

Cervical Cancer Prevention

FACT SHEET



Natural History of Cervical Cancer: Even Infrequent Screening of Older Women Saves Lives

According to the most recent data, an estimated 466,000 new cases of cervical cancer occur among women worldwide each year, the vast majority of them in developing countries. Of the 231,000 women who die of cervical cancer annually, approximately 80 percent are from developing countries, where cervical cancer is the most common cause of cancer deaths among women.¹ Cervical cancer screening is a cost-effective way to save lives. A 1993 World Bank study found that screening women every five years with standard follow-up for identified cases costs about \$100 per disability-adjusted life year (DALY) gained, compared with about \$2,600 per DALY for treatment of invasive cancer and palliative care.² In order to ensure that cervical cancer prevention interventions save women's lives,

programs must be based upon a clear understanding of the natural history of cervical cancer.

HPV is the primary cause of cervical cancer

- Human papillomavirus (HPV), a common sexually transmitted infection, is the primary underlying cause of cervical cancer.³
- Preventing HPV transmission is very difficult. Barrier contraceptive methods are only partially effective because the virus can exist throughout most of the anogenital area (including areas not covered by male condoms) and can remain infectious for years.⁴
- Although HPV cannot be treated, in the majority of cases, the infection becomes undetectable. In a small percent of women, however, HPV

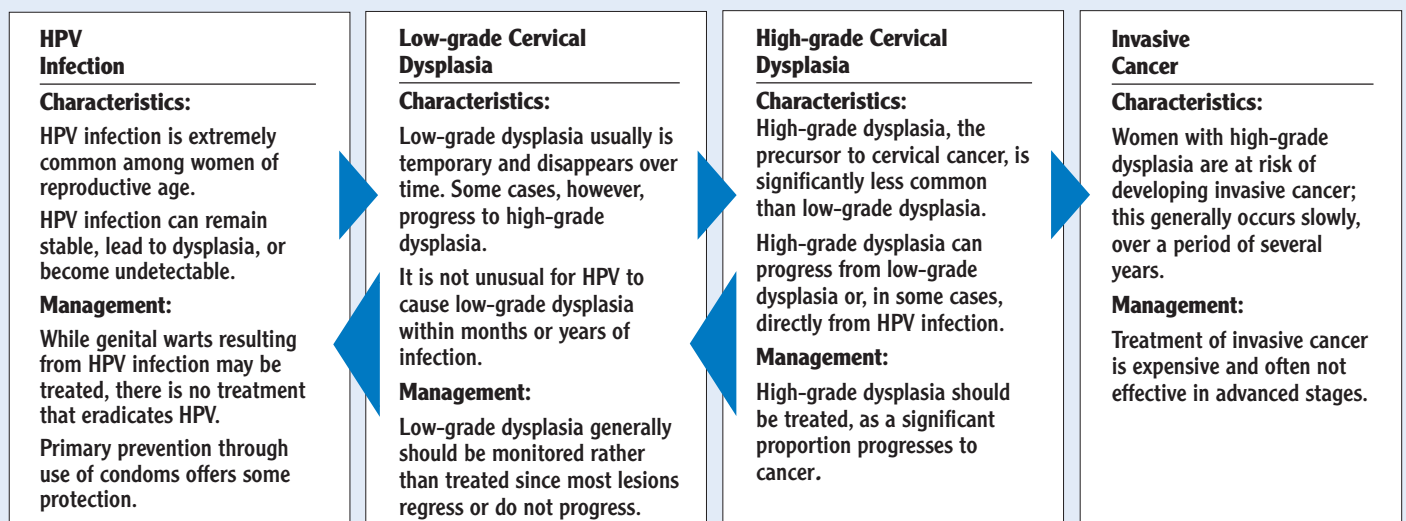
infection persists and leads to precancerous lesions, called dysplasia. Immunocompromised women may be at particularly high risk of persistent infection.⁵

- Detectable HPV infection is most common in younger women. Although prevalence varies among regions, it generally reaches a peak of about 20 percent among women aged 20 to 24, with a subsequent decline to approximately 8 to 10 percent among women over age 30.⁶

Cervical cancer generally takes many years to develop; older women are at greatest risk and in need of screening

- Of the small percent of women whose HPV infection develops into dysplasia, the majority likely will develop only mild dysplasia, which usually regresses or does not

Natural History of Cervical Cancer and Program Implications



Screening strategies are intended to identify abnormalities in these ranges.

progress, particularly among women under age 35. Few women who develop dysplasia will progress to cervical cancer.

- Progression to detectable, precancerous lesions can take as long as 10 years. One study estimates that the risk of progression from moderate to severe precancerous lesions is 32 percent within 10 years.⁷
- Women aged 35 or older with identified moderate or severe precancerous lesions are at high risk for developing cancer.
- Cervical cancer most often develops in women after age 40 and is most frequent among women in their fifties and sixties.^{8,9,10}
- Tobacco use, young age at first birth, use of oral contraceptives, and the hormonal and physical implications of high parity appear to independently increase a woman's risk of cervical cancer.⁹
- Clinical impressions of increasing cervical cancer rates among younger women may reflect a

population's age structure or screening patterns rather than a shift in age-specific rates.¹¹

Even infrequent screening can be effective

- Infrequent screening and associated follow-up of women in their thirties or older is an acceptable, cost-effective approach to preventing cervical cancer, assuming that the screening approach is effective, coverage is high, and there is a reliable link to treatment.^{12,13}
- Women with at least one previous negative cervical smear have low rates of invasive cancer for ten or more years.¹⁴
- Modeling of data from South Africa suggests that even screening women just once in their lives, at age 35 could reduce cervical cancer mortality by 26 percent.¹³

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"In countries where resources are limited, the aim should be to screen every woman in the target group once in her lifetime at about the age of 40 years. When resources are available the frequency of screening should be increased to once every 10 years, and then once every 5 years for women aged 35-55 years. If resources are high and a large proportion of the target group are being screened, screening should be extended, first to older women (up to age 60) and then to younger women (down to age of 25). If additional resources are available and a high proportion of the target group are being screened every 5 years, the frequency of screening should then be increased to once every 3 years for women aged 25-60 years."

—World Health Organization, 1992⁹

Table 1: Potential Reduction in Cumulative Cervical Cancer Rates With Different Frequencies of Screening

Frequency of Screening	Percent Reduction in Cumulative Rate*†
every year	90-93
every 2 years	86-91
every 3 years	75-88
5 times per lifetime	61-74
3 times per lifetime	35-55
2 times per lifetime	29-42
1 time per lifetime	17-32

Adapted from: Goldie SJ, et al. 2001.¹³

* Ranges apply to strategies that include 1-visit VIA, 2-visit HPV testing, and 3-visit Pap smear.

† Reductions assume the sensitivities and specificities reported from the best available data, screening coverage ranges from 75 to 100%, and 15% loss to follow-up with each additional visit required for screening.

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