

Cervical Cancer: An Overview With Suggested Practice and Policy Goals

Sarah F. Wells

Last year, the American Cancer Society predicted 11,150 cases of invasive cervical cancer would be diagnosed and 3,670 women in the United States would die from the disease (American Cancer Society [ACS], 2006b). While the incidence of cervical cancer in the United States has decreased significantly in the last 50 years, primarily due to effective screening programs, many women still suffer and die unnecessarily. However, the past couple of years have marked a turning point in the fight against cervical cancer. The availability of a test for the human papillomavirus (HPV), the cause of virtually all cases of cervical cancer, and development of an HPV vaccine bring powerful new

prevention tools to this fight. Cervical cancer is not only in the public eye but at the top of public policy agendas as well, as legislators and public health officials develop strategies to ensure widespread access to these technologies. At the same time, an increasing awareness of cervical cancer and HPV has given new urgency to education and outreach efforts to inform women about prevention options. Public health attention also has turned to the developing world, where cervical cancer remains a leading cancer killer among women of reproductive age and where access to advanced preventive technologies in cervical cancer screening and vaccination is limited.

Federal and state governments and public health agencies play a key role in the prevention of cervical cancer. At the federal level, the government funds public health programs such as the National Breast and Cervical Cancer Early Detection Program, and administers Medicaid and Medicare. It also has authority over the Food and Drug Administration, which reviews and approves new medicines, vaccines, and technologies. States also play a tremendous role in preventing this disease, including (but not limited to) the administration of federal programs such as local health departments, determining specific coverage issues under Medicaid, and educating the pub-

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prevented, detected early, and cured or is managed successfully as a chronic illness. The mission of C-Change is to leverage the combined expertise and resources of its members to eliminate cancer as a (major) public health problem at the earliest possible time. C-Change is both a forum and a catalyst for identifying issues and major challenges facing the cancer community and for initiating collaborative actions to complement the efforts of individual C-Change members. Medical-Surgical nurses are invited to learn more about this important organization by visiting www.c-change.together.org



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lic about disease prevention through school systems, clinics, and other outreach. Policymakers and the public health community are stakeholders in this issue, ensuring that laws address new opportunities for prevention and that programs and services adequately meet their constituent's needs.

Women In Government, a Washington, DC,-based nonprofit organization with a 20-year history of successful health care policy programming for women state legislators, initiated the *Challenge to Eliminate Cervical Cancer Campaign* in 2004. Since the launch of the *Campaign*, all 50 states have introduced and/or enacted legislation to further prevention efforts; in some states, multiple bills have been enacted.

Furthermore, Women In Government developed an annual state-by-state comparison report evaluating progress in preventing this disease. "Turning Challenges Into Opportunities," the fourth edition released in January 2008 (see Figure 1), charts the dramatic changes that have occurred and highlights areas where increased or sustained efforts still are required to meet the goal of eliminating this disease. This year's report was reviewed by members of the legislative, advocacy, medical, and public health communities, and illustrates the many ways that individuals across public and private sectors are working collaboratively to fight cervical cancer (Women In Government, 2008).

The Burden of HPV and Cervical Cancer

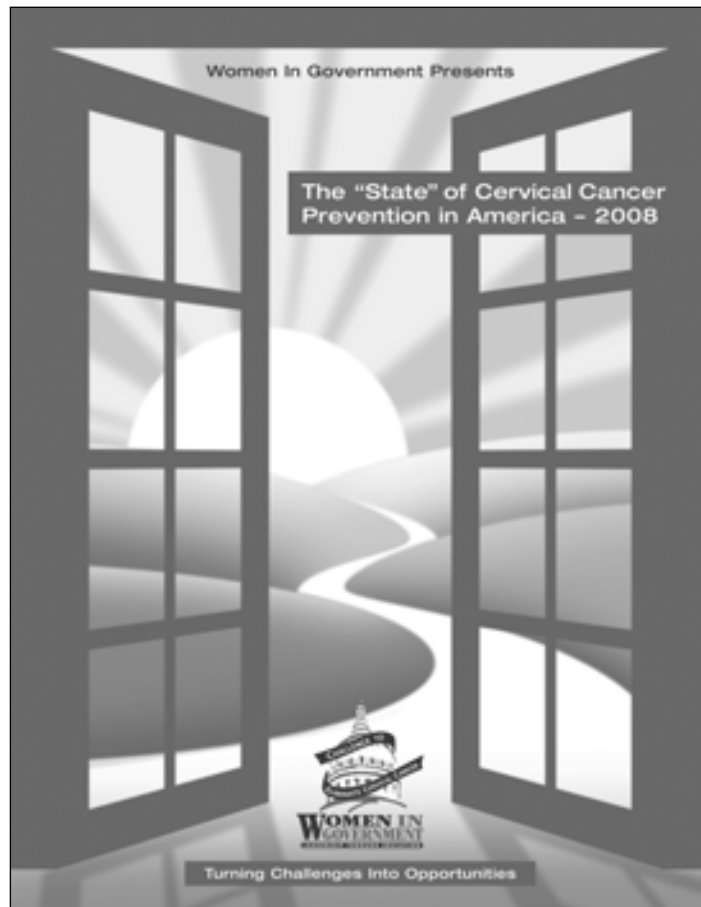
In case there was any doubt of the prevalent nature of HPV, 2007 brought the striking news that more than one-third of American women are infected with HPV by the age of 24. A broad-based survey by the federal government found that some 7.5 million girls and women between the ages of 14

and 24 are infected with HPV — almost two-thirds more than an earlier study had estimated (Brown, 2007). At the same time, continued emphasis on the importance of screening for cervical cancer has helped drive down incidence and mortality rates. Cervical cancer incidence for 2003, the most recent data available for the report, was 8.1 cases per 100,000 women, down from 8.7 cases in 2002 and continuing a long-term decline in the rates of cervical cancer (State Cancer Profiles, 2007b). The mortality rate for 2004, the most recent data avail-

able, was also in line with an historic downward trend at 2.4 deaths per 100,000 women, reduced from 2.5 deaths in 2003 (State Cancer Profiles, 2007a).

In the United States, cervical cancer remains a disease of socioeconomic disparity, with Hispanic and African-American women more likely to be diagnosed with the disease and more likely to die of it than white women (ACS, 2006b). A landmark study by the National Cancer Institute found that high rates of cervical cancer mortality are indicative of barriers to health

Figure 1.
Turning Challenges Into Opportunities:
The 'State' of Cervical Cancer Prevention in America 2008



Note: To access the 2008 Report, including detailed information on all 50 states, please visit Women In Government's Web site at: <http://www.womeningovernment.org/prevention/statereport> or request a copy by calling (888) 333-0164.

Table 1.
Cervical Cancer Screening Guidelines

	American Cancer Society ¹ (ACS, Nov 2002)	U. S. Preventive Services Task Force ² (USPSTF, Jan 2003)	American College of Obstetricians and Gynecologists ³ (ACOG, Aug 2003)
When to start	Approximately 3 years after onset of vaginal intercourse, but no later than age 21	Within 3 years of onset of sexual activity or age 21, whichever comes first	Approximately 3 years after onset of sexual intercourse, but no later than age 21
Intervals			
Conventional Pap test	Annually; every 2-3 years for women ≥ 30 with 3 negative cytology tests*	At least every 3 years	Annually; every 2-3 years for women ≥ 30 with 3 negative cytology tests*
If liquid-based cytology used**	Every 2 years; every 2-3 years for women ≥ 30 with 3 negative cytology tests*	Insufficient evidence	Annually; every 2-3 years for women ≥ 30 with 3 negative cytology tests*
If HPV testing used**	Every 3 years if HPV negative, cytology negative	Insufficient evidence	Every 3 years if HPV negative, cytology negative
When to stop	Women ≥ 70 years with ≥ 3 recent, consecutive negative tests & no abnormal tests in prior 10 years*	Women > 65 years with negative tests, who are not otherwise at high risk for cervical cancer	Inconclusive evidence to establish upper age limit
Post total hysterectomy	Discontinue if for benign reasons & no prior history of high-grade CIN*	Discontinue if for benign reasons	Discontinue if for benign reasons & no prior history of high-grade CIN*

*Some exceptions apply (e.g., women who are immunocompromised, have a history of prenatal exposure to DES, etc.). See guidelines for details.

** See Table 2 (entitled "Recommendations for Liquid-Based Cytology and HPV Testing") for recommended use.

¹ Saslow D, et al. American Cancer Society Guideline for the Early Detection of Cervical Neoplasia and Cancer. *CA Cancer J Clin* 2002; 52: 342-362. Available at: <http://online.amcancer.org/cgi/content/full/52/6/342>

² USPSTF. Screening for Cervical Cancer. Jan 2003. Available at: <http://www.ahrq.gov/clinic/uspstf/uspscerv.htm>

³ ACOG. Cervical Cytology Screening. ACOG Practice Bulletin No. 45. ACOG 2003;102: 417-427. See also: http://www.acog.org/from_home/publications/press_releases/hr07-31-03-1.cfm

Source: CDC, 2007.

care among certain subpopulations of poor and minority women, particularly African-American women in the South, Latina women along the Texas-Mexico border, white women in Appalachia, American Indians of the Northern Plains, Vietnamese-American, and Alaska Native women (Freeman & Wingrove, 2005).

On a global scale, cervical cancer is the second most common cancer among women, with close to 500,000 new cases annually. With some 275,000 deaths, this disease is the leading cause of cancer death among women in the developing world (Parkin & Bray, 2006).

Risk Factors

The human papillomavirus causes almost all cases of cervical cancer. It is a sexually transmitted virus that will be contracted by approximately 80% of adults at some point in their lives. However, an HPV infection does not lead to cervical cancer in most women because the cells in the cervix usually return to normal after the body's immune system fights off the HPV infection.

Women at highest risk for cervical cancer are those in whom a high-risk strain of HPV persists for years. Women who have not been screened regularly (or ever) put themselves at an additional in-

creased risk of being diagnosed with the disease. Smoking and HIV infection can increase the risk that cervical cancer will develop due to their effects on the immune system's ability to fight infection (ACS, 2006c).

Prevention and Early Detection: Screening

Several cervical cancer screening options exist: the traditional Pap test (also known as the Pap smear), the liquid-based Pap test, and the HPV test. Both the Pap test and the liquid-based Pap test look for abnormal cells from a sample of cells in the cervix. The HPV test checks directly for high-

Table 2.
Recommendations for Liquid-Based Cytology and HPV Testing

	American Society for Colposcopy and Cervical Pathology ¹	American Cancer Society ²	U. S. Preventive Services Task Force ³	American College of Obstetricians and Gynecologists ⁴	American Society for Colposcopy and Cervical Pathology, and American Cancer Society ⁵
	(ASCCP, Apr 2002)	(ACS, Nov 2002)	(USPSTF, Jan 2003)	(ACOG, Aug 2003)	(ASCCP & ACS, Feb 2004)
Liquid-based cytology	--	Option	Insufficient Evidence	Option	--
HPV testing					
Women with ASC-US (reflex testing)	Recommended*, Guidance Provided ¹	Option ⁶	Insufficient Evidence	Option	--
Women ≥30 years (adjunct to Pap test)	--	Option	Insufficient Evidence	Option	Recommended*, Guidance Provided ⁵

*Some exceptions apply [e.g., women who are immunosuppressed for any reason, including infection with human immunodeficiency virus (HIV)]

¹ Wright TC, et al. 2001 Consensus Guidelines for the Management of Women with Cervical cytological abnormalities. *JAMA* 2002; 287: 2120-2129. See also: <http://www.asccp.org/consensus.shtml>

² Saslow D, et al. American Cancer Society Guideline for the Early Detection of Cervical Neoplasia and Cancer. *CA Cancer J Clin* 2002; 52: 342-362. Available at: <http://caonline.amcancersoc.org/cgi/content/full/52/6/342>

³ USPSTF. Screening for Cervical Cancer. Jan 2003. Available at: <http://www.ahrq.gov/clinic/uspstf/uspstfcerv.htm>

⁴ ACOG. Cervical Cytology Screening. ACOG Practice Bulletin No. 45. ACOG 2003; 102: 417-427. See also: http://www.acog.org/ncom_home/publications/press_releases/md7-31-03-1.cfm

⁵ Wright TC, et al. Interim Guidance for the Use of Human Papillomavirus DNA Testing as an Adjunct to Cervical cytology for screening. *Obstet Gynecol*. 2004; 103: 304-309.

⁶ ACS. Patient Pages: Early Detection of Cervical Cancer. *CA Cancer J Clin*, 2002; 52: 375 - 376. See also: <http://caonline.amcancersoc.org/cgi/content/full/52/6/375>

Source: CDC, 2007.

risk strains of HPV. Combining the Pap test and HPV test is more accurate than the Pap test alone for identifying women with cervical cancer or its early signs (Mayrand et al., 2007). Women under 30, however, should not get the HPV test unless they receive abnormal Pap test results (ACS, 2006a) (see Tables 1 & 2).

Prevention: Vaccines

The quadrivalent HPV vaccine is currently available to the public and has shown to be 100% effective at preventing cervical cancer from certain high-risk strains of HPV, which together account for

approximately 70% of all cervical cancers (Food and Drug Administration [FDA], 2006). This vaccine also targets the two HPV strains that cause approximately 90% of genital warts (Greer et al., 1995). A second bivalent HPV vaccine, still under review with the FDA as of January 13, 2008, has been shown in clinical trials to be equally effective against HPV types 16 and 18 (Harper et al., 2004). Both vaccines are preventive and are not intended for therapeutic use.

To be most effective, HPV vaccines should be given before a woman becomes sexually active.

The FDA approved the quadrivalent vaccine for girls and women aged 9-26. The federal Advisory Committee on Immunization Practices recommended that the vaccine be given routinely to females ages 11-12 and as early as age 9, and that women ages 13-26 should be vaccinated if they have not already received the HPV vaccine (Morbidity and Mortality Weekly Report [MMWR], 2007).

HPV vaccines should be part of a comprehensive strategy to eliminate cervical cancer. Screening using advanced and appropriate technologies, such as Pap and HPV testing, continues to be need-

requirement (the DC measure requires final approval by Congress). However, stalled HPV vaccine requirements in many states were replaced with HPV education initiatives designed to inform girls and their parents about the relationship between HPV and cervical cancer and the availability of the HPV vaccine, greatly increasing public education efforts.

- *There has been an overall decline in the percentage of women receiving Pap tests as screening for cervical cancer.*

Forty-four states saw a drop in the number of women over age 18 who had a Pap test in the last 3 years. However, it is unclear if the decline is due to fewer women getting Pap tests, or more women taking advantage of longer screening intervals made possible by the HPV test and new screening recommendations for women over age 30. Cervical cancer screening measures will have to incorporate the HPV test in order to provide a more accurate picture of screening rates.

- *A total of 17 states introduced legislation requiring insurance coverage of the HPV vaccine and 5 states saw the measures become law.*

There was less emphasis in 2007 on insurance coverage for the HPV test. It is important to maintain efforts to increase access to advanced screening technologies as well as the HPV vaccine to ensure a comprehensive approach to cervical cancer prevention.

- *Health insurance coverage for women continues to decline.*

The number of states receiving a score of 0 in this category for having more than 20% of their female population age 18-64 uninsured increased from 11 to 14.

Only one state, Minnesota, had a rate of uninsured women below 10%. Relatively speaking, however, fewer states saw an increase in the number of uninsured women than in last year's report, in which half of states experienced an increase (see Figure 3).

Practice and Policy Goals for Cervical Cancer Prevention

Women In Government develops and updates annual recommendations to help guide stakeholders in the continued fight against cervical cancer, paying particular attention to gaps in current policy and the need to address public education and the availability of new technologies. Issues of disparity in cervical cancer incidence require interested parties to work together to level the playing field in terms of access to screening and preventive services, insurance coverage, and education. The goal of the *Campaign* is that all stakeholders, the medical and public health communities, elected officials, the public, survivors, and other interested persons will collaborate on a statewide basis to address this important issue (Women in Government, 2008).

Women In Government's 2007-08 recommendations were developed by a national, bipartisan HPV & Cervical Cancer State Legislative Task Force composed of women state legislators from across the country in collaboration with the medical and public health communities, and subsequently approved by the board of directors. The 2008 recommendations include:

- *Role of statewide accountable entities*

States should ensure that statewide cervical cancer task forces or other proactive accountable entities are informed about and address new information and data about cervical cancer/HPV, including opportunities to estab-

lish an adolescent "well visit." States should consider legislative action that may be required to update and extend the parameters of task force timelines and members.

- *Vaccines for Children (VFC) Program and other federal funds available to states*

States should maximize resources and direct dedicated funding streams to support program infrastructure and provide education to policymakers about VFC and 317 funding. State departments of health should develop and implement plans to ensure all girls and women ages 9-26 have access to and receive FDA-approved cervical cancer/HPV vaccines, with an emphasis on the routine vaccination of 11 and 12 year-old girls.

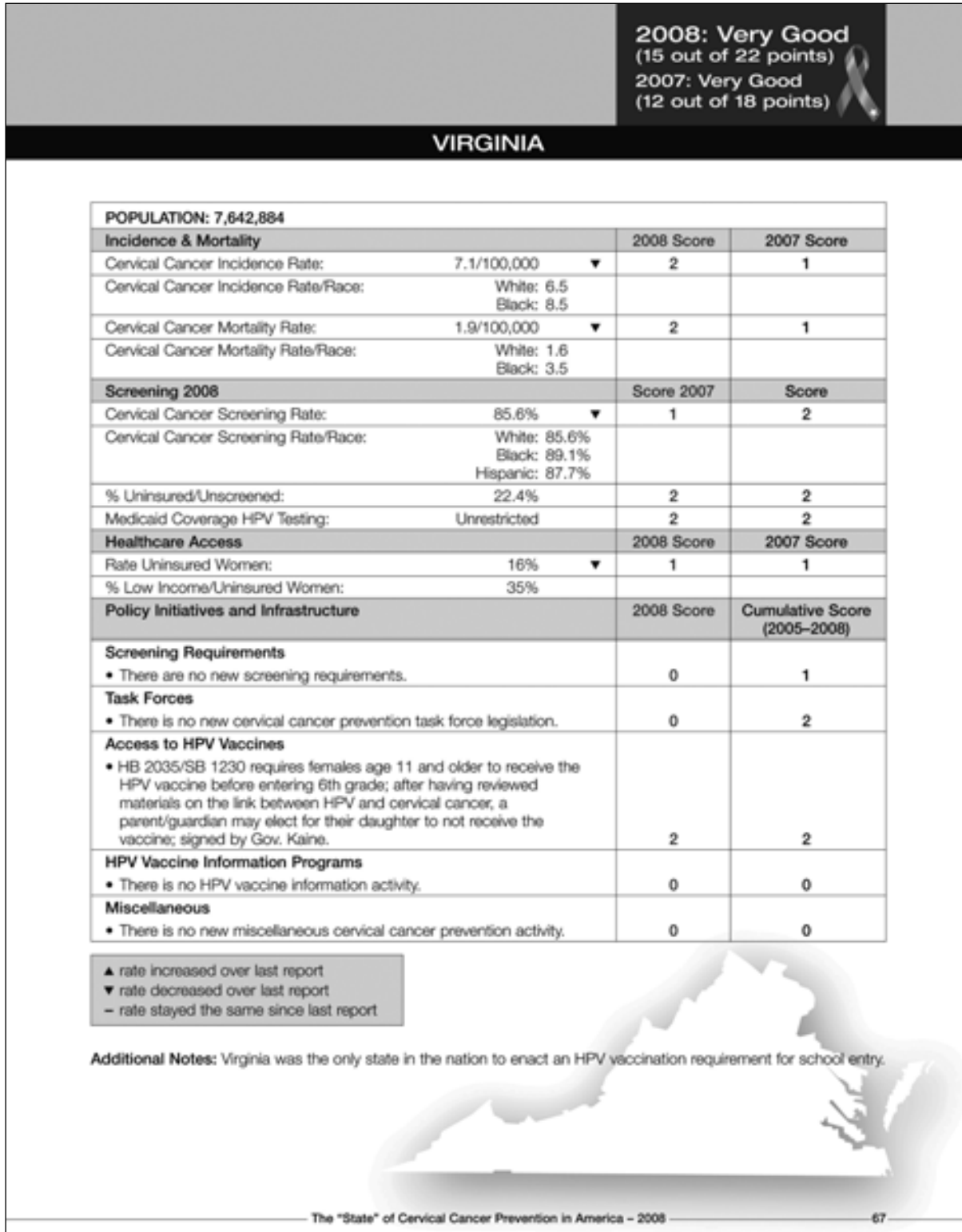
- *Pre-teen and Adolescent School Entrance Requirements*

Recognizing that requiring vaccines for school entry has helped to provide equal access to critical immunizations throughout history, regardless of a child's socioeconomic status or other factors, states should consider including HPV vaccines for the prevention of cervical cancer for girls entering middle school in conjunction with other vaccines required at this time with the same parental opt-out in accordance with states' existing exemption allowances (for example, medical, religious, and/or philosophical).

- *Insurance coverage*

States should strongly encourage insurance providers to cover adequately FDA-approved cervical cancer/HPV vaccines, Pap tests, and HPV tests. States also should authorize health departments and other health centers to establish a process to bill private insurance providers for services rendered.

Figure 3.
Example of a State Page in the 2008 Report



Note: To access the 2008 Report, including detailed information on all 50 states, please visit Women In Government's Web site at: <http://www.womeningovernment.org/prevention/statereport> or request a copy by calling (888) 333-0164.

States should encourage employers to buy plans with HPV screening and vaccine inclusion.

► *Special populations*

States should require Medicaid to cover FDA-approved cervical cancer/HPV screening technologies and vaccines for eligible women. States should ensure that public health programs (screening and vaccination) are funded adequately and utilized to ensure that all other uninsured or underinsured females have access to cervical cancer/HPV vaccination and screening, with a goal of eliminating health care disparities (based on income, geographic location, country of origin, race/culture, or other factors) and reaching underinsured and uninsured populations.

► *Education and awareness*

States should develop awareness campaigns to educate the public about cervical cancer/HPV. Existing statewide entities focused on cancer prevention and/or health should take the lead on developing, partnering with other like-minded organizations, and executing programs to educate and involve stakeholders (for example, policymakers, providers, parents, men, women, school administrators, advocacy groups) about cervical cancer, HPV, and the role of available preventive technologies. States should help women ages 19-64 identify the questions they should ask regarding their cervical health and inform women who are eligible for Medicare about available screening benefits. Legislators need to be educated to ensure already budgeted monies are not supplanted by additional appropriations or donations.

Turning Challenges Into Opportunities

With the availability of an HPV vaccine, debate now centers on

the best strategies to ensure vaccination and screening for the appropriate populations. Barriers to the passage of legislation and the implementation of the vaccine in practice surfaced on several levels in 2007, including lack of public knowledge about the endemic nature of HPV and its link to cervical cancer, concerns about vaccine safety, and parental rights issues. Past studies found generally low levels of HPV awareness and a need for public information campaigns (Friedman, 2006). A study conducted by the National Cancer Institute before the approval of the HPV vaccine found that only 40% of women had heard of HPV (“Public Awareness of HPV,” 2006).

Overall, however, the increased attention to HPV has been positive. Extensive discussion about HPV by policymakers, media, and medical and public health communities is likely to increase awareness about HPV and cervical cancer. Across the country, champions for women’s health have been successful in turning challenges into opportunities by using the increased exposure of this issue to raise the dialogue to a more informed level. ■

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**Answer/Evaluation Form:
Cervical Cancer: An Overview with Suggested Practice and Policy Goals**

COMPLETE THE FOLLOWING

This test may be copied for use by others.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Preferred telephone: (Home) _____ (Work) _____

Registration fee: **Complimentary CNE provided as an educational service by C-Change (www.c-changetogether.org).**

ANSWER FORM

1. If you applied what you have learned from this activity into your practice, what would be different?

OBJECTIVES

This continuing nursing educational (CNE) activity is designed for nurses and other health care professionals who care for and educate patients and their families regarding cervical cancer. For those wishing to obtain CNE credit, an evaluation follows. After studying the information presented in this article, the nurse will be able to:

1. Identify the connection between human papillomavirus and cervical cancer.
2. Describe risk factors and screening and prevention recommendations for cervical cancer.
3. Discuss the state of cervical cancer prevention in the United States.
4. Identify practice and policy goals for cervical cancer prevention.

CNE Instructions

1. To receive continuing nursing education credit for individual study after reading the article, complete the answer/evaluation form to the left.
2. Photocopy and send the answer/evaluation form to *MEDSURG Nursing*, CNE Series, East Holly Avenue Box 56, Pitman, NJ 08071-0056.
3. Test returns must be postmarked by February 28, 2010. Upon completion of the answer/evaluation form, a certificate for 1.3 contact hour(s) will be awarded and sent to you.
4. CNE forms can also be completed online at www.medsurnursing.net.

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This article was reviewed and formatted for contact hour credit by Dottie Roberts, MSN, MACI, RN, CMSRN, OCNS-C, *MEDSURG Nursing* Editor; and Sally S. Russell, MN, CMSRN, AMSN Education Director.

Evaluation	Strongly disagree				Strongly agree
2. By completing this activity, I was able to meet the following objectives:					
a. Identify the connection between human papillomavirus and cervical cancer.	1	2	3	4	5
b. Describe risk factors and screening and prevention recommendations for cervical cancer.	1	2	3	4	5
c. Discuss the state of cervical cancer prevention in the United States.	1	2	3	4	5
d. Identify practice and policy goals for cervical cancer prevention.	1	2	3	4	5
3. The content was current and relevant.	1	2	3	4	5
4. The objectives could be achieved using the content provided.	1	2	3	4	5
5. This was an effective method to learn this content.	1	2	3	4	5
6. I am more confident in my abilities since completing this material.	1	2	3	4	5
7. The material was (check one) ___new ___review for me					
8. Time required to complete the reading assignment: _____minutes					

I verify that I have completed this activity: _____

Comments
