



Beyond Our Borders

Cervical cancer in the developing world

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Cervical cancer is the third most common cancer worldwide, and 80% of cases occur in the developing world. It is the leading cause of death from cancer among women in developing countries, where it causes about 190,000 deaths each year.¹ Rates of the disease are highest in Central America, sub-Saharan Africa, and Melanesia (M Parkin, International Agency for Research on Cancer, personal communication, July 2000).

Unlike many cancers, cervical cancer can be prevented. Primary prevention of cervical cancer through preventing human papillomavirus (HPV) infection, a sexually transmitted agent that causes cervical cancer, will contribute to reducing cancer mortality. Primary prevention of HPV infection is more challenging than prevention of most other sexually transmitted infections. HPV-infected women generally are asymptomatic, HPV is transmitted easily, and no therapies eliminate the underlying infection. The development of a vaccine against HPV is under investigation, but vaccination as a means of primary prevention is years away. Secondary prevention involves using relatively cheap screening and treatment technologies that can detect dysplasia before it progresses to invasive cancer.

WHY IS THE DISEASE COMMON IN THE DEVELOPING WORLD?

A lack of effective screening programs aimed at detecting and treating precancerous conditions is a key reason for the much higher cervical cancer incidence in developing countries. It has been estimated that only about 5% of women in developing countries have been screened for cervical dysplasia in the past 5 years, compared with 40% to 50% of women in developed countries.²

In a recent study, more than 99% of cases of cervical cancer worldwide were estimated

to contain HPV DNA. The virus infects the cells of the cervix and slowly causes precancerous cellular changes (dysplasia) that can progress. [Please see this article on our web site (www.ewjm.com) for a chart detailing the management implications of these dysplastic changes.] These cellular changes can be relatively mild and often do not progress or may regress.³ Larger, deeper lesions (severe dysplasia) are more likely to progress to cancer.^{4,5} Women generally are infected with HPV in their teens, 20s, or 30s; it can take as long as 20 years after HPV infection for the cancer to develop. Cervical cancer starts with an in situ stage that can be treated, but it then progresses to invasive disease that is always fatal in countries where appropriate surgery and radiotherapy are unavailable.

PITFALLS IN THE TRADITIONAL APPROACH TO PREVENTION

Cervical cancer prevention efforts worldwide have focused on screening women at risk of the disease using Papanicolaou (Pap) smears and treating precancerous lesions. Where screening quality and coverage have been high, these efforts have reduced the incidence of invasive cervical cancer by as much as 90%.⁶

Most developing countries, however, have been unable to implement comprehensive Pap smear screening-based programs. In countries where Pap smear screening is available, it often is accessible to only a small proportion of women through private health care providers, or it is offered primarily to young women through maternal or child health clinics or family planning clinics where the population being screened generally is not at high risk.⁷ These approaches have had little effect on morbidity and mortality and generally are not as cost-effective as centrally organized screening programs implemented by the public sector.⁸

Although screening efforts based on Pap smears have been introduced in several developing countries, many have achieved only limited success, for a number of reasons, including limited cytologic services and lack of follow-up diagnostic and treatment services.⁹

In most countries, the development of systems to ensure access to high-quality cytologic services is a challenge. In Mexico, for example, the low quality of cytologic services has been a major barrier to reducing cervical cancer rates. A study of 13 cytology centers found a range of problems from poor-quality services to inadequately trained technicians, and the false-negative rate for Pap smears in these centers was as high as 54%.¹⁰ In Colombia's cervical cancer prevention program, a shortage of cytology technicians has been a key barrier to achieving screening goals.¹¹

Efforts to improve the quality of Pap smears and screening approaches are ongoing. [Please see this article on our web site (www.ewjm.com) for links to additional information and resources.]

HOW SHOULD PRECANCEROUS CERVICAL LESIONS BE TREATED IN RESOURCE-POOR COUNTRIES?

Any screening program must be accompanied by adequate treatment options. In many countries, treatment options are limited. Preinvasive cervical lesions often are treated with aggressive approaches such as cone biopsy or hysterectomy rather than with more appropriate outpatient approaches. Although appropriate for certain circumstances, inpatient approaches are expensive and often result in the overtreatment of women. In addition, they can result in serious complications and side effects and require substantial resources for anesthesia, equipment, and inpatient care.

Relatively simple outpatient procedures should be used to destroy or remove precancerous tissue. A common outpatient ablation (destruction) method is cryotherapy. Another outpatient excisional method is loop electro-surgical excision procedure (LEEP). Although LEEP involves more equipment and supplies, it removes diseased tissue and provides a tissue specimen for analysis, reducing the possibility of overlooking invasive cancer. A 1998 study comparing cryotherapy, LEEP,



Community health educators at work in Uganda: education is vital in preventing HPV infection and subsequent cervical cancer

and laser vaporization found the 3 methods to be equally safe and effective.¹²

INCREASING WOMEN'S AWARENESS

A key challenge for cancer programs is encouraging women at highest risk for treatable, precancerous lesions—often women in their 30s and 40s—to seek preventive services. Because many women in this age group have completed childbearing and, therefore, are not likely to access family planning or maternal health services, special approaches are required to inform them of the need for and availability of screening. The best approaches for increasing awareness among women who are past their reproductive years will vary from place to place and should be developed with input from women themselves. Possible approaches include reaching women through local women's or community groups; linking screening to an important event in an older woman's life, such as becoming a grandmother; or linking screening to other midlife health needs, such as contraceptive sterilization.

In many regions, the risk of cervical cancer developing is amplified by poverty and isolation. In Colombia, strategies such as special "cytology days" in shantytowns have been initiated using radio, megaphones, and church calls to encourage hard-to-reach women to attend.¹¹

Overall, it is essential to ensure good qual-

ity of care at screening sites, treating women with respect and paying attention to their concerns. Program experience from many countries has demonstrated that women will not attend preventive care services if they believe that they will be treated poorly.

INCREASING PROVIDER KNOWLEDGE AND SKILLS

Program success depends on assisting providers in adopting a public health-oriented approach to screening and treatment and training them in the skills needed to counsel clients and provide high-quality services that respect women's concerns and needs. In many settings, it is important to ensure that nonphysicians can effectively provide screening services so that screening coverage can be maximized.

Experience from cervical cancer control efforts worldwide suggests that some policies in low-resource settings are inappropriate—for example, infrequent screening, screening of young women who are at low risk, or focusing treatment on advanced cancers. Widespread use of such practices prevents programs from achieving a substantial health impact by draining program resources. Both preservice and in-service provider training can address this issue by presenting clear information about the public health rationale for fre-

quent screening, focusing on broad coverage of older women in their 30s and 40s, and emphasizing the treatment of precancerous conditions.

Providers also need appropriate training in key clinical and counseling issues related to cervical cancer prevention, along with ongoing supervisory support and assistance in establishing and maintaining referral links. Particularly important is ensuring the quality of screening programs. If Pap smears are used, for example, the smear must be properly collected, stored, and transported to a cytologic laboratory, and results must be accurately interpreted and provided to clients within a reasonable time. If visual screening approaches are used, providers must be trained to identify abnormal tissue and know what action to take; sufficient practice with a trainer present is crucial to this process.

Appropriate counseling also is critical. Providers must be trained to establish a respectful rapport with women and address their fears and concerns; only then will women get the information they need and feel comfortable returning for required follow-up visits.

MONITORING AND EVALUATION

Monitoring and evaluating a prevention program's operations and effectiveness help determine whether the program is meeting its objectives effectively and efficiently. The results of program monitoring and evaluation can be used to ensure appropriate delivery of services, assess coverage, and correct problems in program operations. Positive

evaluation results also can be used to mobilize continued financial and political support for the program.

Client records are key to effective program monitoring. Records should allow programs to observe individual women over time, and they should include the women's screening results, diagnostic referrals, and treatment outcomes. For example, a basic health card system could include a woman's identifying information, date of each screening test, the results, and any diagnostic or treatment details. Ideally, information from client records should be linked to regional or national databases to allow the aggregation of key health data.

CONCLUSIONS

The demand for programs to combat cervical cancer is strong. All over the developing world, women's health providers regularly see women with advanced, incurable cervical cancer. Although many countries have expended their scarce resources on providing surgical and radiotherapy services to a small proportion of these women, they can do little for most cancer patients but provide palliative care.

Suitable goals of a cervical cancer program in resource-poor countries and the key activities needed for achieving these goals are outlined in the boxes. Through creative service delivery strategies and well-trained, dedicated staff, cervical cancer prevention programs can address the challenges of providing appropriate screening and treatment and ultimately have a lasting effect on women's health.

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Asking patients about guns

On the *wjm* web site, we asked readers, "Should physicians routinely ask patients about guns as a health screening measure?"

Thirteen readers said that we should, arguing that this question was part of preventive health screening. A respondent from Texas wrote, "I think we haven't been doing enough intervention regarding guns and violence prevention." One from Canada suggested that we should first assess patients' willingness to discuss guns: "They [physicians] should say, 'we know that firearms in the house increase the risk of household members dying from gunshot wounds. Would you be willing to talk with me about whether or not you have firearms in your household?'"

Six physicians said that we should not, because this question infringes patient privacy. "Gun ownership, gun rights, hunting, collecting, and self defense are outside the scope of medical training, ethics, and responsibility," one respondent wrote. Another argued, "You might as well have physicians ask what car a patient drives or what clothes they typically wear—it is irrelevant to health. Even if the physician is aware of their patients' relationship (if any) to guns, he or she would be unqualified to offer advice on that patient's decisions."