

## Will cancer vaccine get to all women?

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DEATHS from cervical cancer could jump fourfold to a million a year by 2050, mainly in developing countries. This could be prevented by soon-to-be-approved vaccines against the virus that causes most cases of cervical cancer - but there are signs that opposition to the vaccines might lead to many preventable deaths.

The trouble is that the **human papilloma virus (HPV)** is sexually transmitted. So to prevent infection, girls will have to be vaccinated before they become sexually active, which could be a problem in many countries.

In the US, for instance, religious groups are gearing up to oppose vaccination, despite a survey showing 80 per cent of parents favour vaccinating their daughters. "Abstinence is the best way to prevent HPV," says Bridget Maher of the Family Research Council, a leading Christian lobby group that has made much of the fact that, because it can spread by skin contact, condoms are not as effective against HPV as they are against other viruses such as HIV.

"Giving the HPV vaccine to young women could be potentially harmful, because they may see it as a licence to engage in premarital sex," Maher claims, though it is arguable how many young women have even heard of the virus.

Meanwhile in developing countries, where 80 per cent of deaths from cervical cancer occur, social taboos may be even more powerful. The head of the Indian Council of Medical Research, N. K. Ganguly, says it will take a big educational effort to convince parents. Vaccinating men could be the best way to prevent the spread of HPV among women.

HPV is extremely common. Half of all sexually active women between 18 and 22 in the US are infected. Most cases clear up, but sometimes infection persists and can cause cancer decades later.

Deaths in the west have plummeted thanks to widespread screening to detect cancers early. But such screening is not widely available in developing countries. In many, populations are ageing: in India the number of women over 60 is projected to rise from 40 million now to 168 million in 2050. The International Agency for Research on Cancer in Lyon, France, calculates that by then deaths from cervical cancer will reach a million a year in poor countries if rates of infection, and of cancer detection and treatment, do not improve.

While vaccination could slash infection rates, its cancer-preventing benefits will not be evident for decades, as it will take that long for vaccinated girls to reach an age when they might otherwise have developed cancer. Meanwhile, millions of women who are already infected must be screened and treated. If there is widespread resistance to vaccination, it will take even longer for its benefits to become clear.

Vaccines are producing good results in clinical trials, and the first could be licensed as early as next year. GlaxoSmithKline announced in November 2004 that its vaccine, which contains two strains of HPV thought to cause 70 per cent of cervical cancers, had prevented 90 per cent of new infections and all persistent infections. The US-based firm Merck announced similar results last week with its vaccine, which contains the same two cancer-causing HPV strains plus two strains that cause genital warts.

["Vaccinating men could be the best way to prevent the spread of the cancer-causing virus among women"](#)

Merck's official reason for including the warts strains is that they can confuse screening tests, leading to unnecessary scares. But another reason, says Anne Szarewski of the charity Cancer Research UK, who is helping to organise one of the vaccine trials, is that men who get vaccinated to prevent disfiguring warts will no longer transmit the cancer-causing strains to women. That might be the key to getting vaccines accepted in cultures where trying to prevent sexually transmitted infections is equated with promiscuity.

"We found that some Asian women in Britain are afraid even to get tested for HPV infection, because they say if it is positive they will be killed, never mind that their husbands probably gave it to them," says Szarewski. She feels that such attitudes may mean that HPV vaccination may be a non-starter in such communities.

Greg Zimet of Indiana University in Indianapolis is more optimistic. His surveys in the US show parents overwhelmingly favour getting their daughters vaccinated. "Doctors tend to fear the worst," he says.

But some problems have already surfaced. India is planning to do its own clinical trials, but will not test the vaccine in young girls. "This is not possible until around the age of marriage in India," Ganguly says.

Once licensed, the vaccine should be given to younger girls, he says. "But people will say 'My girl is very virtuous, why vaccinate?' It will be a real challenge, not like other vaccines."

Last but not least is the cost. Ganguly is trying to arrange for an HPV vaccine to be produced cheaply in India. But there are fears India's new patent laws will make licensing deals difficult.

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