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News  
from  
the  
Field

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**Prayer Item:** The GARDASIL vaccine against cervical cancer will soon be approved by the Pharmaceutical Regulatory Authority (PRA) for use in Zambia.

## Cervical Cancer in Zambia

**Cervical cancer** is the second most common cancer in women worldwide. According to the World Health Organization (WHO), 500,000 new cases are identified each year. 250,000 women die of cervical cancer each year. 80% of cases occur in low-income countries making it a disease affecting mainly poor women in the developing world. Africa bears much of this burden. In Africa, a woman dies from cervical cancer every 10 minutes. In Zambia, the incidence of cervical cancer is quite high. It is estimated that 1 out of every 3000 women is diagnosed with cervical cancer each year. This alarmingly high rate of cervical cancer makes Zambia the country with the second highest incidence in the entire world.

In 1995, researchers identified the cause of cervical cancer. This finding was truly remarkable. It was the first necessary cause of a cancer ever to be discovered. **Human papilloma virus (HPV)** was determined to be that necessary cause of cervical cancer. HPV is a sexually transmitted virus. Thus, it is not possible to get cervical cancer unless the HPV virus is contracted through sexual contact. Most new HPV infections occur between the ages of 15 and 25 years old. The worldwide HPV infection rate is 9-13%. It is estimated that 630 million people are infected with HPV.

There are 100 different subtypes of the HPV virus. Some HPV subtypes are low risk and others have been identified as high risk. The HPV subtypes identified as low risk are very unlikely to cause cervical cancer. Some examples of low risk subtypes are HPV 6 and HPV 11 which are known to cause genital warts. The HPV subtypes identified as high risk are very likely to cause cervical cancer. Some examples of high risk subtypes are HPV 16 and HPV 18. These specific high risk subtypes are responsible for 67% of the cervical cancer cases. In 2007, 2 research articles were published about the prevalence of these high risk HPV subtypes in Zambia. HPV 16 and HPV 18 were identified in 20% of the women found to be HPV positive.

There are 2 types of cervical cancer prevention programs. The first type is primary prevention which means that it impacts the actual cause of cervical cancer, HPV. The pharmaceutical company, Merck, developed a vaccine against HPV infection. The vaccine is called **GARDASIL**. It prevents infection with HPV subtypes 6, 11, 16, and 18. Research studies showed that the vaccine is highly effective at preventing HPV infection. In June 2006, the Food and Drug Administration (FDA) approved the use of GARDASIL in the U.S. Over the next 5 years, Merck will be donating 5 million doses of the vaccine to patients living in developing countries. In September 2008, Lesotho and Ghana were the first 2 African countries to receive the vaccine. Zambia is one of the 108 that is eligible for the GARDASIL Access Program. However, it is required that the donated vaccine must first be approved for use in the country that it is intended for. As of August 2010, the GARDASIL vaccine still had not been approved by the Pharmaceutical Regulatory Authority (PRA) for use in Zambia.

The second type of cervical cancer prevention program is secondary prevention. It takes about 10 years from the initial HPV infection to develop cervical dysplasia. Cervical dysplasia is a term used to describe abnormal cells of the cervix. The goal of this prevention program is to detect and treat precancerous cells before they develop into full blown cervical cancer. After cervical dysplasia develops, it takes another 10 years for invasive cervical cancer to develop. In the U.S. the Pap smear has been the main type of screening test for cervical dysplasia. After the introduction of Pap smear screening exams in the 1960's, the number of new cervical cancer cases in the U.S. has almost been eliminated. Pap smear screening tests are not readily available in developing countries due to high cost and other logistical factors. An alternative screening exam to the Pap smear was introduced a few years ago. This test is called **visual inspection of the cervix with acetic acid** or **VIA**. The advantages for VIA exams are low technology, inexpensive, materials are locally available, and can be performed by non-physicians at all levels of the health system. Research studies in developing countries by the Bill and Melinda Gates Foundation and Johns Hopkins have shown that the VIA exam is effective at identifying cervical dysplasia.

It is very important the VIA screening exam be linked with treatment of cervical dysplasia. In developing countries, the most readily available treatment available for cervical dysplasia is called **cryotherapy**. During the same visit, the procedure involves applying a cryoprobe with frozen nitrous oxide gas to the cervix. This treatment can kill the abnormal cells on the cervix thus preventing the cells from progressing to cervical cancer. The first ever cervical cancer screening clinic at Zimba Mission Hospital was held on July 2. The materials for the screening clinic were made possible through 2 generous donations. **Dr. Diane Long**, an obstetrician/gynecologist from Memphis, TN, obtained the cryotherapy probe equipment. **Julian Wehrle** and **Lisa Schlotter**, two visiting medical students from Freiburg, Germany, made a financial contribution which allowed us to purchase the nitrous oxide from the AFROX gas company here in Zambia.

Death from invasive cervical cancer is not pleasant. Over the past 3 years, we have had at least 10 patients in their mid-forties die from advanced cervical cancer in our ward. These patients are admitted very late when the cancer has already spread throughout the pelvis. Pain control with ibuprofen is usually the only treatment offered to them. Hopefully with the scaling up of these 2 new cervical cancer prevention programs, women in Zambia dying of advanced cervical cancer can soon become a thing of the past.