD
University of Miami/Jackson Memorial Hospital
Program Director HSDBM Pediatrics Residency Program

aeysallenne@med.miami.edu

Background: To become a residency trained doctor in Haiti, one must graduate from medical school, do a year of social service, mostly unsupervised, then compete with 380 medical school graduates for only 180 training spots that are available throughout the country.

Child mortality in Haiti is recorded as high as 165 deaths/1000 live births. It is well known that many of the deaths that occur are preventable. Currently there are only 400 pediatricians for almost 4 million children.

In order for Haiti to make an impact on this devastating mortality rate by improving the overall health care of children and intervening with the premature death caused by preventable illness, it needs to have more opportunities to train local physicians in the art of Pediatric medicine.

Methods: Hospital Bernard Mevs Project Medishare and Hospital St. Damien-Nos Petite Freres et Soeurs are the clinical rotation sites. The University of Notre Dame of Haiti agreed to be the academic affiliation. The curriculum for the residency program was written within the context of the Accreditation Council for Graduate Medical Education (ACGME)-International standards. The curriculum was presented in person to the department in the Ministry of Health that is responsible for medical education programs in order to obtain government approval. Both hospitals underwent independent site visits by Ministry representatives and the program was officially approved in November 2014.

Results: Seven first-year and seven second-year Haitian residents are being trained by a curriculum focused on Evidence Based Medicine, direct supervision, oral presentations, journal clubs and simulation exercises and workshops. Resident projects are focused on improvement of hospital systems and patient education to advance the health outcomes of Haitian children. The introduction of the program in both hospital sites also significantly improved physician staffing.

Conclusion: Creating a residency program in a resource poor setting requires the collaboration of leaders in education in the host country, government approval, and the establishment and reinforcement of standards. It is also an economical way to staff a hospital that is low on human resources, can prevent brain drain, and should be considered for funding by international aid agencies.

Use of Rapid Cycle Deliberate Practice Simulation in a Resource-Limited Setting

Samantha L. Rosman, MD¹ & Marideth C. Rus, MD²

Boston Children's Hospital, Global Pediatrics Program¹, Texas Children's Hospital, Section of Pediatric Emergency Medicine²

samantha.rosman@gmail.com

Objectives of Strategy

Simulation is an effective teaching technique to improve performance in acute resuscitation but is not well studied in resource-limited settings. In these settings, residents often enter with vastly different knowledge and skill levels, making it challenging to run traditional simulation scenarios to accommodate all learners. Whereas debriefing in simulation often focuses on advanced skills occurring later in the scenario, initial recognition and early basic interventions are most likely to be life saving in resource-limited settings. Our goal was to develop and implement a simulation curriculum in Rwanda that would result in rapid improvement of basic pediatric resuscitation skills, utilize scenarios and materials relevant to a this setting, and focus on skills and knowledge most likely to be life saving in such settings.

Description of the Strategy

Rapid cycle deliberate practice (RCDP) is a novel simulation technique first described by Hunt, et al that allows for rapid feedback and mastery of skills with graded difficulty levels.¹ It places an increased focus on initial assessment and first steps in stabilization and maximizes time in deliberate practice of skills. We designed a simulation curriculum specifically for a resource-limited setting utilizing commonly available supplies and locally common pathologies. The curriculum consists of four cardiac, four respiratory and four shock cases. We will expand it further after the implementation phase to include specific tropical disease scenarios. We are embedding this implementation within a study comparing RCDP to traditional simulation curricula by dividing all Rwandan pediatric residents randomly into one of the two groups.

Lessons learned

We have found RCDP to be easily implemented with subjective improvement in skills from beginning to end of each session and new skills maintained from session to session. Although we await data from study completion, initial skills appear to be better retained between sessions than the more advanced techniques acquired as scenarios progress. It seems well suited for a limited-resource setting because it focuses primarily on mastering recognition and basic management of common life-threatening conditions, easily accommodates learners of varied experience levels and allows teams to progress at their own pace based on skill acquisition. We hope that following the completion of this study we will be able to disseminate our curriculum widely.

Helping Babies Breathe – A Platform for Global Networking

Uthayavane Balasubramaniam, MD, Kavithashree Gnanasekaran, MD & Lynn Garfunkel, MD
University of Rochester Medical Center Pediatrics Residency Program
Kavi_Gnanasekaran@urmc.rochester.edu

Objective:

Developing a Global Health project that is evidenced based, meaningful and of importance for the partnering community is daunting especially within the time and financial constraints of residency training. Two senior residents planned and executed a project to improve neonatal survival in the Dominican Republic (DR), a country where the neonatal death rate from birth asphyxia hovers around 20%.

Description:

Per the World Health Organization, in resource limited settings, the focus of birth attendants is on the mother which leads to insufficient care of the newborn during the first minute of life. This increases the risk of birth asphyxia leading to death in otherwise healthy newborns. Helping Babies Breathe (HBB) curriculum developed and sponsored by the AAP, is a train the trainer model for teaching the essential skills of newborn resuscitation in the critical ('Golden') minute after birth. Use of this curriculum to train birth attendants in resource-limited settings, has been shown to improve neonatal survival.

Lessons Learned:

We needed to become certified trainers in HBB and concurrently we needed to develop a partnership with interested providers in the DR. Our collaboration with the Ministry of Health (MOH) ultimately allowed us to set up training programs in three different care settings. The work with several key providers in the MOH enabled us not only to practice and share our expertise as clinicians and educators, but improved our cultural capacity. Together we adapted the HBB standardized curriculum to be applicable in the unique culture and practice of the DR. By utilizing an evidence-based and established curriculum, we could concentrate our in-country efforts on optimization of the educational experience for our learners. This opportunity gave us exposure to bidirectional global health education early in our careers and solidified our understanding of, and need for, appropriate collaboration in pediatric GH care. The success of this global health project was dependent on several factors. Most importantly we were able to align with an organization and providers that shared our passion for improving early birth survival. In addition our collaboration helped to appropriately modify and improve the training to satisfy cultural norms and expectations.

Ulienda wapi: Long-term follow-up of past participants of North American and European rotations from Moi University School of Medicine, Kenya

Jordan Huskins MD¹, Philip Owiti MBChB^{2,3}, Charity Wambui MBChB^{2,3}, Geren Stone MD, DTM&H^{4,5}, Rachel Umoren MB.BCh, MS^{1,6}, Jill Helphinstine MD^{1,7}, Emily P. Machogu^{1,3}, Jane Carter MD⁸, Cynthia Johnson⁹, Debra Litzelman MD^{3,6,7}, Simeon Mining DVM, MSc, PhD¹⁰, Paul Ayuo MBChB, MMed, DLSHTM, MSc¹¹, Adrian Gardner MD, MPH^{2,3,11}

¹Indiana University School of Medicine, Department of Pediatrics, Indianapolis, IN

²Academic Model Providing Access to Healthcare (AMPATH), Eldoret, Kenya

³Indiana University School of Medicine, Department of Medicine, Indianapolis, IN

⁴Center for Global Health, Global Primary Care (GPC) Program, Division of General Medicine, Department of Medicine, Massachusetts General Hospital, Boston, MA

⁵Harvard Medical School, Boston, MA

⁶Center for Health Services Research, Regenstrief Institute, Inc., Indianapolis, IN

⁷Center for Global Health, Indiana University, Indianapolis, IN

⁸The Warren Alpert Medical School of Brown University, Department of Medicine, Providence, RI

⁹Indiana University, Department of Biostatistics, Indianapolis, IN

¹⁰Moi University, College of Health Sciences, School of Medicine, Department of Immunology, Eldoret, Kenya

¹¹Moi University College of Health Sciences, School of Medicine, Department of Medicine, Eldoret, Kenya

jhuskins@iu.edu

Background: Little research has been done on the impact of international rotations on career choices of medical learners from resource-limited settings or their effect on the “brain drain” phenomenon. Over 20 years, 256 Moi University School of Medicine (MUSOM) learners in Eldoret, Kenya have participated in short-term international electives in North America (NA) and Europe. We report results of a long-term follow-up study on elective impact.

Methods: A cross-sectional survey was conducted of 180 former MUSOM medical students and 33 registrars in medicine and pediatrics who participated in medical electives in NA and Europe, 1995-2010. Study data were managed using REDCap electronic database survey tool hosted at Indiana University.

Results: 100 (47%) trainees responded to the survey. 78% described it as one of the most influential experiences of their medical education. Although 52% reported that the rotation made them more likely to seek opportunities outside Kenya, 93% currently practice in Kenya. Respondents expressed factors influencing site of practice for Kenyan doctors.

Table I: Demographics (n=100)

	# (%)
Age (mean)	34
Gender	
Female	30(30)
Male	70(70)
Hometown	
Urban	38(38)
Rural	62(62)
Site Rotation	
North America	88(88)
Europe	12(12)
Current Residence	
Kenya (Urban)	82(82)
Kenya (Rural)	11(11)
Outside Kenya	7(7)
Primary Employer	

Government	61(61)
Private	22(22)
Other	15(15)

Table II: Reported Impact of Elective (n=100)

	#(%)
Describe Rotation Impact	
One of the most influential experiences of my medical education	78(78)
Somewhat influential	21(21)
Not very influential	1(1)
Greatest Influence of Elective (Top 3)	
Different standard of care	89(89)
Specialty medicine and subspecialty consultation	38(38)
Extensive use of technology for diagnosis/treatment	75(75)

Table III: Factors for Remaining in Kenya (Top 3, n=100)

Family relationships	65(65)
Professional responsibility to give back to community/country	53(53)
Ongoing training/education	43(43)

Conclusions: International medical rotations for trainees from resource-limited settings are valued components of medical education, offering exposure to different standards of patient care and technology. The majority of participants remain in Kenya, arguing against contribution of such electives to “brain drain”. Expressed factors for remaining in Kenya, such as desire to give back to one’s community and educational opportunities, may encourage a “brain gain”.

Career choices and global health engagement: 24-year follow-up of U.S. participants in the Indiana University-Moi University elective

Rachel A. Umoren, MD, MS,^{1,4} Adrian Gardner, MD, MPH,^{2,3,9} Geren S. Stone, MD, DTM&H,^{5,6} Jill Helphinstine, MD,^{1,8} Emily P. Machogu, MD,^{1,2} Jordan C. Huskins, MD,¹ Cynthia S. Johnson,⁷ Paul O. Ayuo, MBChB, MMed, DLSHTM, MSc,³ Simeon Mining DVM, MSc, PhD,³ Debra K. Litzelman, MD^{2,4,8}

¹Indiana University School of Medicine, Department of Pediatrics, Indianapolis, IN

²Indiana University School of Medicine, Department of Medicine, Indianapolis, IN

³Moi University College of Health Sciences, School of Medicine, Eldoret, Kenya

⁴Center for Health Services Research, Regenstrief Institute, Inc., Indianapolis, IN

⁵Center for Global Health, Global Primary Care (GPC) Program, Division of General Medicine, Department of Medicine, Massachusetts General Hospital, Boston, MA

⁶Harvard Medical School, Boston, MA

⁷Indiana University, Department of Biostatistics, Indianapolis, IN

⁸Center for Global Health, Indiana University, Indianapolis, IN

⁹Academic Model Providing Access to Healthcare (AMPATH), Eldoret, Kenya
rumoren@iu.edu

Abstract

Background: Global health experiences evoke a profound awareness of cultural differences, inspire a reprioritization of professional values, and provide a lens for addressing global health care challenges. This study compares the long-term career and practice choices of participants in a 2-month Indiana University (IU)-Moi University elective in Kenya from 1989-2013 with those of a control group.

Methods: IUSM students and residents with a global health elective (GHE) experience and a random sample of IUSM alumni without GHE experience were surveyed on their clinical practice, public health and global health activities. We used Chi-squared tests to compare groups (participants vs. non-participants) on categorical variables. When there was an overall significance, pair-wise comparisons were done using Hochberg's step-up Bonferroni adjustment for multiple comparisons. Two-sample t-tests were used to compare continuous variables.

Results: Of the 396 former participants contacted, 203 responded (response rate 51%). Responses were compared with 217 responses from the control group. The study group significantly differed from the control group on type of practice, influence of cost on medical decision-making, and providing healthcare outside the U.S. for ≥ 1 week/year (Table 1). GHE participants were more likely to provide care to underserved U.S. populations ($p=0.037$), participate in global health, public health, public policy or health services research activities ($p=0.005$), and be involved in local or global health advocacy ($p=0.001$).

Table 1 Results of Multivariable Analysis

	Odds Ratio	95% C.I.	p-value
Practice Type*			0.01
Hospitalist vs. Primary Care	1.23	(0.62, 2.44)	NS
Hospitalist vs. Subspecialist*	2.20	(1.19, 4.06)	0.01
Primary Care vs. Subspecialist*	1.79	(1.06, 3.03)	0.03
Cost affects choices (yes vs. no)*	2.66	(1.13, 6.26)	0.03
Providing care outside U.S.†			<0.001
≥ 1 week/year vs. < 1 week/year†	4.93	(1.94, 12.57)	<0.001
≥ 1 week/year vs. never†	4.57	(2.08, 10.05)	<0.001
< 1 week/year vs. never	0.93	(0.50, 1.73)	NS

* $p<0.05$; † $p<0.001$

Conclusion: Even many years out of training, GHE participants are more likely than controls to be generalists working with underserved populations, to report that an awareness of the cost of care affected their medical decision-making, and to be involved in global health, public health or public policy.

Impact of Global Health Electives

Christiana Russ, MD, T Tran, Judy Palfrey, MD

Christiana.Russ@childrens.harvard.edu

Background

Despite strong interest in global health (GH) rotations, robust assessment of their impact remains elusive. This is a mixed methods retrospective study to identify improved skills, projects, or presentations (outputs), self-reported effect on knowledge, and attitudes (outcomes), and impact on careers of GH electives done in the Boston Combined Residency Program (BCRP).

Methods

We developed a mixed methods survey based on a logic model describing outputs, outcomes and impact of GH electives. All BCRP alumni who received funding for a GH elective from 2002-2011 were eligible to participate. The survey was emailed via Redcap in March 2014. Associations between mitigating factors and means of the Likert responses for outcomes were assessed using Chi-squared testing for categorical and T testing for numerical responses. Qualitative data was analyzed using principles of thematic analysis.

Results

Of 104 eligible participants, we received completed responses from 69 (66%) describing 94 rotations. 70% reported GH fieldwork prior to residency, with 20% having spent more than a year. GH electives significantly impacted clinical knowledge and skill, social determinants awareness, and systems awareness (Table 1). Longer elective duration was associated with higher impact on clinical knowledge ($p=0.0107$), and awareness of social determinants ($p=0.0407$). Work from the electives resulted in 11 presentations at conferences, and 7 academic publications. Continued work in global health or underserved was reported by 44 (64%) of respondents, and was associated with both previous experience ($p<0.0001$) and cumulative time on GH rotations ($p=0.005$). Quantitative and qualitative data supported significance of career impact; trainees also described improving as domestic clinicians in areas of cultural competency, health equity, and resource utilization.

Conclusion

In an era of individualized learning, pediatric training programs and governance should support trainees desiring to work in global child health by enabling adequate time for global health rotations, and providing mentorship and training based on trainee experience, career goals and learning needs.

Table 1 Impact of GH Electives

Impact	None	Mild	Moderate	Large
Clinical knowledge and skill n=94	6 (6%)	38 (40%)	38 (40%)	12 (13%)
Social determinants awareness n=92	1 (1%)	15 (16%)	47 (51%)	29 (32%)
Health systems awareness n=93	1 (1%)	7 (8%)	46 (49%)	39 (42%)
	Neutral	Affirming/Expanding	Altering	
Career development n=94	33 (35%)	48 (51%)	13 (14%)	

Importance of Cultural Relativism in Global Health Field Work: Evaluating the Comparison of its impact on Disparities of HIV in Senegal and Botswana at the beginning of the HIV Pandemic

Bunmi Bakare, MD,MPH
 Neonatal-Perinatal Fellow, PGY 6
 Rutgers Robert Wood Johnson Medical School
 1 Robert Wood Johnson Place
 New Brinswick, NJ 08901
bakareol@rwjms.rutgers.edu

Background

Cultural relativism is the principle that an individual human's beliefs and activities should be understood by others in terms of that individual's own culture. It is further defined as the view that moral or ethical systems, which vary from culture to culture, are all equally valid and no one system is really "better" than any other. Our relation from one culture to another affects our pattern of behavior and in some cases judgment system. Its impact on the success of global health fieldwork had long been underestimated until recent years. One historical example of lack of cultural relativism is evident in the mission to eradicate polio. Resistance was met in Northern Nigeria partly due to lack of cultural relativism that resulted in a cohort of the population being unvaccinated against polio.

Objective

To examine the importance and relevance of cultural relativism to global health fieldwork, a thorough comparison will be made here of its impact on the disparities of the incidence and prevalence of HIV in two African Countries.

Method and Strategy

A thorough evaluation of Senegal a small Western African country with HIV prevalence of 1% at the beginning of the HIV pandemic and Botswana, a South African Country with a prevalence of 38% around the same time using statistical information from the United Nations and AIDs (UNAIDS) and statistical data from each country's governing body. Both Countries received international field workers, attempt at safe sex education and distribution of condom use amongst other interventions to combat the HIV pandemic. Cultural relativism played an important role in the success of these interventions in one nation and its lack of resulted in poorer/unsuccessful outcomes in the other.

Conclusion and Lesson Learned

Based on these facts, it is evident that the success in the field of Global health is heavily dependent on the thorough evaluation of the location in which the work needs to be done and a thorough understanding and respect of the culture while setting personal bias and experiences aside. Understanding the impact and role of religious leaders, local healers and other leaders in the community is of paramount importance. Involvement of these influential figures with first helping them understand the mission and the purpose has been proven historically for a successful fieldwork mission.

Reference:

1. www.unaids.org/en/HIV_data/epi2006/default.asp
 2. www.avert.org/aidsbotswana.html
 3. www.odi.org.uk/rapid/projects/r0166/docs/Aids_report_country_study_Botswana.pdf,
 4. 2002 It's never as easy as ABC: Undertakings of Aids in Botswana. Suselte Heald, Brurel University. www.asol.info.viewarticle.php?id=1657
 5. The Cultural construction of Aids and its consequences for prevention and in Botswana. Benedict Ingstad, medical anthropology quarterly, new series vol 4; no 1, culture and behavior in the Aids Epidemic (March 1999) Book pages 28-40.
 6. Senegal first Aids case: www.un.org/ecosocdev/geninfo/afrec/vol15no1/15o1pdf/151aids//pdf.ac
 7. Improvement in AIDS knowledge, perceptions and risk behaviors over a short period in a rural community of Senegal, Enel E.L.G.P.C., [International Journal of STD & AIDS](http://www.ijstd.org/vol8no11/11-687-687(7).pdf), Volume 8, Number 11, 1 November 1997, pp. 681-687(7)
 8. Meda N, et al., Low and stable HIV infection rates in Senegal: natural course of the epidemic or evidence for success of prevention? Centre MURAZ, Organization de Coordination et de Cooperation pour la lutte contre les Grandes Endemies, Bobo-Dioulasso, Burkina Faso, West Africa.
 9. http://data.unaids.org/Publications/IRC-pub04/una99-34_en.pdf, reference as a general analysis of Senegal's Aids situation and strategies.
-