# Self-administered HPV testing as a cervical cancer screening option for underscreened women in the U.S.

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## INTRODUCTION

This research investigates how Hispanic and Arab women – two populations of women in the U.S. who are consistently underscreened – respond to the option of self-administered human papillomavirus (HPV) testing as a method of cervical cancer prevention, and how likely they would be to use self-testing as a first step in preventive screening.

Though significant gains have been made in preventing cervical cancer, it continues to cause morbidity and mortality among women in the United States, particularly among those women who are screened infrequently or not at all. Recognition of the strong causal relationship between persistent, high-risk HPV infection and the development of cervical cancer has led to the development of HPV DNA tests to be used for cervical cancer screening. In the U.S. HPV testing is used in conjunction with traditional Pap tests, though there is increasing evidence and support for the use of HPV testing alone as a primary cervical cancer screening test.

Novel health screening devices have been developed that allow women to self-screen for HPV, which may offer opportunity to simplify the cervical cancer screening protocol and reach women who are not accessing screening services.

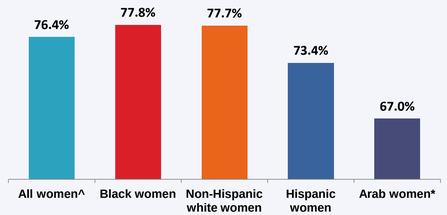
## OBJECTIVES

This research presents new quantitative and qualitative data on the likelihood to use and sense of self-efficacy in using HPV self-screening devices for cervical cancer screening purposes.

The study identifies and elaborates specific implementation challenges and policy implications associated with incorporating self-administered HPV testing into the cervical cancer screening protocol targeted at under-screened populations in the U.S.

## Pap screening rates by population

**Percentage of U.S. women in 2010 having Pap test within past 3 years, by population**




Source: Smith, R., Cokkinides, V., & Brawley, O. W. (2012). Cancer screening in the United States, 2012: A review of current American Cancer Society guidelines and current issues in cancer screening. CA: A Cancer Journal for Clinicians.

^ There has been a 3.2% decline in the percentage of all women getting Pap tests since 2005.

* This is an estimate of the % of Arab women getting screened in the U.S. based on a study from the Detroit area that found that the 3-year cervical cancer screening rate was approximately 10 % points lower than the general population (Darwish-Yassine & Wing, 2005).

## METHODS

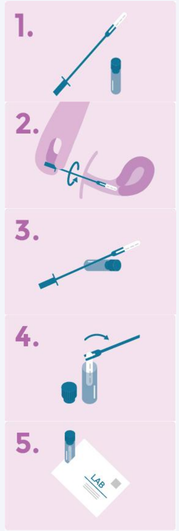
This study uses a cross-sectional survey & individual interviews to explore Hispanic and Arab women's likelihood to use a self-administered screening test for cervical cancer screening, their sense of self-efficacy in doing so, and the concerns they may have about using the test. Participants were between the ages of 30 and 65, and living in the United States.

| **Total Population** | **Surveys n=476** | **Interviews n=31** |
|---|---|---|
| **Hispanic Women** | **Surveys n=227** | **Interviews n=19** |
| National Hispanic Council on Aging (NCHOA)<br>Miami, FL<br>Los Angeles, CA | 122<br>57 | 0 |
| Children's National Medical Center (CNMC)<br>Pediatric Clinic<br>Adams Morgan, DC | 25 | 0 |
| The Family Place<br>Washington, DC | 23 | 17 women<br>2 key informants |
| **Arab Women** | **Surveys n=249** | **Interviews n=12** |
| ACCESS Community Health & Research Center<br>Dearborn, MI | 249 | 10 women<br>2 key informants |

## HPV self-testing: the evidence to date

- Superior sensitivity compared to the Pap test (↑ sensitivity 25 – 35%) → better at detecting CIN2, CIN3, cancer
  - Lower specificity → abnormal results should be followed up with Pap test
- Self-samples are as accurate as physician samples
- Longer intervals between screenings (better sensitivity, high negative predicative value)
- Simplifies access and cultural barriers to screenings
- Potential significant cost savings
- HPV testing is automated, rapid, does not require sophisticated technology
- High acceptability among women in clinical trials
- RCT in India (Sankaranarayanan et al., 2009) found that one HPV test in a woman's lifetime ↓ cancer mortality by 48% as compared to standard of care

## Procedure for HPV self-sampling

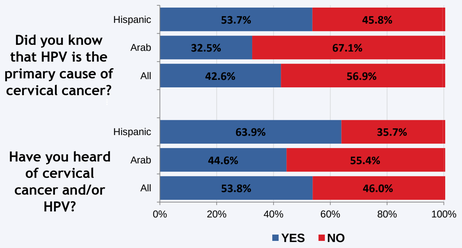



1. **Open kit with self-sampling wand (cotton swab) and tube**
2. **Slide the wand into your vagina until it stops. Rotate the wand once, and take it out**
3. **Let the wand dry for a minute.**
4. **Put the cotton swab portion of the self-test in the tube provided.**
5. **Put the cap on the tube & place in pre-addressed envelope, seal, and post it. Results will arrive by mail, text, or email, depending on delivery preference**

Graphics and procedure adapted from Swedish company Approvix. http://www.aprovix.com

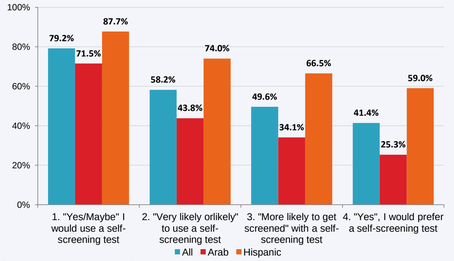
## RESULTS

### Participants' knowledge of HPV, cervical cancer, and what causes cervical cancer



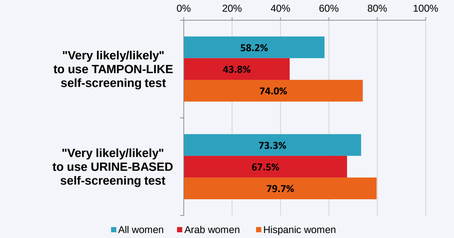

•Women who have heard of CC and HPV were 3x as likely to use self-screening test (OR = 3.3, 95% CI 2.0 – 5.5; **p=0.000**);
•Women who know HPV cases cervical cancer are nearly 4x as likely to want to use self-screening test (OR = 3.7 , 95% CI 2.1 – 6.2; **p = 0.000**).

### Likelihood of all participants to use or prefer a self-screening test for cervical cancer

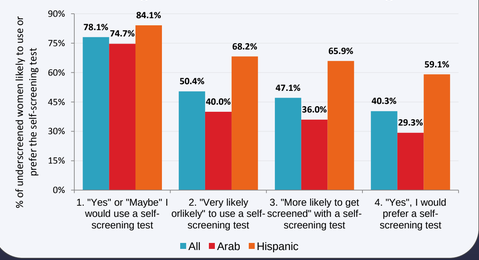



Hispanic women surveyed are:
•3x more likely than Arab women to respond "very likely" or "likely" to screen themselves with an at-home HPV test (OR = 3.0, 95%CI =1.8 – 4.9; **p = 0.000**).
•3x more likely to say that the availability of an at-home test would make them more likely to get screened for cervical cancer (OR = 2.9, 95% CI 1.7 – 4.8; **p = 0.000**)
• 4 x more likely to prefer an at-home screening test (OR = 4.3, 95% CI 2.9-6.5,**p=0.000**).

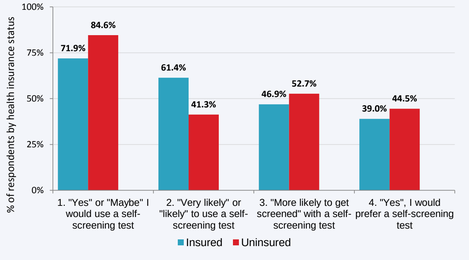
### Likelihood of using a tampon-like versus urine-based self-screening test for cervical cancer




### Likelihood of *underscreened* women to use or prefer a self-screening test for cervical cancer screening

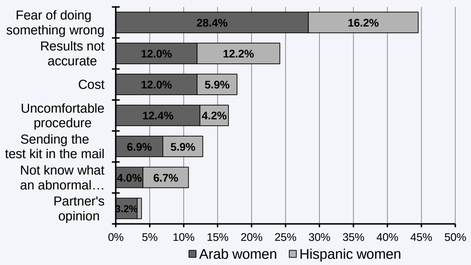



### Likelihood of uninsured/insured women to use or prefer a self-screening test for cervical cancer




• Uninsured women are twice as likely to want to use an at-home test (OR = 1.9, 95% CI 1.1 – 3.3; **p = 0.014**), as compared to women with health insurance.
• Uninsured Arab women are 3 times more likely than insured Arab women to respond "yes" to wanting to use an at-home test (OR = 3.4, 95% CI 1.6 – 6.9; **p = 0.001**).

### Participants' concerns regarding using a self-screening test for cervical cancer




## POLICY IMPLICATIONS & CONCLUSIONS

- Changing landscape → HPV testing will replace PAP as primary screening tool → self-testing on the horizon
- Potential to make significant strides in prevention of cervical cancer among the subpopulations where the disease is most prevalent
- Changing guidelines → physician buy-in and patient education are critical (ensure continued preventive care visits)
- Significant logistical, follow-up protocol, treatment challenges
- Need cost-effective analyses: lower cost of testing, less frequent testing, avoidance of future treatment expenses
- Role of the ACA. What about undocumented immigrants?
- Unknown impact of HPV vaccine coverage and HPV-based screening
- Self-screening for diagnosis and prevention in other diseases
- Revisit screening test criteria? Add 'ease of use/access', '↓ disparity'
- ***EDUCATION IS PARAMOUNT*** → empower women with knowledge and skills to screen themselves!

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