Human Papillomavirus, or HPV facts are not always clear. Fiona Hale answers the most commonly asked questions.

WHAT IS HUMAN PAPILLOMAVIRUS? Human Papillomavirus, or HPV, is an extremely common virus, which can cause genital warts, cervical cell changes and cervical cancer. There are over 100 types of HPV. Types 6 and 11 are associated with genital warts. Types 16 and 18 are regarded as the types, which most often lead to cervical cancer. Types 16 and 18 are associated with genital warts. Cervical cancer is the most common cause of mortality in HIV positive women.

Cervical cancer is the most common cancer affecting women in developing countries, where 80% of all cervical cancer deaths occur. It is a leading cause of mortality in HIV positive women.

HIV and HPV: Human Papillomavirus, often abbreviated as HPV, is an extremely common virus, which can cause genital warts, cervical cell changes and cervical cancer in all cases of cervical cancer worldwide occur in less-developed countries (WHO, 2007). HPV has been strongly associated with cervical cancer in major studies. HPV is only transmitted through sexual intercourse and cervical cancer is recognized as an AIDS-defining illness (National Center for Infectious Diseases, 1992), and is a leading cause of mortality in HIV positive women (PATH, 2007). Unlike some virus association conditions, such as Acquired Immunodeficiency Syndrome (AIDS), HPV has never been officially declared as a sexually transmitted infection (Khan et al, 2007).

HOW IS CERVICAL CANCER DIAGNOSED AND TREATED? Cervical cancer is one of the most preventable and treatable cancers (ACCP, 2004). Cervical abnormalities are detected with a cervical smear test, also known as a Pap smear or papanicolaou smear. It is generally recommended that HPV positive women should receive an annual Pap smear. However, in many countries this does not happen. Pap smears need to be sent to a laboratory and the results then sent back to the doctor. Results may take some time, or get lost. For some women, it may be difficult to collect the results (PlusNews, 2007). In many places, the health system does not have the resources to make sure outpatient treatments, such as cryotherapy and loop excision, which remove the affected cells in the neck of the womb. Vaccination campaigns are now in place in a number of countries, and national vaccination programmes are now in place in the United Kingdom and the United States – though the cost of approximately US$375 places it out of reach for many countries. One vaccine (Cervarix) protects against HPV types 16 and 18, and the other (Gardasil) protects against types 16, 18, 6 and 11 (which cause genital warts). The World Health Organisation (WHO) recommends that the primary target for vaccination should be adolescent girls of 9 to 13 years of age, aiming to reach them before sexual debut and, thus, before exposure to HPV. WHO also recommends consideration of expanding vaccination for a secondary target group of young women aged 14-26 (WHO, 2006).

IS HPV VACCINATION SAFE FOR HIV POSITIVE WOMEN? In some contexts, significant numbers of girls and women in both ‘primary’ and ‘secondary’ target age ranges for vaccination, may be HIV positive. Information on the safety and efficacy of HPV vaccines in HIV positive people is not yet available (WHO & UNFPA, 2006). Safety trials in HIV positive women are currently being conducted and due to be completed by 2010. Mass vaccination is also promoted in countries with high HIV prevalence, it will be important to take into consideration the outcome of safety trials. Many researchers that safety will not be a major issue. The vaccines are not live (eliminating concern that they may cause infection), and experiences with other vaccines in immune-compromised people are reassuring. However, it will be important to evaluate possible toxicity and other complications for people living with HIV (Palefsky, Gillison & Strickler, 2005).

IS HPV VACCINATION EFFECTIVE IN HIV POSITIVE WOMEN? There are concerns among researchers that current HPV vaccines will be less effective in protecting against cervical cancer in HIV positive women, than in HIV negative women. This is because cervical abnormalities, such as HPV genotypes, other than HPV 16 and 18, may frequently be associated with cervical cancer in HIV positive women (Clifford et al, 2006; Sahasrabudhe et al, 2007).

So, while vaccination may provide protection against HPV 16 and 18 to HIV positive women not yet exposed to these genotypes, the range of HPV types causing disease in HIV positive women is likely to mean the benefits of vaccination are reduced. The effectiveness of HPV vaccination is also likely to depend on the timing, with more benefits if it is given once HAART has been successfully initiated (Palefsky, Gillison & Strickler, 2006). Against this backdrop, some researchers have called for the development of new, ‘polyvalent’ vaccines, which would protect against numerous HPV genotypes, increasing the chances of success for HIV positive women (Sahasrabudhe et al, 2007; Chaturvedi & Goedert, 2006).
VACCINATING BOYS AND MEN
Current WHO guidelines do not include vaccination of boys. However, the exclusive focus on vaccinating girls and women has gender implications, and adds to the health-seeking burden on women, who may already face difficulties in accessing sexual and reproductive health services (Harries et al., 2008).

CONTINUED NEED FOR CERVICAL SCREENING
Even if HPV vaccination is in place, it will not eliminate cervical cancer. It will continue to be important for women to receive regular screening (whether by Pap smears or ‘test-and-treat’ techniques, such as VIA). This is especially important for HIV positive women, in whom cervical cancer can be particularly aggressive and fast-developing. Continued advocacy to improve screening policy and implementation is needed.

POSSIBLE NEXT STEPS
Research is urgently needed to fill a number of gaps in current knowledge. These include:

• How to implement effective and accessible HPV/cervical cancer prevention, screening and treatment in low-resource, high HIV-prevalence settings
• Safety of HPV vaccination for HIV positive women
• HPV genotypes in HIV positive women with invasive cervical cancer
• How to ensure that the existence of HPV vaccines does not increase gender and health inequalities (including: more research on the usefulness of vaccinating boys and men, vaccination pricing policies, acceptability issues, etc)

Any research on this issue must be responsible, and sensitive to ethical issues including:

• HIV and HPV testing of research participants
• Power dynamics between healthcare professionals/researchers seeking research participants, and women seeking healthcare

For more information and comments, please contact the author on fiona.hale@googlemail.com.

References
Moody, J.R. et al. 2006. ‘HPV and pre-neoplastic and neoplastic lesions of the cervix in South Africa: A case-control study’. In: BMC Cancer, 6(130) [Online].