**Samantha Rudolph**

**FRIDA: Forwarding Research for Improved Detection and Access for Cervical Cancer Screening in Tlaxcala, Mexico**

The distribution of cervical cancer clearly reflects social inequalities in health care across the globe. Since the introduction of the Pap smear, women of the developed world have experienced a 70 percent reduction in the incidence of squamous cell cervical cancers (Brown 2012). The low reproducibility and high false-negative rate of the Pap smear, however, have hindered the test’s success in the developing world. Indeed, 88 percent of cervical cancer deaths occur in developing countries (Ferlay 2008).These inequalities are further compounded by the way in which cervical lesions progress. At early, asymptomatic stages, cervical cancer has a very high cure rate; once at the advanced stage, the cancer proves largely incurable. Therefore, in countries where physicians make diagnoses largely based on a patient’s exhibition of symptoms, the cancer has already reached an untreatable stage.

This summer I traveled to Mexico to work with a research group seeking to reduce cervical cancer deaths for Mexican women. As both a masters and a medical student, I was excited to approach both the clinical and public health implications of this disease. I set my sights on Mexico because as a nation they have been at the forefront of research and have worked to pave the way for middle- to low-income countries combating high mortality rates from cervical cancer.

Mexico was one of the first middle-income countries to introduce the Human Papillomavirus (HPV) vaccine, and now that the contraction of HPV is recognized as a necessary cause of cervical cancer (Walboomers 1999), public health workers have high hopes for the future. Nonetheless, as my research team explained to me, it may take another two to three decades before the benefits of these programs can be evaluated. In the meantime, secondary prevention methods remain necessary to reduce the burden of disease. In Mexico, cervical cancer is still among the leading causes of cancer mortality for Mexican women (Palacio-Mejía 2009).

For this reason, this research group in Mexico has been exploring new technological advances and their potential to replace the Pap smear. Recent studies have shown that tests capable of detecting high-risk HPV (HR-HPV) are superior to the Pap smear (Ikbener 2007, American Society for Colposcopy 2007, Dufrense 2011, Bosch 2003). Based on the findings of these studies, the HPV test has been introduced as a complement to the Pap smear in Mexico (Secretaría de Salud 2008).

This historic modification of the cervical cancer screening algorithm, however, must be further tweaked. Transient HR-HPV infections are very common, and the vast majority of these infections spontaneously regress after a year or two (Tota 2011). Only a small fraction of cases will lead to the persistent infection responsible for cervical cancer (Schiffman 2007, Rodríguez 2008). Therefore, a triage test is needed to identify women in need of further diagnostic confirmation and treatment.

This goal of finding the perfect triage test is the basis of the FRIDA project on which I collaborated this summer. On the FRIDA project, the National Institute of Public Health (Instituto Nacional de Salud Publica, INSP) paired up with the Mexican Institute of Social Security (Instituto Mexicano de Seguridad Social, MSS) and the Tlaxcala Ministry of Health in the state of Tlaxcala, to pilot a number of new triage tests that have recently been introduced commercially. These triage tests are produced by a wide range of manufacturers, and their targets vary from viral proteins to enzymatic biomarkers. The research team hopes one of these triage tests will fit within the current screening program by effectively stratifying HR-HPV positive women into a high risk group in need of further testing and a low risk group.

My involvement with this project goes back further than just this summer. Before starting as a student at the UC Berkeley–UCSF Joint Medical Program, I worked as the international coordinator for this project. I helped to set up the study in the early stages, and since starting the Joint Medical Program, I have continued to collaborate with the Mexican research group and plan to use a portion of the data as part of my master’s thesis.

International collaboration is challenging, and by traveling to Mexico this summer, I was able to work directly with the research group on this project. The project started in May and is slowly building up within the Tlaxcala health system. I was able to visit Tlaxcala to observe the project infrastructure and communicate with the project field coordinators. After spending a full year as a coordinator helping the project grow from a simple idea, it was extremely gratifying to see the project up and running.

In Cuernavaca, the location of the National Institute of Public Health and its associated labs, I was also able to spend time with the lab personnel coordinating the screening and triage tests. The technology is new to Mexico, and the lab required a number of modifications. I was also able to sit in on training sessions in which the manufacturers trained the lab personnel to perform their tests and troubleshoot potential problems.

Beyond my time in the field, I was also able to work with the database and perform a preliminary analysis of the population in which we are piloting these new triage tests. By describing the characteristics of the population, we will have a sense of how generalizable our results will be to the rest of Mexico.

This project will continue to be rolled out over the course of the next few years, and I am looking forward to further collaboration and the opportunity to see what is next.

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