Cervical Cancer Screening in a Population-Based Sample of Human Immunodeficiency Virus (HIV)-Infected Women – Virginia, 2008-2009

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Background

Infection with human papillomavirus (HPV) is the primary risk factor for cervical cancer and is more prevalent in women who are co-infected with Human Immunodeficiency Virus (HIV). Immunosuppression may increase the risk that HPV infection will progress to cervical disease.

Cervical cancer remains an important cause of morbidity and mortality in HIV-infected women in the United States, and routine cervical Papanicolau (Pap) tests are recommended in this population to detect cervical abnormalities that may progress to cancer. Specifically, the American College of Obstetricians and Gynecologists recommends that women with HIV receive two cervical Pap tests in the year following HIV diagnosis and then be tested annually every year after. This report considers cervical cancer screening data from a statewide, population-based surveillance project.

Objective

Review HIV medical record data to determine the prevalence of cervical cancer screening documentation in a population-based sample of HIV-infected women in Virginia.

Methods

The Medical Monitoring Project (MMP) is a Centers for Disease Control and Prevention (CDC)-sponsored HIV surveillance project that collects information about HIV medical care and services, health behaviors, and selected health outcomes among a random, population-based sample of adults in care for HIV within each project area. MMP data collection has been conducted in Virginia since 2007.

Medical record abstraction data from the 2008 and 2009 Virginia MMP cycles were used to determine documented cervical cancer testing by Pap smear in the 12 months preceding the documented interview date (or the date of first MMP patient contact) for all sampled females. Gender, age, and health coverage variables were also drawn from the MMP abstraction dataset. Cross-linked state HIV surveillance data from the enhanced HIV/AIDS Reporting System (eHARS) provided race/ethnicity data and transmission risk group. The Ryan White funding status of a patient's care facility was based on supplementary facility data maintained by Virginia MMP and matched with VDH's HIV Care Services records.

The primary outcome of interest was documentation of a cervical Pap test within the previous 12 months. According to MMP abstraction procedures, documentation of a cervical Pap in this period is classified as Documented Test Done. Cases where providers specifically documented that screening was not performed are classified as Documented Test Not Done, and cases where there was no documentation of testing (done or not done) were classified as Testing Not Documented.

Statistical Analysis

SAS 9.3 was used to determine basic frequencies and percentages for the demographic characteristics, Ryan White care facility status, transmission risk status, health coverage status, and documentation of recent cervical cancer screening of all females in the study sample in 2008 and 2009 for whom a medical record abstraction was conducted.

Frequencies and percentages for cervical cancer screening documentation status were stratified by participants' demographic characteristics and by their facility's Ryan White funding status. Chi Square tests or Fisher's Exact Tests were then performed on the crosstabulations of these variables.

Results

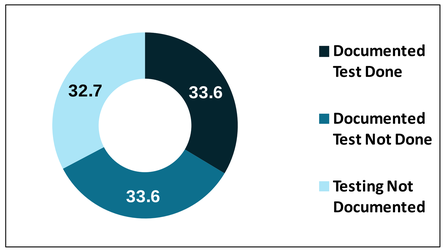
A total of 217 females had complete MMP medical record abstraction data between the two data collection cycles and were included in this analysis. The majority of the females in the sample were African-American, received care at a clinic that received Ryan White funds, had been identified as being in the Adult Heterosexual transmission risk category by the state HIV surveillance system, and had any form of public health coverage (Table1). Almost two-thirds of the sample were either between 35 and 44 years of age or 45 and 54 years of age.

Table 1. Study sample characteristics

	No.[a]	Percent
Race/Ethnicity		
White, non-Hispanic	32	15.1
Black, non-Hispanic	158	74.5
Hispanic	19	9.0
Other[b]	3	1.4
Age		
18-34 yrs	48	22.1
35-44 yrs	65	30.0
45-54 yrs	65	30.0
55+ yrs	39	18.0
Facility Funding Status		
Ryan White	167	77.0
Non-Ryan White	50	23.0
Transmission Category		
Adult IDU	24	11.1
Adult Heterosexual	121	55.8
Adult NIR/NRR[c]	60	27.6
Other[d]	7	5.5
Health Coverage		
Private Only	49	22.6
Any Public	122	56.2
None	10	4.6
Not Documented	36	16.6

[a]N varies due to missing values.
[b]Other includes multiracial, Asian/Pacific Islander and Native American/Alaskan Native.
[c]No Identified Risk/No Reported Risk
[d]Other includes Adult Transfusion/Transplant, Perinatal, and Child Transfusion/Transplant.

Figure 1. Cervical cancer screening documentation within the study sample, percentage



Of the sample of 217 females, cervical cancer testing documentation was almost equally divided between the three categories: Documented Testing Done, Documented Testing Not Done, and Testing Not Documented (Figure 1). A cervical Pap test was documented as having been done in the previous year for only 33.6% of the sampled women.

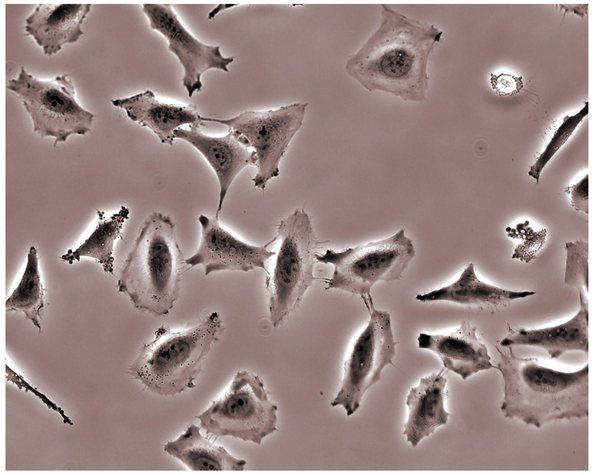
Table 2. Cervical cancer screening documentation by race, age, Ryan White funding status, transmission risk, and health coverage status

	Documented Test Done %	Documented Test Not Done %	Testing Not Documented %	p-value
Race/Ethnicity				0.0064[d]
White, non-Hispanic	21.9	28.1	50.0	
Black, non-Hispanic	31.0	34.2	34.8	
Hispanic	63.2	31.6	5.3	
Other[a]	66.7	33.3	0.0	
Age				0.0493[e]
18-34 yrs	45.8	22.9	31.3	
35-44 yrs	40.0	27.7	32.3	
45-54 yrs	20.0	38.5	41.5	
55+ yrs	30.8	43.6	25.6	
Facility Funding Status				0.0002[e]
Ryan White	40.1	32.3	27.5	
Non-Ryan White	12.0	34.0	54.0	
Transmission Category				0.4701[d]
Adult IDU	41.7	20.8	37.5	
Adult Heterosexual	33.9	31.4	34.7	
Adult NIR/NRR[b]	30.0	41.7	28.3	
Other[c]	14.3	28.6	57.1	
Health Coverage				0.0077[d]
Private Only	22.5	38.8	38.8	
Any Public	44.3	30.3	25.4	
None	20.0	30.0	50.0	
Not Documented	16.7	33.3	50.0	

[a]Other includes multiracial, Asian/Pacific Islander and Native American/Alaskan Native.
[b]No Identified Risk/No Reported Risk
[c]Other includes Adult Transfusion/Transplant, Perinatal, and Child Transfusion/Transplant
[d]P-value for Fisher's Exact Test as ≥25% of expected cell counts were <5
[e]P-value for Chi Square Test

Within the sample, Hispanic women and women classified as being of "Other" race were more likely to have a documented test, as were women who were younger, women who attended a clinic funded by Ryan White, women whose transmission risk category was identified as Adult IDU, and women who had any public insurance.

By p-value, race/ethnicity, age, Ryan White funding status, and health coverage status were significantly related to cervical cancer screening documentation. Transmission risk was not significantly related to cervical cancer screening documentation.



Photomicrograph of cervical cancer cells. Shutterstock.

Conclusions

A cervical Pap test was not documented or not done in the majority (66%) of medical records reviewed. Certain demographic factors and a clinic's funding status may be related to cervical cancer screening documentation. While the source of a clinic's service funding may appear to be associated with a higher frequency of cervical cancer screening, further analysis of related factors is warranted, including state quality management initiatives and Ryan White reporting requirements. A further assessment of the relationship between demographic factors and cervical cancer screening will be conducted to determine how to improve screening rates among women living with HIV in Virginia.

MMP is an important data source for describing the in-care population of those living with HIV. Data from MMP will continue to be used to investigate clinical and behavioral characteristics and health outcomes for people in care for HIV in Virginia.

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