Mitigating Cervical Cancer Rates Among Disproportionately Affected Women

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AUGUSTA UNIVERSITY
College of Nursing

2024 GANE Conference - Lake Lanier
February 29, 2024

Augusta University College of Nursing
Center for Nursing Research 5/31/2024

Objectives

Identify the factors associated with high-grade squamous intraepithelial lesions (HSIL)

Learn from and inform nurses and educators of the use of an integrated team strategy to improve cervical cancer rates among vulnerable populations

AIMS

- Review the Social Determinants of Health (SDOH) and their impact on the development of cervical cancer

- Demonstrate the value of an integrated approach to reduce the occurrence of cervical cancer among women of all races

Outline

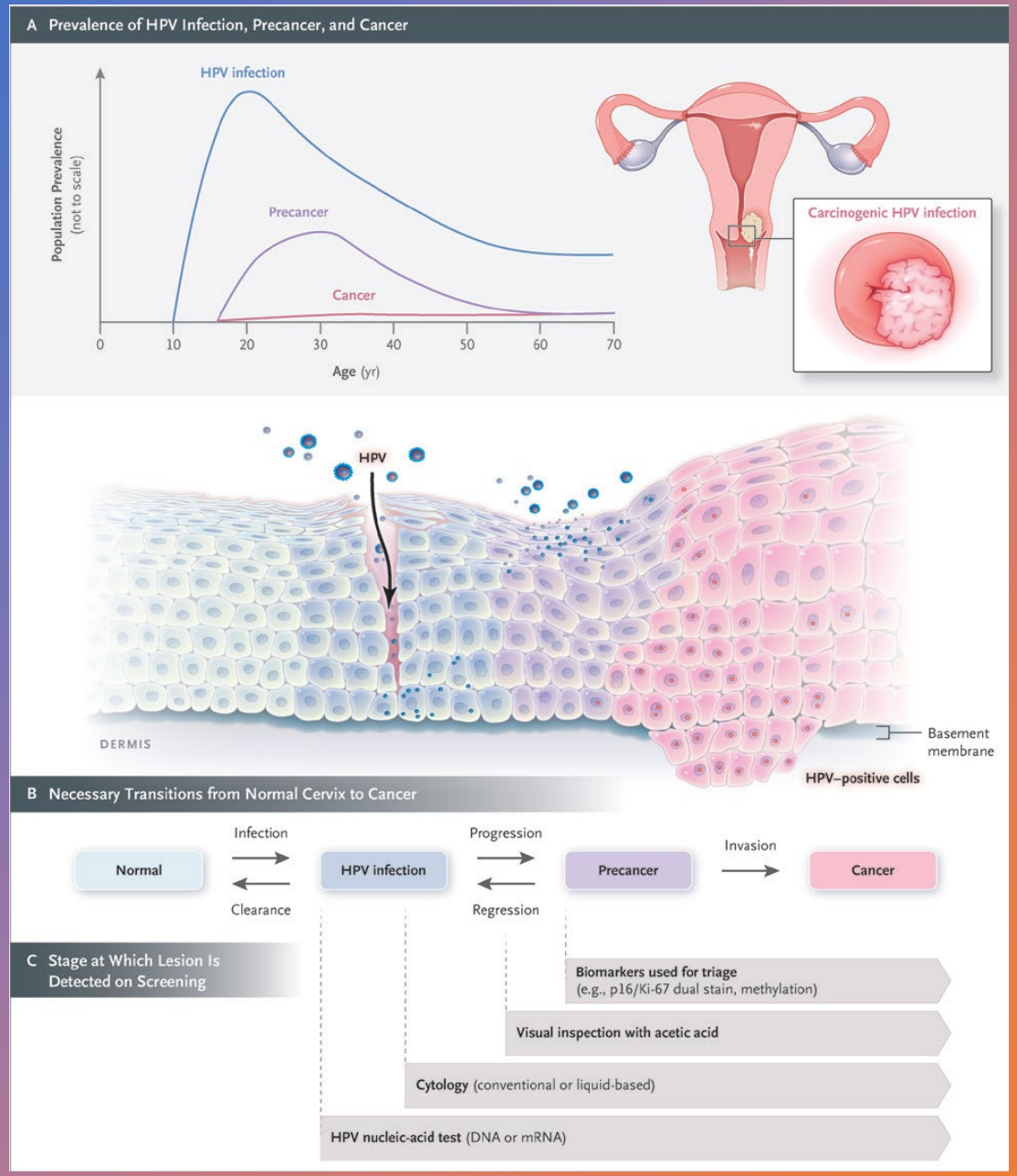
I. 2018 World Health Organization Initiative
   A. USA Demographic and Factors Associated with Cervical Cancer
   B. Cervical Pap Screening Methods and Benefit/Harms
   C. Strategies for treating HPV Positive Pap Smears

II. Clinical Facts and Pearls

III. HPV and Vaccine Trends

IV. Cervical Screening Patient Education Tool

V. Interdisciplinary Hispanic Women's Clinic



2018 WHO Global Initiative *Eliminate Cervical Cancer as a Public Health Problem*

- Vaccination against the human papillomavirus (HPV)
- Screening for and treatment of cervical cancer

CERVICAL CANCER

- 2nd most common cancer and cause of death from cancer in women of reproductive age worldwide
- Greatest incidence, prevalence and mortality in undeveloped countries

The IARC Perspective on Cervical Cancer Screening. (Nov 2021). Veronique Bouvard, Ph.D., Nicolas Wentzensen, M.D., Ph.D., Anne Mackie, M.B., B.S.,, et al., n engl j med 385; nejm.org November 11, 2021 -DOI: 10.1056/NEJMsr2030640

USA Population Based Programs
Multistep Process

Screening

Triage of patients with positive results on screening

Confirmation on biopsy

Treatment of precancerous lesions

Participation Rates and Coverage Vary by Settings, based on:

- Socioeconomic status
- Ethnic group
- Health Insurance
- Education Level
- Access to Care

USA Trends
Late-Stage Cervical Cancer

- USA Cases and Deaths are up among low- income women ($19,330 and $38,820)
  - White women – (4.4% annually) since 2007.
  - More deaths **occurred in Black women** (2.9%) since 2013
  - Hispanic (1.5% Annually)

- Ages 30 – 44 Rates of cervical cancers rising between 2012 – 2019
- Ages 20 -24 Rates declining due to HPV Vaccines

- **CONTRIBUTING FACTORS**

Widening disparity due to socioeconomics

Disruptions in Screening & Treatment → Late - Stage Findings/More Deaths

Evidence-Based Methods of Pap Smear Screening

Conventional Cytology	Liquid-Based Cytology	Visualization Inspection with Acetic Acid (VIA) (India & S. Africa)	HPV Nucleic Acid Testing for High-Risk HPV Genotypes	Cytology based Romanowsky-Giemsa Staining (Russia)
GROUP A	Group A	Group A	Group A	Group C
Reduces Incidence of & Mortality from cervical cancer	Reduces Incidence of & Mortality from cervical cancer *Similar or higher sensitivity for detection cervical intraepithelial neoplasia (CIN2 +and CIN3+) *Similar or lower specificity & positive predictive value – less number unsatisfactory slides	Reduces Mortality associated with Cervical Cancer May Reduce Incidence of cervical cancer	50% reduction in Mortality incidence More effective in detection of pre-cervical lesions	Data on screening performance suggest low reproducibility and low specificity No comparative studies to test for accuracy, efficacy or effectiveness Lower costs - single examination

With Infrastructures/Screening Programs

Adequate triage tests can greatly reduce colposcopy referral rates while ensuring a high sensitivity for the detection of precancerous lesions

HPV DNA Tests

greater numbers of high-grade cervical lesions (CIN2+, CIN3+, or both)

greater reduction in detection rates of CIN2+ at both 6 months and 36 months

greater reduction in cervical cancer of stage II or higher

Greater reduction in mortality

Benefits outweigh the potential increase in both true and false positive results

VIA:

Has a high variability rate

Test positivity inconsistent across studies

Respective harms are not compared to other methods

Substantial limitations include subjectivity, heterogeneity, and potential misclassification of outcomes

Comparisons
Slides vs HPV DNA testing

Convention Cytology

- Prone to subjective assessment & lacks reproducibility
- Large proportion of unsatisfactory slides
- Requires more frequent testing and greater numbers testing over lifetime
- Cannot be conducted on patient-collected specimen

Liquid Based HPV DNA Cytology

- Provides molecular and cytologic test with a single sample (in triaging atypical/mild abnormal results and HPV positive women)
- Allows for longer intervals between screenings than cytologic analysis
- Can be performed on vaginal samples that women collect themselves, an approach that extends access to screening to underserved populations

Balance of Benefits and Harms
**Benefit outweighs harm for women over age 30

All the screening methods may cause pain/discomfort

Anxiety - Procedure, Results, Diagnostic and Treatment Pathways

Positive Results:

Increased levels of anxiety and distress; concerns about cancer

May trigger feelings of stigma and shame, particularly after a positive HPV test result

Potential physical harms of diagnostic procedures and treatment include:

Risks of bleeding, infection, and adverse obstetric outcomes

Rate of referral to colposcopy and treatment

False Positive or Unsatisfactory Results:

Increased costs to patients, loss to follow-up, and loss of confidence in the service.

Triaging for HPV-Positive Results

Goal: Maximize the Benefits of Cervical Screening and Limit the Harms

Strategies:

Which HPV-positive women need colposcopy, which need treatment, and which need both??

- Genotyping for HPV16/18
- Cytologic analysis
- P16/Ki67 dual staining (biomarker for high-risk HPV)*
  ***an alternative to triage ASCUS or LSIL prior to referral for colposcopy and biopsy
- Colposcopy
- VIA
- Combinations of above

Clinical Facts & Pearls

- Persistent infection with HR-HPV is essential for the development of cervical cancer.
- Factors affecting HPV persistence include HPV type, patient age, and immune status . ***(This is why HPV genotyping has a high sensitivity for the detection of cervical disease)
- HPV testing is superior for the detection of high-grade cervical lesions compared to cervical cytology
- With a high prevalence of transient HPV infections, especially in young women, the specificity of HPV genotyping as a screening method for cervical cancer is limited.

- Bosn J Basic Med Sci. 2019 Nov; 19(4): 336–341. National Library of Medicine National Center for Biotechnology Information. doi: 10.17305/bjbms.2018.3560 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6868483/#:~:text=Ki%2D67%20is%20a%20nuclear,HPV%20genotyping%20and%20Pap%20smear.

Pap Screenings and Clinical Decision Making

- Screening age to start and stop pap smear testing

  Varies Worldwide & Based On:

  - ❑ Natural history of HPV infections in a population
  - ❑ The duration and coverage of the vaccination program

- Older women (≥65 years of age)

  - ❑ Cytologic (conventional or liquid-based or HPV testing) are effective, particularly in women without a history of regular normal screenings

Special Considerations

- HIV/immunocompromised
  * (increased risk for HPV infection, precancerous cervical lesions, and cancer)

- Settings with high prevalence of HIV (Africa)
  * A screen-and-treat approach of an HPV test may lead to substantial overtreatment

WHO recommendation:

HPV DNA primary screening test

Triage HPV-positive women

(Reduces # test- positive women for referral and treatment)

Pearls

With VIA:

Both overtreatment and undertreatment may occur when VIA is used to screen women living with HIV.

Potentially many false positive result

May not detect precancerous lesions at high risk for progression

Same liquid-based sample can be used for

cervical cytology, HPV genotyping, and immunocytochemistry testing

- ❑ Simplifies the procedure
- ❑ p16/Ki-67 dual staining may be offered as a “reflex test” for patients with abnormal results on liquid- based cervical cytology or with HR-HPV positive results
- ❑ Avoids another visit to the specialist to perform the test

HPV Trends – USA

Cross-sectional study – 3 national databases

- Incidence of cervical cancer has decreased, especially in younger women, after HPV vaccine approved 2006
- Oropharyngeal and anal/rectal cancers have increased among men

RESULTS:

N = 657, 317 HPV-Associated Cancers

Men	Women
264, 019	393, 298
40.2%	59.8%

Non-Hispanic Asian/Pacific Islander	2.2%
Non-Hispanic Black	11.4%
Hispanic	2.2%
Non-Hispanic White	76.1%

Cheng-I. Liao, MD; Alex Andrea Francoeur, MD; Daniel S. Kapp,MD, PhD; Michelle Ann P. Caesar, MPH;Warner K. Huh, MD; John K. Chan, MD (2022**).** ***AMA Network Open.*** **2022;5(3):e222530. doi:10.1001/jamanetworkopen.2022.2530 (Reprinted) March 16, 2022 11/12**

TRENDS (CONTINUED)

Men	Women
N = 264, 019 (40.2%)	N = 393, 298 (59.8%)
Oropharyngeal (80.1%)	Cervical (52.4%)

VACCINE

2008 – 2018: ages 13-17

37.2% to 69.9%

Annual cancer increases:

Oropharyngeal (2.71%)

Anal/Rectal (1.83%)

BEFORE VACCINE APPROVAL IN 2006:

- Cervical Cancer Rates in the 20- to 24-year age group were decreasing at 2.29% Annually

AFTER VACCINE APPROVAL

- Rates decreasing at 9.50%
- Incidence of oropharyngeal remained stable but anal/rectal cancer increased at 2.83%every year

CONCLUSIONS AND RELEVANCE

In the US, cervical cancer rates have decreased as a population

Cervical Screening Patient Education Tool

Dr. Denotra Gaillard

Introduction
Costa Layman Women's Clinic
(A Rural Health Community Engaged Service/Learning Partnership Program)

https://augustauniversity.box.com/s/9eppv174f3l2hffft2iriasbefgc6hqg

(Klock, 2023).

Stakeholders and Affiliates

- AU CON Faculty/DNP Students
- Carolina Health Centers, Inc. Electronic Medical Record Training Services
- FQHC Ridge Spring Family Practice
- SC Best Chance Network
- Self-Memorial Hospital Mobile Mammography
- Augusta University Translator Services (CLAS Department)
- Augusta University Laboratory Personnel
- Costa Layman Farms
- Lion's Club
- Carnegie Foundation – CELC Representatives
- Local Media

Goals/AIMS

Goals	Aims
Improve Health & Well-being of workers	**Access to Free/low-cost health for Hispanic Women Farmworkers**
Increase Confidence & Skill in performing breast exams, pap smears, pelvic exams, and STI testing	Prepare DNPs to provide women's health services *SC Best Chance Network Guidelines
Timely and Appropriate follow-up/continuity services	Provide Health Education, Follow-up and Referral Based health services

Outreach Clinic Interventions

- **Services**
  - Breast exams
  - Pelvic exams
  - Pap smears
  - Mobile mammograms
  - STI and pregnancy testing
  - Flu vaccines
  - Vision and hearing screenings
  - Laboratory Testing (CMP, Hgb AIC, HIV, RPR, CBC)
  - Follow up – Referrals: Migrant Clinic & Contracted BCN Providers

Clinic Evaluations

Tests	2023	2022
+ Syphilis (RPR)	0/70	Not specified
+ Gonorrhea (G)	0/39	Not specified
+ Chlamydia (C)	3/39	Not specified
+ Trichomonas (T)	0/39	Not specified
+Pregnancy	1	3
+Pap	2/18	4/36
Diagnostic Mammogram Referrals	12	24
Mammogram Results	BIRADS 0: 11 BIRADS 1: 13 BIRADS 2: 3	BIRADS 0: 4 BIRADS 1: 14 BIRADS 2: 2
Flu shots administered	71	58

Media: Women’s Clinic 2023
https://www.wrdw.com/2023/11/03/au-brings-free-health-screenings-female-farmworkers/

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Cervical Screening: Do I Need a Pap Test? Really
An Educational Tool

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Learning Objectives

- Identify common clinical pearls that will aid in preparing and educating patients for cervical screening.
- Discuss tips that will enhance patient education on cervical screening.

What is a Pap Test ???

Check for changes in the cells of the cervix

The test is done in the office of a healthcare provider

It only takes minutes to perform

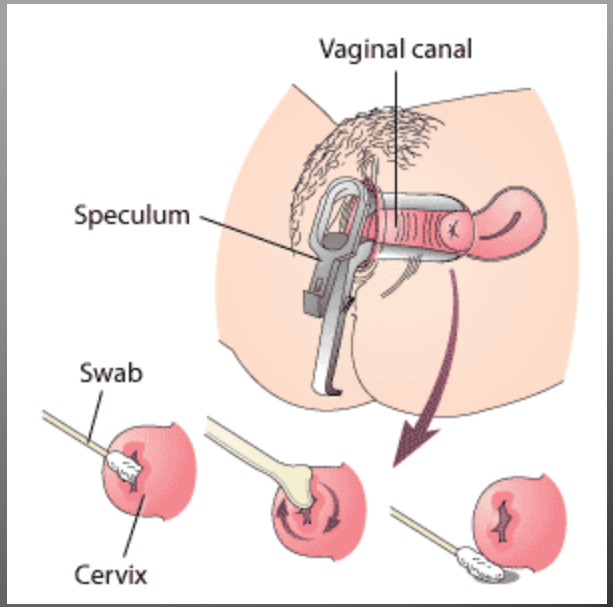
The Pap Test does not check for sexually transmitted diseases such as:

HIV

Chlamydia

Gonorrhea

Syphilis



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So What's Next

- The cells collected from the cervix are sent to the lab to be checked under a microscope
- If any cell changes are found, they will be followed-up closely
- If needed cell changes can be treated so that cancer does not develop

Who
&
How Often Should I Have A Pap Test

Age	How Often to Screen
Under Age 21	Not Needed, regardless of sexual history
21 – 29 years old	Every 3 years
30 – 65 years old	Co-testing-Pap & hrHPV Testing every 5 years Pap test alone every 3 years or hrHPV testing every 5 years
Over age 65	No screening after adequate negative prior screening results
All Women (regardless of age) who have had a hysterectomy (total hysterectomy)	Should be based on why hysterectomy was done

American College of Obstetricians and1Gynecologists 2021

How Should I Get Ready For The Pap

- Make an appointment with a Healthcare Provider on a day when you are not on your period
- Don’t douche, or use contraceptive jellies or creams 24 hours prior to the Pap Test
- Don’t have sexual intercourse 24 hours before the test

What are the Risks

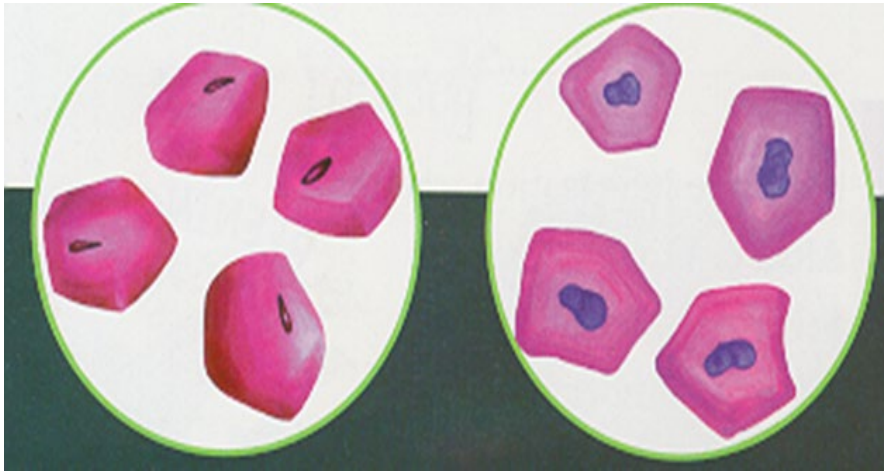
- Pap test can miss abnormal cell changes so follow up with regular testing
- Having abnormal results can be stressful
- Pap test can find changes that may go away

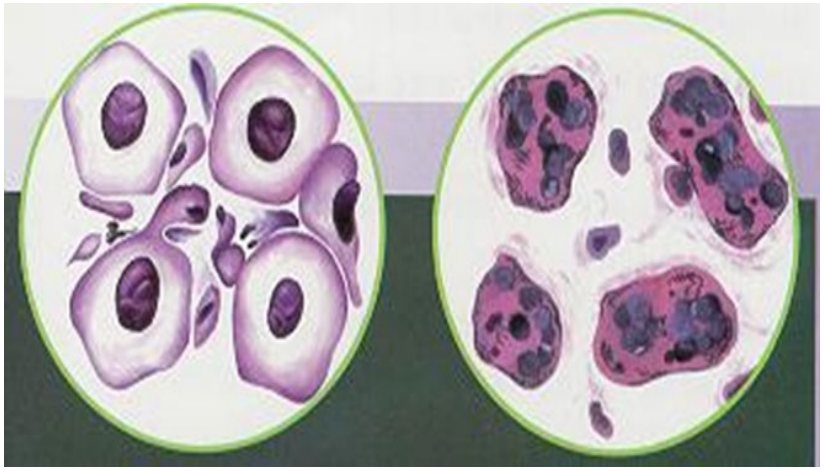
etalk.cooperhealth.org

What are Abnormal Results

- Abnormal results mean that cells taken from your cervix look different from normal cells under the microscope
- All abnormal results should be followed up closely because additional testing may be needed
- Abnormal results are very common
- An abnormal result does not mean you have cancer

Cell Changes





Normal Cells

Mild cell changes (low-grade changes)

Moderate/ severe changes (high-grade changes)

Cancer Cells

What Causes Abnormal Results

- There are different causes of an abnormal result:
  - Bacteria or yeast infections can cause cell changes that look abnormal. These changes can be treated and do not lead to cervical cancer
  - Most changes are caused by Human Papillomavirus (HPV)
- Most women who have an abnormal result **DO NOT** develop cervical cancer

What happens after an abnormal result?

- *This depends on what type of abnormal test you have*:

RESULTS	WHAT TO EXPECT
Low Grade (Minor changes on Pap Test)	Repeat Pap Test in 12 months
High Grade (Moderate/Severe changes on Pap Test)	Referral for Colposcopy Examination

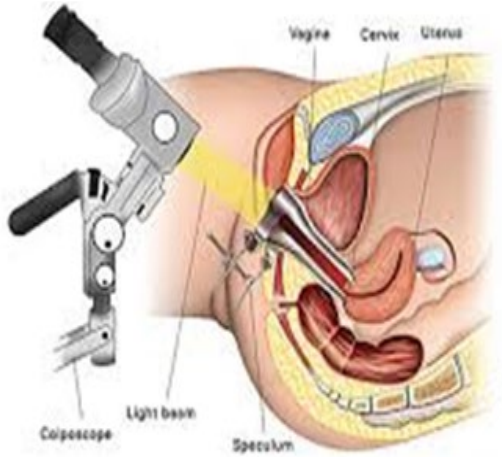


Fig.3 Colposcopy

kkh.com.sg
Screeningforlife.ca

After Colposcopy

- Low-grade abnormalities
  - Repeat Pap in several months or another Colposcopy
- If high-grade abnormalities are found treatment may be recommended
  - Most often these abnormalities can be treated successfully so cancer does not develop

Possible Treatment

- Laser Surgery – a laser beam destroys abnormal cells
- LEEP– a wire loop that removes a piece of tissue using an electric current
- Cone Biopsy– a cone shaped wedge of tissue is removed

Go for regular Pap Tests!

Women, as the givers of life have a responsibility to the Creator, themselves, their family and the community to maintain their physical, spiritual, emotional and mental well-being.

Screening for life .ca/chesterwomenshealth.com

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American College of Obstetricians and Gynecologists.(2023). *Updated Cervical Cancer Screening Guidelines. https://www.acog.org/clinical/clinical-guidance/practice-advisory/articles/2021/04/updated-cervical-cancer-screening-guidelines*