

# DISPARITIES IN CERVICAL CANCER SCREENING, TREATMENT AND OUTCOMES

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## INTRODUCTION

Cervical cancer is one of the most preventable cancers given its well-known viral etiology, associated identifiable preinvasive precursors, and slow progression. Although the overall incidence and mortality rates have declined since the introduction of the Papanicolaou test in the 1940s, cervical cancer remains the third most common female genital tract malignancy in the United States.<sup>1</sup> The benefits of early detection, however, have not been uniformly shared with considerable differences observed among for example, ethnic minorities, the socioeconomically disadvantaged, and the elderly.<sup>2-6</sup> Analysis of US surveillance data has revealed that the highest age-adjusted incidence of cervical cancer occurred in Vietnamese women (43/100,000).<sup>7</sup> An incidence rate of 16.2/100,000 was found in Hispanic women, with Black, American Indian, and White women having lower rates (11.8, 6.0, and 8.9/100,000, respectively).<sup>1</sup> Moreover, the current mortality rate for African American women with cervical cancer is twice that of the rate for Caucasian women (5.6/100,000 vs 2.6/100,000), as reflected in a five-year overall survival rate of 66% vs 74% for Black and White women, respectively.<sup>1</sup> Hispanics, Native Americans, and Asian Americans also appear to have higher cervical cancer mortality rates compared to White women.<sup>8,9</sup> In the following review, we discuss some of the screening, treatment and outcome issues related to disparities in the burden of cervical cancer.

to health care, is the most common attributable factor in the development of invasive cervical cancer.<sup>10,11</sup> Access to quality health care is often compromised among under-served minorities, particularly African-American women, Hispanic women, the uninsured, and older women. Language, cultural and geographic factors have been identified as barriers to receipt of well-organized Pap screening services.<sup>12-15</sup> While race has been considered by some to be an important determinant of cervical cancer incidence and mortality,<sup>16,17</sup> increasingly, socioeconomic status, education, age, and other comorbidity have been shown to be better predictors of cervical cancer screening and outcome than race and ethnicity.<sup>5,18</sup> In a study including four racial/ethnic groups—Asian-Pacific Islander, African American, Hispanic, and White—Krieger et al demonstrated that the incidence of cervical cancer was inversely related to socioeconomic status in all four ethnic groups.<sup>19</sup>

A previous report from the National Health Interview Survey found that nearly 50% of older women (ages 50–64 years) did not have a Pap smear in the previous three years.<sup>20</sup> The 2000 National Health Interview Survey reported that the lowest prevalence of Pap screening occurred among uninsured women (64.1%), recent immigrants (61.0%), and women without a usual source of health care (58.3%).<sup>21</sup> Disparities by level of education, family income, chronic disability, race, and ethnicity were also observed, though without as great a difference as those due to healthcare access, age, and immigration.<sup>21</sup> In fact, in a recent survey of minority women living in public housing projects, only 62% of women reported having had a Pap

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## SCREENING

Failure to screen with a Pap test, which often results from a lack of access

smear within the last previous year.<sup>22</sup> Fifty-one percent of Hispanics and 22% of Blacks reported not having had cervical cancer screening within the preceding year and 29% reported that they had never been informed about the need for cervical cancer screening. Among the uninsured in this study, only 36% reported receipt of a Pap smear in the last 12 months. Another study evaluating low-income minority women with abnormal Pap smears found poor adherence to follow-up recommendations.<sup>23</sup> Not only were African American women 53% less likely to accept a follow-up appointment, they were 45% less likely to show up for a scheduled appointment.<sup>23</sup> Others have also suggested that women living in non-urban areas, who tend to be less educated, poorer, and older, bear a higher burden with unequal access to preventive care services, lower screening rates, and higher cervical cancer rates.<sup>15,24</sup>

However, even among women with access to care, lack of Pap screening is the most common attributable factor to developing cervical cancer.<sup>25-27</sup> Recent studies of women enrolled in comprehensive health plans reported that up to 56% of those diagnosed with cervical cancer did not have a Pap test within the three years prior to diagnosis.<sup>25-27</sup> Approximately two-thirds of the women whose cervical cancer diagnoses were ascribed to failure to screen had at least three outpatient nongynecologic visits, which nonetheless, were opportunities for screening intervention.<sup>25</sup> In women who did receive Pap screening, inadequate follow-up of abnormalities detected by the Pap test, and the inability of the Pap test to detect an abnormality were the main factors associated with cervical cancer development.<sup>25,26</sup>

To ensure early detection of this preventable disease and reduce disparities in cervical cancer screening and ultimately, to identify those at high risk of developing cervical cancer and low screening rates (eg, women from low-

income communities, minority groups, immigrants, uninsured, and the less educated), strategies to eliminate specific barriers encountered by each group must be developed. Intensive targeted efforts to intervene and reach diverse racial/ethnic and socioeconomic groups affected by disparities have in fact, been successful in certain groups.<sup>9,27</sup> Indeed, numerous studies have noted that the most effective interventions to increase use of cancer screening are integrated, multi-faceted culturally-sensitive approaches that enhance primary access to healthcare services.<sup>28,29</sup> Likewise, strategies aimed at addressing institutional system issues including provider education and compliance with screening recommendations must also be explored. Alternative screening and therapeutic approaches to the management of cervical dysplasia are also currently being evaluated for implementation in underserved communities to maximize use of available resources and decrease rates of loss to follow-up.

### SURVIVAL

In a study of women with cervical cancer treated in an equal access, military health care system, where the impact of sociodemographic biases should be diminished, race was not an independent predictor of survival.<sup>30</sup> Similarly, recent studies examining the factors underlying differences in cervical cancer outcome among Black and White women undergoing primary radiation therapy showed that poorer outcome was associated with lower hemoglobin levels at presentation and during treatment, comorbid disease, and low socioeconomic status.<sup>6,31</sup> Stage for stage, Black and White women had similar outcomes. One study, however, reported that fewer Black women received intracavitary radiation as compared to White women.<sup>6</sup> The reasons why therapy was not received differed

between Black and White patients, with more patient refusal, comorbid conditions, and technical problems cited for the former while the predominant reason for White patients was extrapelvic disease.

Comorbid illnesses can affect delivery of optimal cancer therapy and contribute to poorer cancer treatment outcomes. Minority women with low sociodemographic characteristics tend to have more complicated medical conditions that compromise their treatment and survival from cervical cancer.<sup>6,31,32</sup> Comorbid conditions and lower performance status were associated with inability to deliver optimal radiation doses for cervical cancer and consequently, reduced disease-free survival.<sup>6,32</sup> In a separate study, Brooks et al concluded that being African American and having comorbid illnesses were associated with poor survival, even after adjusting for stage of disease.<sup>33</sup> Additionally, increasing numbers of comorbid conditions have also been correlated with decreasing likelihood of cervical cancer screening resulting in cancer diagnosis at a more advanced stage.<sup>34</sup>

Minority populations are more likely to be diagnosed with more advanced stage disease than are White women.<sup>1</sup> African Americans, for example, are often diagnosed with later stages of cervical cancer and have higher mortality than Whites.<sup>1,2,16,33</sup> Presentation with advanced stage disease, often cited as the major reason for survival disparity in minority populations, really is the end result of multiple complex factors including screening, diagnosis, and treatment disparities, as well as other cultural and social issues. As a case in point, a recent population-based study reported that African American women still had a 19% increased risk of death relative to non-Hispanic White women after adjusting for age at diagnosis, histology, stage and the first course of cancer-directed treatment.<sup>2</sup> In this study 43.7% of African American women did not receive cancer directed surgical

therapy as compared to 34.2% of Hispanic women and 28.6% of non-Hispanic women. This difference is likely accounted for, in part, by the more advanced stage of disease at time of presentation in Black women, which would make the disease less amenable to surgical intervention. Nevertheless, differences in utilization of treatment services among the different populations likely also account for the disparate survival rates. An analysis of patients diagnosed with cervical cancer between 1992–1996 from the SEER tumor registries noted that a higher percentage of African Americans received no therapy because it was not recommended, contraindicated secondary to comorbid conditions, or refused.<sup>35</sup> Additionally Black women were more likely to be unstaged and less likely to receive therapy.

In summary, there is clearly a notable disparity in cervical cancer survival between various minority populations and White women. Identifiable factors that affect survival disparity are deficiencies in screening and/or treatment (secondary to cultural influences or distrust, refusal to accept treatment, lack of access to care, failure of the healthcare system, and lack of financial or insurance support), inappropriate treatment or comorbid illness. Efforts to dismantle both the tangible and perceived barriers between patients and providers must be pursued to eliminate the currently observed disparities.

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