Cervical cancer prevention and the Millennium Development Goals
Scott Wittet & Vivien Tsu

Abstract
The advent of new technologies such as the human papillomavirus (HPV) vaccine and HPV DNA tests – along with new insights into the appropriate use of low-resource technologies such as visual inspection of the cervix and treatment of cervical lesions with cryotherapy – have increased optimism about the potential for effective disease control in low-resource settings. Nevertheless, it is also important to ask ourselves how new health initiatives contribute, or fail to contribute, to major global undertakings such as achievement of the Millennium Development Goals (MDGs).

While reproductive health in general, and cervical cancer prevention in particular, are not explicitly mentioned among the MDGs, they are implied; and it is certain that women cannot contribute to sustainable development without good health. The question is, in what ways do scaled-up cervical cancer prevention activities, including introduction of the new HPV vaccines and increased access to precancer screening and treatment, contribute to attainment of the MDGs?

when the girls who are screened become older.

Some of the benefits of improved cervical cancer prevention are obvious—the reduction in suffering and death of mature women and the grief and economic burden felt by their families. As demonstrated above, prevention programmes can also support development in other ways, including contributing to lowering poverty, increasing primary education, empowering women, improving child health and providing the basis for global partnerships. The many barriers to realizing this potential, such as the current high cost of HPV vaccine, weakness of existing cervical screening and adolescent health systems, and low levels of knowledge about HPV, now are being challenged. With sufficient political will and resources, these barriers surely can be overcome in the interest of the family and the MDGs.

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Résumé
Prévention du cancer du col utérin et objectifs du Millénaire pour le développement

L’avènement de nouvelles technologies, comme le vaccin contre le papillomavirus humain (HPV) et les tests ADN pour ce virus, ainsi que les nouvelles perspectives d’utilisation de technologies peu onéreuses, telles que l’examen visuel du col et le traitement des lésions cervicales par cryothérapie, amènent à être plus optimiste quant aux possibilités de lutter efficacement contre ce cancer dans les pays à faibles ressources. Néanmoins, il importe aussi de se demander comment les nouvelles initiatives sanitaires contribuent ou ne contribuent pas aux entreprises mondiales majeures comme la réalisation des objectifs du Millénaire pour le développement (OMD).

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Résumé
Prévention del cancer cervicouterino y Objetivos de Desarrollo del Milenio

El desarrollo de nuevas tecnologías como la vacuna contra el papilomavirus humano (PVH) y las pruebas de ADN del PVH, unido a los nuevos conocimientos sobre el uso apropiado de tecnologías de bajo costo como la inspección visual del cuello uterino y el tratamiento de las lesiones cervicouterinas mediante crioterapia, han generado un mayor optimismo respecto a las posibilidades de combatir eficazmente esa enfermedad en los entornos con pocos recursos. No obstante, es importante también determinar los mecanismos por los que las nuevas iniciativas sanitarias podrán contribuir o no al éxito de importantes proyectos mundiales, como por ejemplo los Objetivos de Desarrollo del Milenio (ODM).

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Correspondence to Stephen Peckham (e-mail: stephen.peckham@lshtm.ac.uk).

anxiety and distress. can be costly in terms of public spending but also in personal infrastructure and so the opportunity costs of such a programme are not provided in a systematic and comprehensive analysis of the HPV virus as well as other STIs. However, in many circumstances it is not always possible for women to negotiate the use of the condom, especially within marriage. Of particular interest, therefore, are current studies being undertaken in Nairobi and Zimbabwe to examine the use of the diaphragm as a tool to prevent the transmission of not only HPV, but also HIV and other STIs. The advantage of the diaphragm for women is that her partner is not necessarily aware that she is using the device, which can be cleaned and reused.

While of obvious benefit and importance, cervical cancer screening programmes and HPV vaccination are not in themselves totally effective strategies. Screening may detect early (or more advanced) lesions but this is not without problems. Likewise, a population vaccination programme for HPV also raises questions that have, so far, not been answered satisfactorily. Primary prevention through education and promotion of safe sexual practices must, therefore, remain a key plank of any programme aimed at reducing cervical cancer deaths in the long term and substantially contributing to the MDGs.

The recently developed HPV vaccine offers some hope in reducing the levels of cervical cancer but concerns have been expressed about its efficacy and the usefulness of vaccination programmes – particularly with regard to long-term effects and that it only protects against 4 out of the 200 HPV viruses. Key questions need to be asked about how vaccination is offered and to whom. It is only effective in women if given before commencing (heterosexual) sexual activity and herd immunity will only be achieved if both young men and women are vaccinated. Vaccination programme effectiveness would also need to be based on known rates of HPV infection as cervical cancer can also be caused by strains other than those for which the vaccine provides protection. Studies in the United States of America suggest that the incidence for types 16 and 18 is significantly lower than previously thought, that infection rates vary by age and most HPV infections are asymptomatic.

This is an important point when considering the primary prevention of cervical cancer and HPV infection. Cervical cancer is usually a sexually transmitted disease, yet as many as two-thirds of women who are infected with the HPV virus will not develop cervical cancer. Primary prevention strategies providing factual information regarding transmission of sexually transmitted infection (STI) and the teaching of safer sex negotiation skills are potentially highly effective at a relatively low cost. Condom use has been shown to help prevent the transmission of the HPV virus as well as other STIs. However, in many circumstances it is not always possible for women to negotiate the use of the condom, especially within marriage. Of particular interest, therefore, are current studies being undertaken in Nairobi and Zimbabwe to examine the use of the diaphragm as a tool to prevent the transmission of not only HPV, but also HIV and other STIs. The advantage of the diaphragm for women is that her partner is not necessarily aware that she is using the device, which can be cleaned and reused.

While of obvious benefit and importance, cervical cancer screening programmes and HPV vaccination are not in themselves totally effective strategies. Screening may detect early (or more advanced) lesions but this is not without problems. Likewise, a population vaccination programme for HPV also raises questions that have, so far, not been answered satisfactorily. Primary prevention through education and promotion of safe sexual practices must, therefore, remain a key plank of any programme aimed at reducing cervical cancer deaths in the long term and substantially contributing to the MDGs.

References

Round table discussion

A sexual health priority

Wittet and Tsu are right to point to the link between cervical cancer deaths and achieving the MDGs and the inequity in the burden of cervical cancer between developed and developing countries. Any programme that reduces cervical cancer incidence and mortality rates in low-income and lower middle-income countries is clearly to be welcomed. Addressing women’s welfare, family education and thus poverty through screening, treatment and prevention will play an important role in tackling inequalities, although access to screening and vaccination is likely to be inequitable if programmes are not provided in a systematic and comprehensive way. We would argue, though, that cervical cancer screening and HPV vaccination should be seen as integral parts of, rather than separate from or instead of, a wider sexual health promotion programme.

Cervical cancer prevention can be viewed in a similar way to any other sexually transmitted infection. Screening women for cervical cancer is clearly important but a comprehensive and universal screening programme requires substantial resources and infrastructure and so the opportunity costs of such a programme need to be carefully considered. All cancer screening programmes result in unnecessary intervention or lack of intervention due to the sensitivity and specificity of tests that can be costly in terms of public spending but also in personal anxiety and distress. 1–3 As Wittet and Tsu report, however, new “see and treat” programmes will make an important contribution to cervical cancer treatment.

References

Scott Wittet & Vivien Tsu

London School of Hygiene and Tropical Medicine, Keppel Street, London, England.

School of Health Science, University of Wales, Swansea, Carmarthen, Wales.

Correspondence to Stephen Peckham (e-mail: stephen.peckham@lshtm.ac.uk).
Cervical cancer prevention and the Millennium Development Goals
Jacques Milliez

Cervical cancer, a complication of HPV infection, is the second most common cancer in women, with 500,000 new cases each year worldwide, 80% of which occur in low-resource countries in Africa, Latin America and south-east Asia. More than half of women with cervical cancer will die, with deaths projected to rise by almost 25% over the next 10 years according to WHO. In Europe and the United States of America, a woman has a 70% chance of surviving cervical cancer whereas the chance of survival is only 58% in Thailand, 42% in India, and 21% in sub-Saharan Africa. In low-resource countries, only 41% of women with cervical cancer have access to appropriate treatment. Now that immunization against HPV is available, will it meet its expectations?

In medically advanced countries, about 30–40% of women do not comply with available cervical cancer screening. Whether these women will encourage their teenage daughters to have the HPV vaccine is questionable and depends strongly on health insurance coverage. In addition, immunization against the carcinogenic HPV strains 16 and 18 only prevents 70% of cervical cancers. Therefore, it does not exempt women from further regular cervical screening when also considering that the duration and optimal protection of the initial immunization is unknown and that boys are not yet included in the immunization programme.

References

In low-resource countries where cervical cancer screening programmes and treatments are scarce or absent, HPV vaccine raises considerable expectations, but just as many objections. HPV subtypes vary between regions in the world and the strains targeted by the currently marketed vaccines may not prevail in low-resource countries where no extensive epidemiologic study of HPV-typing has been conducted. A full immunization procedure, three shots over six months, is expected to cost US$ 360. Such a cost is unaffordable for the one billion individuals living on less than US$ 1 per day, unless the vaccine is distributed by state-subsidized programmes. Health authorities in low-resource countries, already overwhelmed with public health demands, will have to set priorities when allocating limited resources. The same painful choices are now imposed on international agencies and private foundations with the advent of the HPV vaccine, which puts an additional burden on their available funding. Equity requires dividing the means according to the needs, provided a hierarchy can be established among those needs. Given the HIV epidemic, the devastation caused by malaria or tuberculosis, maternal mortality that is responsible for twice as many women’s deaths as cervical cancer, and the four million infants dying each year of avoidable disease, it is likely that the HPV vaccine will be given a low priority. Furthermore, considering that famine is endemic in at least 37 countries, urgent wheat, rice and miller provision competes with the supply of vital drugs. The World Trade Organization and WHO compete in spreading their endeavours with shrinking funds. If the Monterrey consensus (which was the outcome of the United Nations International Conference on Financing for Development in 2002) pledged that urged developed countries to divert 0.7% of gross national product to worse-off populations is not fulfilled, it is very likely that the 2015 MDGs will fail away, regrettably cervical cancer prevention above all.

4. Saint Antoine Hospital, Paris VI University, Paris, France. Correspondence to J Milliez (e-mail: j.milliez@ssat.aphp.fr).