Prevalence of Cervical Cancer Screening Among HIV-Infected Women in the United States

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Background

HIV-infected women are predisposed to cervical disease

- 13–60% of HIV-infected women have cervical cytological abnormalities, which can lead to invasive cervical cancer
- Women with low CD4 counts are at particular risk

HIV-infected women should receive regular cervical cancer screening

- HIV treatment guidelines recommend that providers:
  - -Include Pap test as part of initial evaluation
  - -Repeat once during first year after diagnosis
  - -Repeat annually thereafter

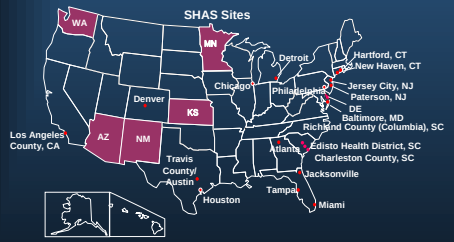
Objectives

- Determine whether cervical cancer screening is performed as recommended
- Determine factors associated with not receiving cervical cancer screening

Methods

Supplement to HIV/AIDS Surveillance (SHAS)

- Cross-sectional interview study conducted during 1990–2004
- HIV-infected persons aged ≥18 years residing or seeking care in one of 19 SHAS sites were eligible to participate
- We included all women interviewed during 2000–2004 who were diagnosed ≥1 month before interview in our analysis



Outcome Variable: receipt of Pap test during past year

Statistical Analysis

- Cochran-Armitage used to test for linear trend by age group
- Variables associated ($p<0.1$) with not having a Pap test by X^2 eligible for inclusion in multivariable analysis
- Forward multivariable logistic regression used to determine factors associated with not receiving a Pap test
  - -Based on logit plots, included age as a continuous variable
  - -Controlled for site, year of interview, and race/ethnicity
  - -Tested for interactions between variables

Results

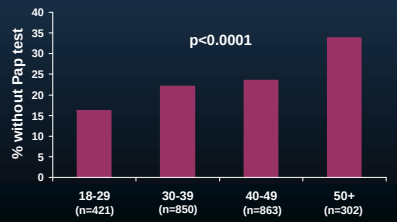
- During 2000–2004, 2417 women were interviewed and met analysis criteria
- **Of these, 556 (23%) did not report a Pap test during the year before interview**

Selected Characteristics of Respondents

Characteristic	No Pap test, past year No.† (%‡)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)*
Age (y)			**1.3 (1.1–1.4)** §
18–29	68 (16)	Referent	
30–39	185 (22)	**1.5 (1.1–2.0)**	
40–49	202 (33)	**1.6 (1.2–2.1)**	
≥50	101 (34)	**2.6 (1.8–3.7)**	
Most recent CD4 count (cells/µL)			
≥200	206 (19)	Referent	Referent
<200	118 (26)	**1.5 (1.2–2.0)**	**1.6 (1.2–2.1)**
Unknown	232 (27)	**1.6 (1.3–2.0)**	**1.4 (1.1–1.7)**
History of abnormal Pap test findings			
No	318 (24)	Referent	Referent
Yes	176 (17)	**0.7 (0.5–0.8)**	**0.6 (0.5–0.8)**
Pregnancy, past year			
No	535 (24)	Referent	Referent
Yes	21 (12)	**0.4 (0.3–0.7)**	**0.6 (0.4–1.0)**
Total	**556 (100)**	---	---

*In multivariable analysis, controlled for year of interview, study site, and race/ethnicity.
†May not add to total because of missing responses.
‡Percentages may not add to 100 because of rounding.
§Per 10 year increase in age.
OR: odds ratio; CI: confidence interval.

Trend in Non-Receipt of Pap Test by Age Group



Interaction of Race/Ethnicity and Location of Last Pelvic Exam

Characteristic	No Pap test, past year No.† (%)‡	Unadjusted OR (95% CI)	Adjusted OR (95% CI)*
Race/ethnicity			
White	75 (25)	Referent	See interaction
African American	389 (23)	0.9 (0.7–1.2)	See interaction
Hispanic	74 (20)	0.8 (0.5–1.1)	See interaction
Other	18 (23)	0.9 (0.5–1.6)	See interaction
Most recent pelvic exam at usual source of HIV care			
Yes	170 (13)	Referent	See interaction
No	355 (32)	**3.2 (2.6–3.9)**	See interaction
Interaction			
White			
Pelvic at usual source	28 (18)	Referent	Referent
Pelvic not at usual source	47 (33)	**2.3 (1.4–4.0)**	**2.3 (1.8–2.9)**
African American			
Pelvic at usual source	137 (16)	Referent	Referent
Pelvic not at usual source	252 (31)	**2.5 (1.9–3.1)**	**1.7 (1.1–2.5)**
Hispanic			
Pelvic at usual source	28 (11)	Referent	Referent
Pelvic not at usual source	46 (39)	**5.1 (3.0–8.7)**	**4.8 (2.7–8.4)**
Other race/ethnicity			
Pelvic at usual source	8 (19)	Referent	Referent
Pelvic not at usual source	10 (29)	1.7 (0.6–4.9)	**2.1 (1.1–4.1)**
Total	**556 (100)**	---	---

*In multivariable analysis, controlled for year of interview, study site, and race/ethnicity.
†May not add to total because of missing responses.
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OR: odds ratio; CI, confidence interval.

Interaction of Clinical Category and History of Sexually Transmitted Disease (STD)

- Clinical category (HIV, AIDS, or unknown) interacted with history of STD.

-Women with HIV infection (not AIDS) and an STD during the past year, compared with women who had not had an STD, were more likely to have received a Pap test in the past year (AOR = 0.4 for not receiving a test, CI: 0.2–0.6).

Limitations

- Data may not represent all women with HIV infection
  - - Limited to women in 18 states, women and sites were not randomly selected
  - - May under-represent women who are not in care
- Data were self-reported, may be subject to recall bias or misclassification

Discussion

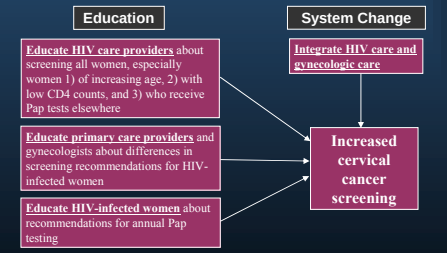
One-quarter of HIV-infected women had not received the recommended Pap test during the past year

Three factors were associated with not receiving a Pap test:

1. **Last pelvic exam at location other than usual source of HIV care**
   - -Requires additional coordination from physician and patient
   - -Effect particularly notable for Hispanic women
2. **Increasing age**
   - -Other competing health issues shift focus from cervical cancer prevention
   - -Unlike HIV-negative women, screening should continue indefinitely
3. **CD4 count < 200**
   - -Increased risk of other illnesses lead to competing priorities
   - -At higher risk of abnormalities
   - -Cervical cancer screening should be a priority

Recommendations

Two-Pronged Approach to Increasing Cervical Cancer Screening



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