

# Global Health Short-Term Elective Experience During Radiology Residency and Medical School: An Educational Model



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## Introduction

A sizable discrepancy exists between available radiology opportunities in global health and the interest for those projects by medical students and radiology residents. Medical student participation in international experiences rose from 5.9% in 1978 to 30.8% in 2010 [1,2], and published data show that over 1/3 of Internal Medicine and Surgery Residency programs in the U.S. offer global health activities to residents[3]. To our knowledge, there has been no described education curriculum for global imaging away electives for medical students or radiology residents. We describe an educational model for such a curriculum based on successful ultrasound based imaging opportunities that occurred in rural Uganda during 2010 - 2012. This model addresses goals and objectives, tools for assessment, supervision, elective preparation, funding and ACGME approval.

## Defining Goals and Objectives

The 6 ACGME core competencies of medical education were the basis for the goals and objectives used in our global health curriculum.

Core Competency	Radiology Global Health Elective Goals and Objectives
<b>Patient Care</b>	
	Improve patient care in under resourced areas of world, especially maternal health
<b>Medical Knowledge</b>	
	Exposure to illnesses not seen at home institution
	Obtain hands on experience with ultrasound in traditional and innovative ways
	Refine knowledge of global health crises and World Health Organization Goals
<b>Practice-Based Learning and Improvement</b>	
	Practice Quality Improvement Project
	Reflect on experience, daily journal
<b>Interpersonal and Communications Skills</b>	
	Experience global healthcare systems and challenges
	Effective and respectful team communication
	Effective and respectful communication despite language Barrier
<b>Professionalism</b>	
	Demonstrate compassion, respect and cultural sensitivity
	Maintain ethical principles in foreign environment
	Follow through on tasks/commitments
<b>Systems-Based Practice</b>	
	Ultrasound research study to evaluate novel technique
	Experience international IRB systems/ research
	Implement new technology in a rural location
	Experience global healthcare styles and challenges

## Defining Assessment Criteria

- Formal written evaluation of participant (\*our criteria below)
- Formal evaluation of experience by participant
- Written Self-evaluation
- Practice Quality Improvement Project [4].



*PERSONAL CHARACTERISTICS	RESEARCH COMPETENCE
Interpersonal relations with research participants	Ability to collect & organize research literature
Interpersonal relations with research team	Ability to organize & assess data
Diligence	Ability to formulate methodological &/or data analytic plans
Reliability	Self-learning/Willingness to take initiative
Thoroughness	Technical skills
Efficiency	Demonstrates interest in the research program
Flexibility	Willingness to take on a variety of tasks

## Obtaining Institution Approval at UVM

### Residents:

- Receive approval from the local Graduate Medical Education Committee
  - Present proposal for elective to committee and give formal presentation of project upon return
- IME/DGME Reconciliation
- Receive approval from Program Director
- Satisfy requirements detailed in the elective curriculum described here

### Students:

- Successfully complete first 3 years of curriculum
- Select specialty advisor to grant approval and sign documentation of educational experience
- Submit evaluation documentation for elective

## Standards of Supervision



Standards for supervision and independence should equal those of U.S. medical institutions

• **Clinical electives:** supervisor must be physically present with the participant, and able to communicate effectively with student/resident

• **Research electives** may be independent without supervisor physically present, but must have communication plan in place

## Elective Preparation (Travel and Project)

The short-term global radiology elective participant was responsible for the following:

### Travel Preparation

- Travel clinic for vaccinations and prescriptions
- Obtain supplemental Travel/Health Insurance
- Consult Human resources for policies on Malpractice and Workman's Compensation for off-site rotation
- Notification of banks/credit card companies of travel
- Obtain basic knowledge of country (customs, behavior, food)
- Flight and safe accommodation arrangements

### Project Preparation

- Define and demonstrate proficiency in skill set necessary to participate in elective
  - This will vary based on the elective pursued



## Expectations for Funding



### Costs to consider :

- Plane ticket
- Lodging and meals
- Travel Clinic appointment, medications, vaccinations
- Supplemental Insurance
- Necessary clothing/supplies for environment
- Passport +/- Visas

### Sources of funding to consider.

- Travel grants/scholarships
  - ACR Goldberg-Reeder International Travel Grant [5]
- Imaging the World Scholarships
- RAD-AID grants
- Radiology Department grants
- Private Sponsors
- Personal finances/donations



## Results: Successful Radiology Electives



Four radiology residents and 9 medical students successfully participated in ultrasound based research and clinical projects in rural Uganda between 2010 and 2012. Projects involved teaching and implementing a novel ultrasound technique for screening examinations of various organ systems, with emphasis on OB.

- Radiology resident work satisfied criteria by the GMC for an away elective in residency training
- Medical Student work acted as a scholarly project between first and second years of school, and as fourth year approved electives.

## Conclusions

Short term radiology global-health experiences can be successfully instituted in medical student education and radiology residency programs that satisfy requirements in medical education set by the ACGME and maintain standards of supervision comparable to those in the United States. New changes to radiology residency curriculum will offer more flexibility for electives in the fourth year. This may promote involvement in global health, and potentially a global health track in radiology residency.

## References

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