Public release date: 21-Sep-2008

Contact: Alex Fernandes
a.fernandes@qmul.ac.uk
020-782-227-910
Queen Mary, University of London

HPV DNA test identifies cervical pre-cancerous disease in developing countries with 90% success rate

Results of the first study to determine the accuracy of a new rapid screening test for HPV (Human Papilloma Virus), created specifically for use in the developing world, have shown it to be 90 per cent accurate in detecting precancerous cervical disease when tested on a group of local women in Shanxi province, eastern China. The results, published online today (Monday 22 September) in *Lancet Oncoloy,* conclude that the test; careHPV, could provide an effective primary screening method for cervical cancer prevention in rural and low-resource settings.

Designed by Attila Lorincz - Professor of Molecular Epidemiology at Barts and The London School of Medicine and Dentistry - to be conducted in rural settings by personnel with minimal training, careHPV can detect 14 high-risk types of carcinogenic Human Papilloma Virus in around 2.5 hours. Cytologic screening available in North America and Europe – where an appropriate infrastructure exists - has led to a 50 – 80 per cent reduction in mortality, but it has previously not been possible to translate this expertise to the developing world where taking smears properly and reading them has been problematic. Working in collaboration with the Program for Appropriate Technologies in Health (PATH, Seattle WA, USA) and funded by the Bill and Melina Gates Foundation to lead research into a new HPV DNA screening test which was rapid, simple, and affordable, Professor Lorincz created the careHPV test because there was no such provision deemed appropriate for use in low resource settings.

careHPV is a signal-amplification assay adapted from HC2 (the Hybrid Capture test, widely regarded as the gold standard routine HPV DNA test, and initially created by Professor Lorincz for use in developed countries). It requires only a small area (approximately 25cm x 30cm) of clean bench-top work space, no mains electricity or running water, and can be performed by non-technical support staff in approximately two and half hours. The short assay time allows testing and clinical follow-up on the same day. The prototype was used in an outcomes study in Shanxi province, China with 2,388 local women aged 30 to 54. The ability of the careHPV test

to detect precancerous cells was found to be 90.0 per cent, whilst 84.2 per cent of the women without precancerous disease were identified as negative by the test.

Professor Lorincz said: "The clinical performance of my new HPV test in China appears promising, it is based on decades of research and I hope it will be employed widely to save the lives of millions of women. The new test needs to be studied in many countries to confirm its suitability for cervical cancer screening on the global stage"

Cervical cancer is the second most common cancer in women with about 500,000 new cases and 300,000 deaths every year. Almost 100 per cent of these cancers are caused by carcinogenic Human Papilloma Virus and - because it is possible to stop the infectious cycle and therefore the disease - are completely preventable. Vaccination against HPV shows promise for future generations and is currently being implemented in the UK, mostly in young school-aged girls. However, the current vaccine has some significant limitations because it is most effective against only two HPV types (16 and 18) that account for approximately 75 per cent of cervical cancers. In addition the vaccine is ineffective in women who have been exposed to the virus (a majority of women over the age of about 20). Thus screening remains the main hope for the current generation of women aged 20 years or above and will need to be continued for at least the next 30 years.

###