

Clendening Summer Fellowship  
Department of History and Philosophy of Medicine  
University of Kansas School of Medicine  
2012

Whitney Clearwater  
School of Medicine  
Class of 2015

Targeting a captive audience:  
an educational intervention for moms and babies in Tema, Ghana

### Introduction

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The United Nations identified eight areas of dramatic need threatening the lives of our global community in their Millennium Development Goals (MDGs). The fourth MDG is to reduce child mortality, identified in part because annually nine million children die before reaching their fifth birthday (United Nations, 2010). The fifth MDG is to improve maternal mortality. Each year 350,000 women die from childbirth or complications of pregnancy (UN, 2010). Further, sub-Saharan Africa has a disproportionate burden of poor health outcomes and is a major focus of interventions to reach the MDGs.

This disparity in health outcomes is exemplified in Ghana, a sub-Saharan African country, where maternal and child mortality is a significant problem. For instance, in Ghana the lifetime risk of maternal death is 1 in 66 compared to the United States which is 1 in 2100 (United Nations Children's Fund, 2010). Additionally, the under five mortality rate in Ghana is 69 per 1000 live births compared to 8 per 1000 live births in the US (UNICEF, 2010).

In response to the poor health outcomes, Ghana initiated a national health insurance scheme (NHIS) in 2003. The NHIS successfully increased the likelihood of women receiving prenatal care, delivering at hospitals with trained health professionals present, and decreased birth complications for the population of women using this service (Mensah et al., 2010). However, underutilization undermines the success of the NHIS. For example, only 57% of Ghanaians deliver their babies in the presence of a skilled attendant compared to 99% in the US (UNICEF, 2010). Additionally, among children under the age of five only 45% with diarrhea receive oral rehydration and 51% with suspected pneumonia are taken to an appropriate healthcare provider (UNICEF, 2010).

The physicians and other providers at the Women's Ward at Tema General Hospital (TGH) in Tema, Ghana are committed to addressing the maternal and child health crisis, regardless of their

limited staff and resources. Due to their limited staff, ante-natal patients often have long wait times at the hospital before they are seen by a health professional.

For my Clendening Fellowship, I am proposing to provide my skills in data analysis and as a health educator to work toward prevention services that might ease TGH's burden. I am proposing to target the captive audience of ante-natal patients and provide a pre- and post-natal education intervention that will serve to address delays in accessing care.

## Background

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Dr. Montello addressed a group of first year medical students interested in the Clendening Fellowship and challenged us to think of what we wanted to do with this one life we have. If I could do only one thing in this life it would be to work for women's rights in healthcare. I arrived at this mission after witnessing dramatic disparities in women's rights regarding access to healthcare both internationally and locally.

In the summer of 2007, in Tanzania while working with a local physician and educating high school students and peer support groups on HIV/AIDS I gained the passion for my life's ambition. During this experience I was abruptly shown the inequalities in healthcare access and education. Unfortunately, these inequalities often have a greater impact on women. In many societies women's status is inferior to men's. This prevents access to education, resources, and healthcare. However, raising the health status of women has a greater effect on the health outcomes of a community. Women often fill the role of caretakers for the community. Through this experience I identified a need to help underserved women but also an opportunity to sustainably improve health outcomes of a community.

In order to gain a broader understanding of the determinants for inequalities in healthcare I pursued a Masters in Public Health. I earned a degree in biostatistics and epidemiology so that I may be able to analyze the determinants of health and foster support for effective means to improving lives. During my masters, I took every opportunity to reach beyond the classroom and apply the skills I learned. I attended a United Nations conference in Australia that brought together Non-Governmental Organizations working to achieve the MDGs. At this conference I saw a template for partnering with communities to identify health problems and own solutions. Additionally, I completed an internship as a Middle School Reproductive Health Educator at Planned Parenthood Los Angeles. While educating in underserved populations in Los Angeles I witnessed shocking lack of access to healthcare and education similar to what I observed in Africa. For example, one of my 7<sup>th</sup> grade students asked me if drinking milk could prevent pregnancy. I learned that working toward improving the lives of underserved women abroad can inform work with similar communities right next door.

I entered medical school with a passion and motivation to ease individual's suffering and improve health outcomes. The practical clinical tools and critical thinking gained during my training at KUMC will help me to work toward this goal. However, clinical care while direct and powerful is only a part of sustainably improving health outcomes. In order to continue my experience in community service I joined the boards of the Community Leadership Track founded by Dr. Allen Greiner and Dr. Joshua Freeman, Health Professionals for Human Rights, and am active at JayDoc.

If approved, my experience in Ghana will capitalize and strengthen my skills learned from previous experience but also help me to realize my passion and achieve my goals. My hope is not only to provide a service that can benefit the patients at TGH but also translate these skills in building culturally appropriate and need based education curriculum for underserved women locally.

### Description

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The goal of my project is to provide a needed health service to the Women's Ward of Tema General Hospital. I have identified three objectives necessary in achieving my goal. The first objective is to develop and provide an educational intervention for ante-natal patients at TGH. Next, to determine whether the educational intervention was successful in addressing a need for the patients I will statistically evaluate changes in knowledge using a pre- and post-knowledge assessment. Finally, I will share the results of my research with the providers at TGH for use in future educational interventions and applications for funding.

The choice of an educational intervention was to address the delays in access to care in a sustainable and feasible manner. Recognized delays in access to obstetric care include the delay in recognizing warning signs and severity, physically reaching care, and the delay in accessing appropriate care once at a healthcare facility (Cham et al., 2005). I believe a needs-based and culturally appropriate education intervention will address both the delay in recognizing warning signs as well as provide prevention tools for ante-natal patients as they prepare for the birthing process and childcare.

Additionally, interventions that target education of women tend to improve outcomes for the community and therefore are a potentially sustainable approach. The World Bank states that, "girls' education yields some of the highest returns of all development investments, yielding both private and social benefits that accrue to individuals, families and society at large" (Lawson, 2008). When women become educated and go to work fertility rates decline, mother-infant mortality decreases, standard of living increases as well as life expectancy and health overall (Lawson, 2008).

## Timeline:

March 1, 2012: Apply for KU Human Subjects Committee exemption.

March 11, 2012 – May 11, 2012: Shadow Dr. Gene Lee, JayDoc Women's Health Night providers, and Suzanne Ryan.

May 13, 2012 – May 18, 2012: Conduct a literature review.

May 13, 2012 – May 18, 2012: Develop an outline for the focus group to be held in Ghana with practitioners and patients.

May 19, 2012: Travel to Tema, Ghana.

May 21, 2012 – May 25, 2012: Facilitate a focus group with TGH practitioners and patients.

May 28, 2012 – June 1, 2012: Develop a 45 minute curriculum on pre-natal and post-natal care that is both needs based and culturally appropriate.

June 4, 2012 – June 8, 2012: Develop pre- and post- knowledge assessment survey.

June 11, 2012 – June 15, 2012: Sample the clarity and understanding of the pre- and post-test with a sample population of ante-natal patients.

June 18, 2012 – July 6, 2012: Conduct a minimum of three education sessions with the pre- and post-knowledge assessments.

July 9, 2012 – July 13, 2012: Analyze quantitative knowledge change using STATA software.

July 16, 2012 – July 20, 2012: Facilitate a debriefing with the providers from TGH.

July 21, 2012: Travel to Kansas City.

## Methods

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I will be working closely with Dr. Greiner and Dr. Kessler throughout my project. Both Dr. Greiner and Dr. Kessler assisted with formatting my project to be comprehensive and applicable to my interests and the interests of TGH. Dr. Kessler is an adjunct faculty at KUMC and has contact with Dr. Deganus the physician at TGH.

To develop a curriculum that is based on the needs of a high risk population and to obtain information about standard of care protocols, emergency procedures, and education topics and strategies I will shadow and discuss suggested educational topics with local providers. The providers that have agreed to assist me information gathering include: Dr. Gene Lee, OB/GYN physician at KUMED, JayDoc OB/GYN's at their Women's Health Night, and Suzanne Ryan, a local midwife. A literature review of information on education topics and strategies as well as pre-existing education material from NGOs operating in Ghana will also help inform my educational curriculum. Finally, I will conduct a focus group with physicians and patients at TGH to gather qualitative data on cultural and geographic determinants involved in pre- and post-natal warning signs, best practices, and needs assessment regarding reproductive health. The template for the education intervention will include both pre-natal and post-natal care information. The pre-natal portion will include a birth plan, prevention strategies, warning signs of imminent labor and potential complications for the baby, and at home tools in case hospital

delivery is not an option. The post-natal portion will include prevention of infection, management of breastfeeding and nutrition, warning signs for the baby, and contraceptive use. The skills I developed as a reproductive health educator in both Tanzania and Los Angeles will aid in my ability to effectively deliver this curriculum.

In order to evaluate the effectiveness of the educational intervention I will conduct a pre- and post-knowledge assessment. I will obtain KU Human Subject's Committee exemption because there is less than minimal risk for an anonymous survey. Pre- and post-knowledge assessments will be administered to the sample of patients participating in my educational intervention. The post-assessment will additionally include a satisfaction component in order to improve subsequent interventions that TGH might incorporate. To increase the power of associations between changes in knowledge I will conduct a minimum of three educational interventions with pre- and post-knowledge assessments. I will analyze the data using STATA, a bio-statistical computer program in which I have experience.

Finally, I will debrief the providers at TGH about my research outcomes so that they may utilize the information for future education interventions or applications for funding. Specifically, I will elaborate on topics where patients scored lowest as well as aspects from the intervention that were enjoyed most.

## Contacts

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Allen Greiner, MD, MPH  
Professor and Associate Chair for Research  
University of Kansas School of Medicine

Sarah Kessler, PhD, MPH  
Assistant Adjunct Professor  
University of Kansas School of Medicine

Dr. Deganus  
Physician at Tema General Hospital's Women's Ward, Ghana

Gene Lee, MD  
Obstetrics and Gynecology  
University of Kansas Physicians  
Medical Office Building

Suzanne Ryan, MSN, CNM, WHCNP  
Suzanne Ryan & Associates Midwives

(877) 551-0001

See appendix for correspondence with contacts and mentors.

Budget (see appendix)

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Category	Estimated Cost	Subtotal
Travel (airfare)	\$1801.00	\$1801.00
Room and Board		
Food	\$10/day x 65 days	\$650.00
Lodging	\$17.50/day x 65 days	\$1137.50
Laundry Facilities		\$50
Incidentals		
Transportation		\$50
Printing costs (surveys)		\$50
Grand Total		\$3738.50

If accepted for the Clendening Fellowship, I understand that I will be personally responsible for expenses that exceed the funds provided by the scholarship.

Bibliography

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## Appendices

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### Appendix A: Correspondence with Dr. Kessler

Sarah Kessler skessler2@kumc.edu

12/29/11 ☆

to Allen, Whitney, Muger, Joseph ▾

Dear Whitney,

I know this email is a bit delayed, but I'm just returning from abroad and have an idea you may be interested. I met with an extremely dedicated and inspiring OBGYN, Dr. Sylvia Deganus, in Ghana at the Tema District Hospital (just outside of the capital, Accra). Only about 60% of women in Ghana access medical obstetric care for a variety of social, cultural, economic and access related issues. In public health we talk about the 3 Delays resulting in maternal mortality: the delay in recognizing warning signs that indicate medical assistance will be needed, the delay in physically getting to a hospital or clinic where women can receive care and finally, the delay in receiving appropriate medical care once you arrive at the health facility (Cham et al. 2004). There are ample opportunities to address any/each of these delays among women and families in Ghana.

The obstetric unit is understaffed and they would certainly welcome a medical student who could assist both clinically and in regard to improving their outreach to women in the community. If you think you may be interested in pursuing this, please let me know.

best wishes,  
Sarah

### Appendix B: Correspondence with Dr. Deganus

Sarah Kessler

Jan 19 ☆

to Whitney ▾

Hi Whitney,

I pasted the info below from Dr. Deganus regarding the official request for permission. We can send a copy of your summary for her feedback later.

I will be happy to have students over for their electives. The interested students should send in their request in writing to the Medical Director, Tema General Hospital, P. O. Box 14, Tema, Ghana, for official permission. We can then proceed from there. Since the hospital does not have any accommodation for such students special arrangements will have to be made with a hostel near the hospital. They should also therefore send me a copy of their request letters so I can follow up if necessary.

best,  
Sarah

## Appendix C: Correspondence with Dr. Lee

**Gene Lee** [glee@kumc.edu](mailto:glee@kumc.edu)

to Whitney ▾

Sure, pls page me at [9139175847](tel:9139175847) to setup a time to meet

-----Original Message-----

From: Whitney Clearwater

To: Lee, Gene <[glee@kumc.edu](mailto:glee@kumc.edu)>

Sent: 2/1/2012 11:07:53 AM

Subject: First Year Medical Student Shadowing Experience

Hello Dr. Lee,

My name is Whitney Clearwater. I am a first year medical student at KUMC. I'm trying to get in contact with Dr. Lee in OB/GYN. I apologize if this isn't the correct contact.

I'm traveling to Ghana this summer to provide an education intervention for at risk ante-natal patients at a women's hospital. Unfortunately, I don't have much experience with OB/GYN. I'm interested in shadowing you to observe best practices, emergency protocol, and any educational interventions provided at KU. I'm really just trying to get a baseline for what sort of practices are appropriate and any advice about the most important education topics to cover.

Please let me know if your available and interested.

Thank you for your time and attention, Whitney

## Appendix D: Airfare estimate



American Airlines  
with other carriers

\$ 1,801  
round trip  
USD

avg pp price including all taxes, fees and discounts

Suggested Itinerary [show 12 more flights at this price](#)

Flight	Date	From	To	Depart	Arrive	Flight Time	Stops	Aircraft
<b>AA* 4156</b>	19-May-12 Sat <i>* Operated by AMERICAN EAGLE</i>	Kansas City MCI	Chicago ORD	11:35a	1:05p	1h 30m	0	ER4 Economy
<b>AA 86</b>	19-May-12 Sat	Chicago ORD	London LHR	6:05p	7:50a <i>+1</i>	7h 45m	0	777 Economy
<b>VS 657</b>	20-May-12 Sun	London LHR	Accra ACC	10:45p	5:00a <i>+1</i>	6h 15m	0	343 Economy
<b>VS 658</b>	21-Jul-12 Sat	Accra ACC	London LHR	10:10a	6:00p	7h 50m	0	343 Economy
<b>AA 99</b>	22-Jul-12 Sun	London LHR	Chicago ORD	7:45a	10:10a	8h 25m	0	777 Economy
<b>AA 591</b>	22-Jul-12 Sun	Chicago ORD	Kansas City MCI	1:05p	2:30p	1h 25m	0	M80 Economy

[map it](#) **SELECT**

## Appendix E: Lodging estimate

### J2N Guesthouse

A8 Almond Road, Regimanuel Comm. 19, Lashibi, Tema, Accra, Ghana

Rates for: 20 May 2012 - 27 May 2012 [ [Change Dates](#) ]

Arriving: 20 May 2012

Departing: 27 May 2012

**Check Availability**

Filter Result:  €  \$  £ US Dollar Prices displayed per person per night in US Dollar (USD)

Room Type	19 Sat	20 Sun	21 Mon	22 Tue	23 Wed	24 Thu	25 Fri	26 Sat	27 Sun	Guests
Standard Single Private Ensuite	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	0
Basic Double Bed Private Ensuite	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	0
Standard Double Bed Private Ensuite	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	0