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Cervical Cancer Incidence, Mortality, and Screening in Alaska

Background

Nationally, cervical cancer incidence and mortality rates have declined dramatically since the adoption of the Papanicolaou (Pap) test in the 1950s.¹ Cervical cancers are highly preventable through Pap screening, which can detect both precancerous and cancerous lesions at an earlier, more treatable stage.² Despite the effectiveness of screening, many women are still diagnosed with cervical cancer in the United States each year, the majority of whom are women who have not been adequately screened.^{1,2}

The primary cause of cervical cancer is human papillomavirus (HPV) infection.² The HPV vaccine, introduced in 2006, targets the HPV types that most commonly cause cervical cancer. Cervical cancer screening, in combination with HPV vaccination could prevent over 90% of new cervical cancer cases.¹ This *Bulletin* describes recent Alaska data on cervical cancer incidence, mortality, and screening.

Methods

Incidence and mortality data on cervical cancers diagnosed during 2004–2013 were obtained from the Alaska Cancer Registry (ACR), a population-based surveillance system that collects data on all newly diagnosed cases of cancer. Rates are represented per 100,000 women and age-adjusted to the 2000 U.S. Standard Population. Self-reported screening data for 2004–2014 were obtained from the Alaska Behavioral Risk Factor Surveillance System (BRFSS), an annual survey of randomly selected adults.¹ Results were weighted to represent the Alaska female population, and 95% confidence intervals (95% CI) were calculated. Linear regression was used to assess trends ($\alpha=0.05$).

Results

During 2004–2013 in Alaska, 246 women were diagnosed with cervical cancer and 65 women died from cervical cancer (Table 1). The average age of cervical cancer *diagnosis* and *mortality* was 40 and 54 years for Alaska Native women, respectively; 48 and 56 years for White women, respectively; and 46 and 57 years for all Alaska women, respectively.

The overall average annual cervical cancer incidence was 7.6 cases per 100,000 population (range: 5.0–10.1 per 100,000 population), and the average annual cervical cancer mortality rate was 2.0 per 100,000 population (range: 0.6–3.2 per 100,000 population; Table 1). Annual incidence and mortality rates were highly variable, with no clear 10-year trends ($p=0.5$ and 0.6, respectively). Cervical cancer incidence and mortality were 1.6 and 2.6 times higher among Alaska Native women compared to White women (Table 1).

During 2004–2014, the proportion of Alaska women aged 21–65 years who reported having a Pap test in the past 3 years decreased from 91% to 78% ($p<0.01$); a decline in Pap testing was observed among both Alaska Native women (from 83% to 70%; $p<0.05$) and White women (from 91% to 81%; $p<0.01$). Average screening rates varied by income and age, but not by race (Table 2).

Table 1. Annual Average Cervical Cancer Incidence and Mortality Rates, by Race — Alaska, 2004–2013

	Incidence		Mortality	
	Rate (95% CI)*	N	Rate (95% CI)*	N
Overall	7.6 (6.6–8.6) [†]	246 [‡]	2.0 (1.6–2.6)	65
Alaska Native	11.3 (8.4–14.9)	56	4.4 (2.5–6.9)	19
White	6.9 (5.9–8.1)	167	1.7 (1.2–2.4)	41
Other	5.7 (3.6–8.8)	23 [‡]	--	--

*Annual average age-adjusted rate per 100,000 women

[†]Includes one individual of unknown race

--Counts and rates suppressed when $N<6$

Table 2. Prevalence of Reported Cervical Cancer Screening among Alaska Women Aged 21–65 Years — Alaska, 2004–2014

Demographic Characteristics		Percent Screened (95% CI)
Overall		85.1 (83.6–86.5)
Race	Alaska Native	84.3 (80.2–87.8)
	White	86.8 (85.2–88.2)
	Other	77.6 (71.1–83.0)
Annual Income	<\$25k	74.1 (69.0–78.6)
	\$25k to <\$50k	84.4 (81.5–86.9)
	\$50k to <\$75k	88.6 (85.7–91.1)
	\$75k+	91.1 (89.0–92.8)
Age in Years	21–29	83.7 (79.1–87.5)
	30–45	88.4 (86.1–90.2)
	46–65	82.5 (80.4–84.4)

Discussion

Although cervical cancer incidence and mortality rates in Alaska are comparable to national estimates, Alaska has not experienced the same modest declines observed in the U.S. over the past decade.^{1,3} Both in Alaska and nationally, cervical cancer incidence and mortality rates are higher among women aged >40 years and among Alaska Native/American Indian women.^{1,3}

The recent decline in cervical cancer screening rates in Alaska is consistent with national trends.¹ Although a concurrent rise in cervical cancer has not been observed in Alaska, the rate of progression from precancerous to cancerous lesions is variable and can take >20 years.² Declining screening rates may have a delayed impact on incidence and mortality. In both Alaska and the U.S., women under 30, over 40, and those with lower incomes are less likely to get screened.^{1,2} As women who are not screened are at higher risk for cervical cancer, more efforts need to be made to engage these populations.

Recommendations

1. The U.S. Preventive Services Task Force (USPSTF) recommends screening for cervical cancer in women aged 21–65 years with cytology (Pap smear) every 3 years or, for women aged 30–65 years who want to lengthen the screening interval, screening with a combination of cytology and human papillomavirus (HPV) testing every 5 years.⁴
2. Health care providers should use an electronic reminder/recall system to know when a patient is due for screening.⁵
3. Women who meet certain income guidelines, who do not have insurance, who cannot meet their insurance deductible, or whose insurance does not pay for breast and cervical health screening services should be referred to the Alaska Breast and Cervical Health Check Program (BCHC), which funds cervical health screening services. More information can be found at: <http://dhss.alaska.gov/dph/wcfh/Pages/bchc/default.aspx>
4. Providers should give a strong recommendation for the HPV vaccine, recommended for children aged 11–12 years.^{2,6} The HPV vaccine does not eliminate the need for future screening.¹

References

1. Bernard VB, et al. Vital Signs: cervical cancer incidence, mortality, and screening — United States, 2007–2012. *MMWR* 2014;63:1–6.
2. Vesco KK, et al. Risk factors and other epidemiologic considerations for cervical cancer screening: a narrative review for the U.S. Preventive Services Task Force. *Ann Intern Med* 2011;155:698–705, W216.
3. Ryerson AB, et al. Annual report to the nation on the status of cancer, 1975–2012. *Cancer* 2016;122(9):1312–37.
4. U.S. Preventive Services Task Force Cervical Cancer Screening Recommendation. March 2012. Available at: <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/cervical-cancer-screening>
5. Tracking and reminder systems. Committee Opinion No. 546. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2012;120:1535–7.
6. Alaska Epidemiology *Bulletin*. “Recommended Schedule Changes for 9vHPV Vaccine.” No. 3, January 24, 2017. Available at: http://www.epi.alaska.gov/bulletins/docs/b2017_03.pdf