St. Jude Children's Research Hospital

HPV Cancer Prevention Program

From Prevention to Protection: Closing Gaps in HPV Vaccination and HPV Cancers in LGBTQ+ Communities

June 24, 2025

Learning Objectives

- Review current data showing differences in HPV vaccination and HPV cancers
- Discuss evidence-based interventions for LGBTQ+ populations
- Apply best practices to address access differences, improve HPV vaccination coverage among LGBTQ+ communities and discuss strategies to improve HPV vaccination coverage

Scout, PhD
(he/they)

MODERATOR

Executive Director

National LGBTQI+ Cancer Network

stjude.org/hpv • #EndHPVCancers

Presenters

Empowering and Strengthening Community, Culture and Connection to Prevent HPV Cancers

Kristen D. Krause, PhD
Assistant Professor, Department of Urban-Global Public Health and Deputy Director, Center for Health, Identity, Behavior and Prevention Studies (CHIBPS), Rutgers School of Public Health

Alan G. Nyitray, PhD
Associate Professor
Medical College of Wisconsin, Clinical Cancer Center

Jessica S. Wells, PhD
Associate Professor, Nell Hodgson Woodruff School of Nursing, Emory University and Assistant Director of Community Outreach & Engagement, Winship Cancer Institute

WELCOMING

UNSTOPPABLE

RESILIANCE

LOVE

stjude.org/hpv • #EndHPVCancers

Sharing Words of Meaning

Kristen D. Krause, PhD

(she/her/hers)

FEATURED PANELIST

Assistant Professor, Department of Urban-Global Public Health

Deputy Director, Center for Health, Identity, Behavior and Prevention Studies (CHIBPS)

Rutgers School of Public Health

stjude.org/hpv • #EndHPVCancers

RUTGERS HEALTH
Center for Health, Identity, Behavior and Prevention Studies
School of Public Health

Exploring HPV Vaccination Sentiments In LGBTQ Populations: Strategies for Improvement

Kristen D. Krause, PhD, MPH (She/Her/Hers)
Deputy Director, Center for Health, Identity, Behavior and Prevention Studies (CHIBPS)
Assistant Professor, Department of Urban-Global Public Health
Rutgers School of Public Health

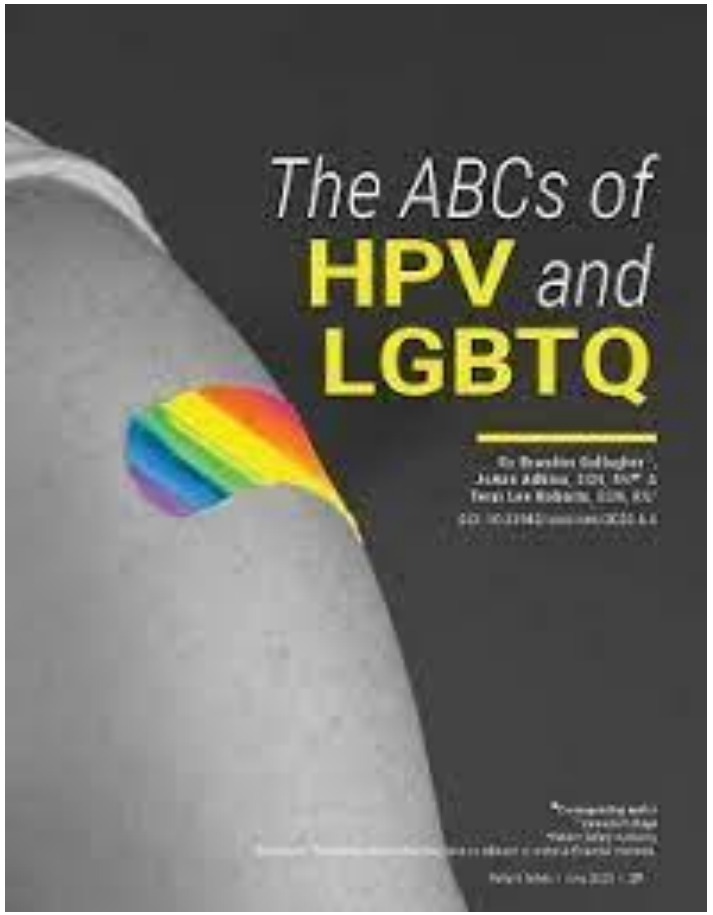
RUTGERS HEALTH

Funding Declaration

- Some of this research was funded by grants from the National Institute on Drug Abuse (1R01DA0225537; 2R01DA025537) and the National Institute of Allergy and Infectious Diseases (R01AI132020; R56AI122000).
- Other parts of this research is supported in part by a research grant from Investigator Initiated Studies Program of Merck Sharp & Dohme Corp./MSD K.K. The opinions expressed in this presentation are those of the authors and do not necessarily represent those of Merck Sharp & Dohme Corp.

RUTGERS HEALTH

HPV in LGBTQ Populations



RUTGERS HEALTH

Reason for Concern

- HPV: > 150 strains
- Etiologic agent behind myriad clinical manifestations:
  - Anogenital and Plantar Warts
  - Penile, Anal, and Oropharyngeal Cancers
  - Head & Neck Cancers
- Approx. 37,000 HPV-related Cancer Diagnoses/Year

HPV Type	Risk	Clinical Importance
16 & 18	High	Responsible for >90% of HPV-related Cancers
31, 33, 35, 39, 45, 51, 52, 56, 58, and 59	Intermediate	Oncogenic
6 & 11	Low	Anogenital Warts

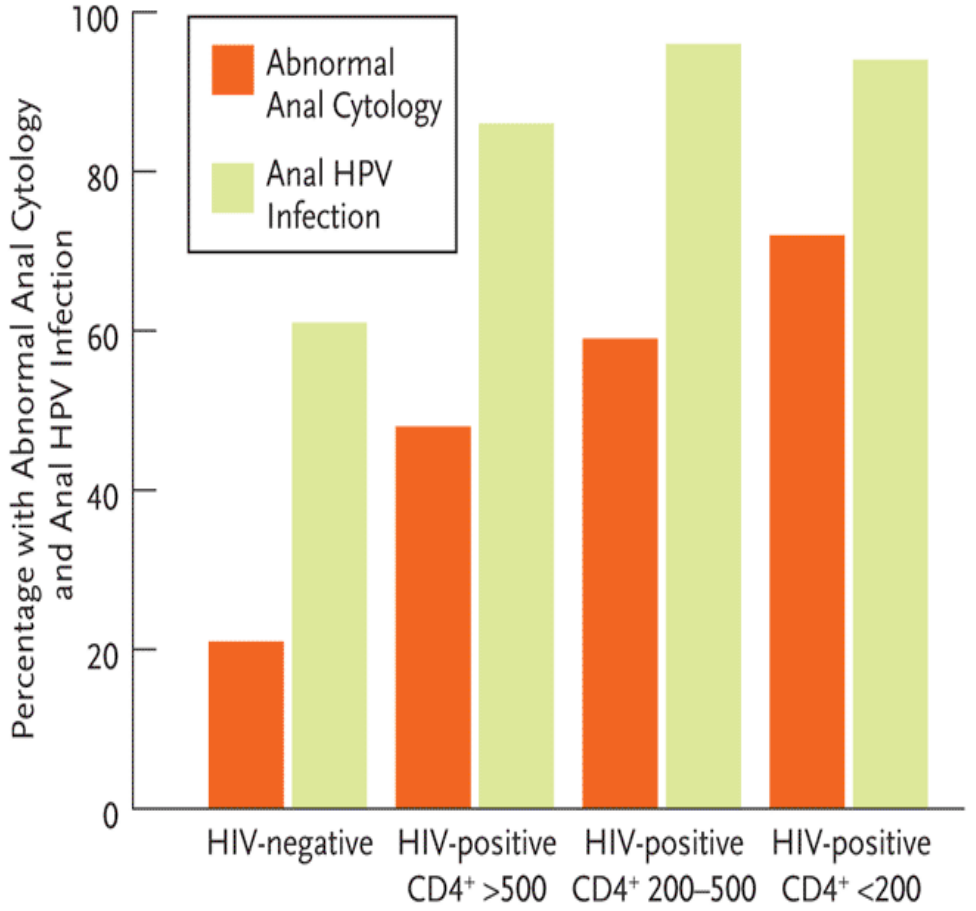
Goldstone et al. "Prevalence of and risk factors for human papillomavirus (HPV) infection among HIV-seronegative men who have sex with men." Journal of infectious Diseases 203.1 (2011): 66-74.

RUTGERS HEALTH

HPV & Cancer in Sexual Minority Men

- SMM are at heightened risk of anal cancer due to HPV infection
- Risk increases in HIV+ SMM
  - 1/3 of HIV+ SMM infected with HPV 16 (Laila et al. 2013)
  - HIV+ SMM 5x more likely to develop cancer than HIV- SMM (D'Souza et al. 2008)
- Better understanding of anal cancer development and screening among SMM is warranted

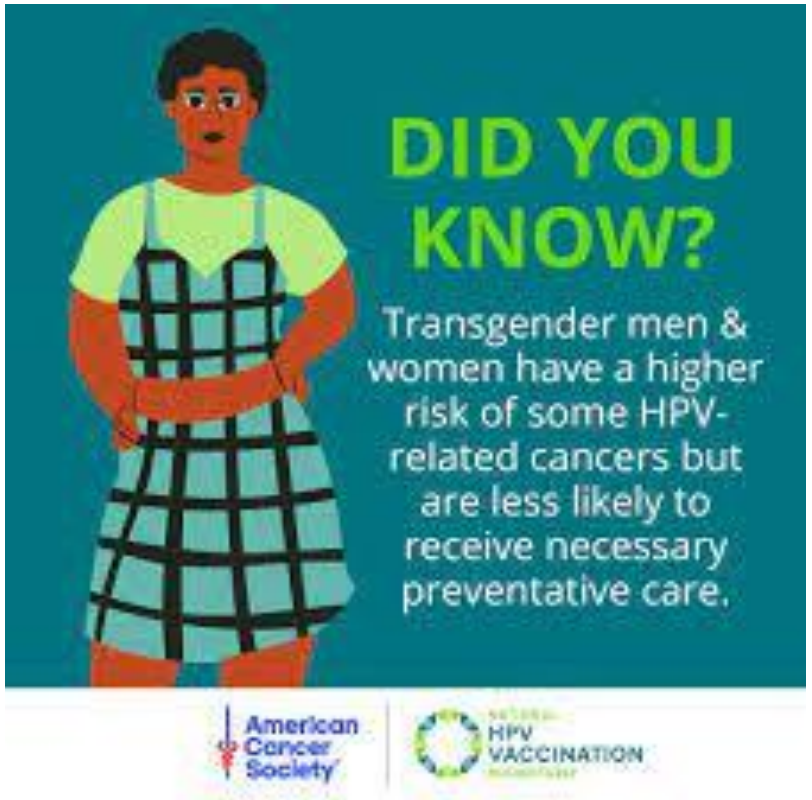
Figure 7. Percentage of HIV-positive and HIV-negative MSM with Anal HPV Infection and Abnormal Anal Cytology



Palefsky et al.

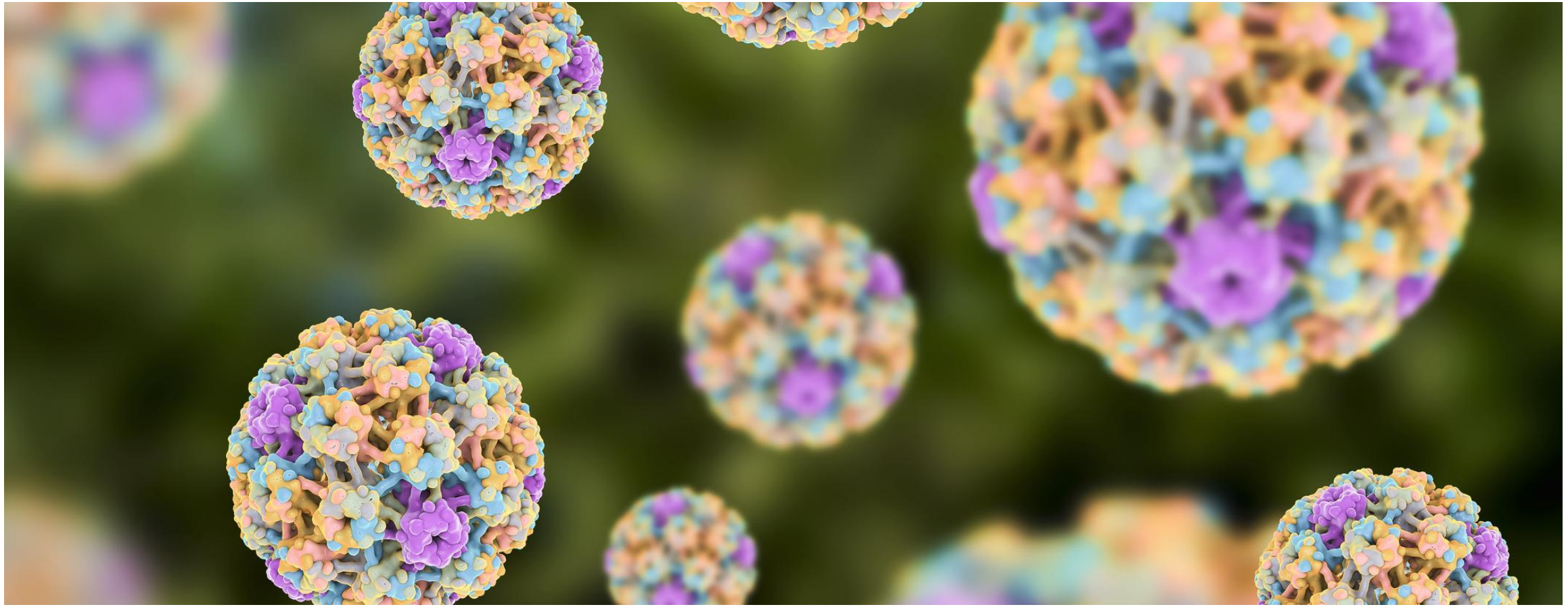
HPV in Transgender Populations

- Reported prevalence of high-risk HPV in sexually active transgender women is 8% to 20% and of HPV-related dysplasia (Lang et al., 2024)
- Other studies have demonstrated high levels of HPV, but low levels of HPV-related knowledge (Singh et al. 2019)

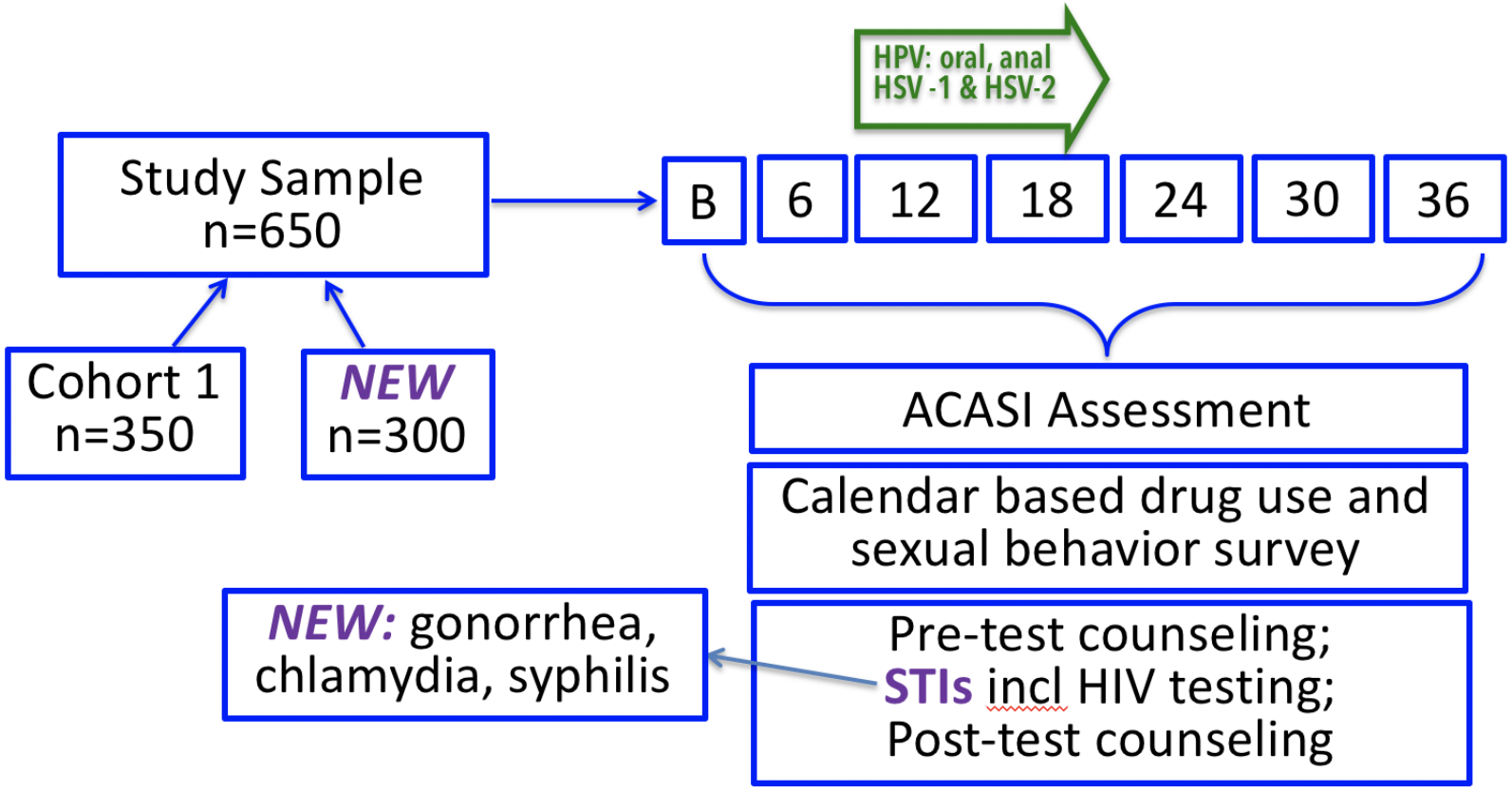


RUTGERS HEALTH

Findings From P18 Viral Study



P18 v2.0 - VIRAL

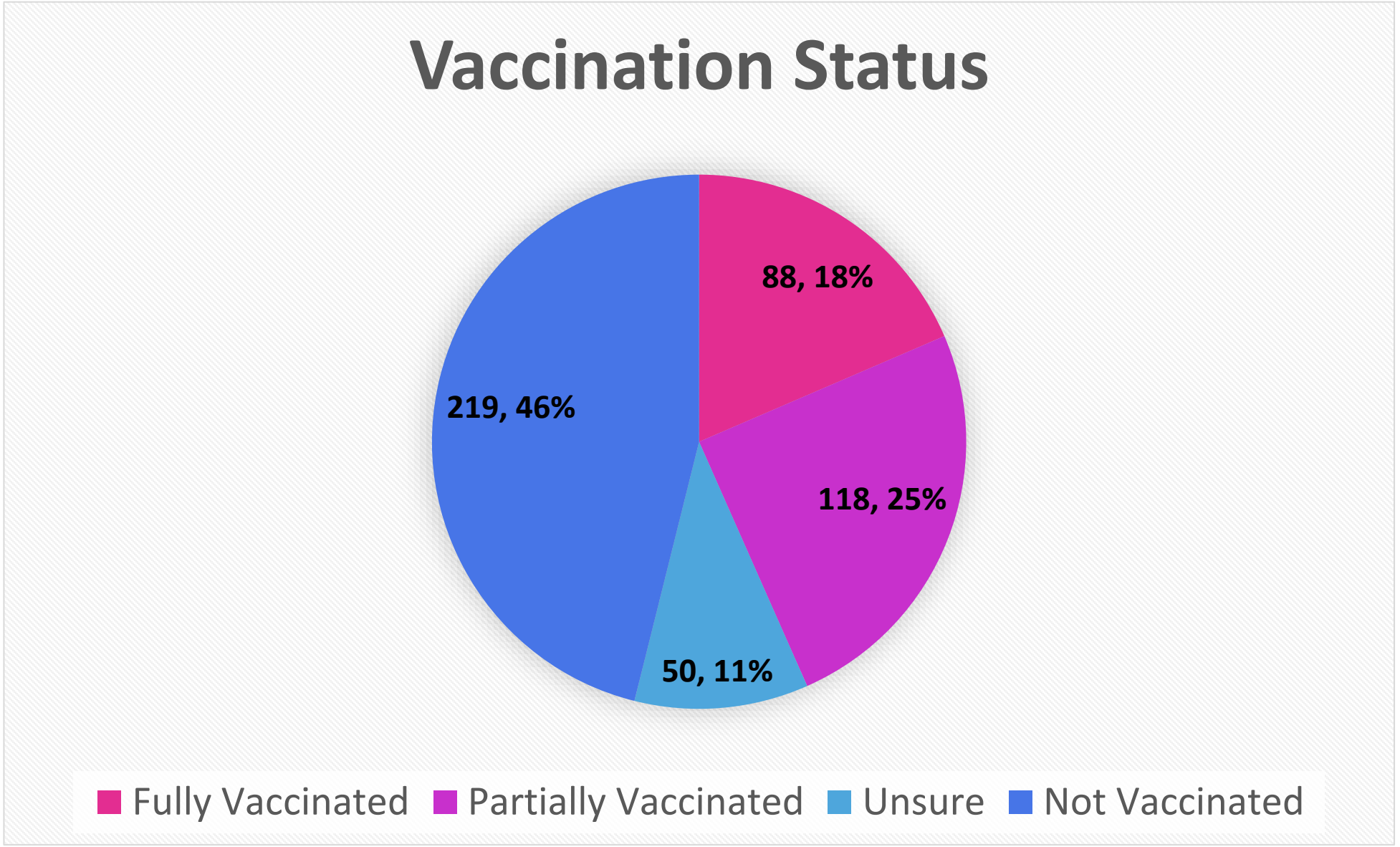


RUTGERS HEALTH

Qualitative Component

- N=40
- 6 Questions targeting HPV and HPV Vaccine knowledge in young SMM
  - Tell me what you know about the human papillomavirus (HPV).
  - Tell me about your experiences with HPV vaccination.

RUTGERS HEALTH



Halkitis, P.N., Valera, P., LoSchiavo, C., Goldstone, S.E., Kantzanou, M., Maiolatesi, A.J., Ompad, D. Greene, R., Barton, S., & Kapadia, F. (2019). Human papillomavirus vaccination and infection in young sexual minority men: The P18 Cohort Study. *AIDS Patient Care and STDs.*

Vaccination Barriers: Qualitative Examples

- **Cost**: "the cost… was also prohibitive because I have insurance but I was told I was going to have to pay something like **$250** for the vaccination"
- **Medical Mistrust**: "I haven't gotten it [*vaccine]* because **I personally don't really trust a lot of medicines**"
- **Female Focus**: "**It [*vaccine*] was really just marketed at young girls**. Like protect your daughters from cervical cancer, get the HPV vaccine"

Jaiswal J, LoSchiavo C, Maiolatesi A, Kapadia F, Halkitis PN. Misinformation, Gendered Perceptions, and Low Healthcare Provider Communication Around HPV and the HPV Vaccine Among Young Sexual Minority Men in New York City: The P18 Cohort Study. J Community Health. 2020 Aug;45(4):702-711.

RUTGERS HEALTH

HPV Risk Knowledge: Qualitative Examples

- **Gendered Risk**: "**The virus only targets woman**, even if a man got it, it wouldn't affect them"
- **Gender of Sexual Partners**: "… it's just like if you're gay are you gonna sleep with women? If you're not, then you **don't have to worry**."
- **Female Cancers**: "I know that it [*HPV]* increases certain types of cancer… **it [*HPV]* increases forms of cancer associated with the female reproductive system**."

Jaiswal J, LoSchiavo C, Maiolatesi A, Kapadia F, Halkitis PN. Misinformation, Gendered Perceptions, and Low Healthcare Provider Communication Around HPV and the HPV Vaccine Among Young Sexual Minority Men in New York City: The P18 Cohort Study. J Community Health. 2020 Aug;45(4):702-711.

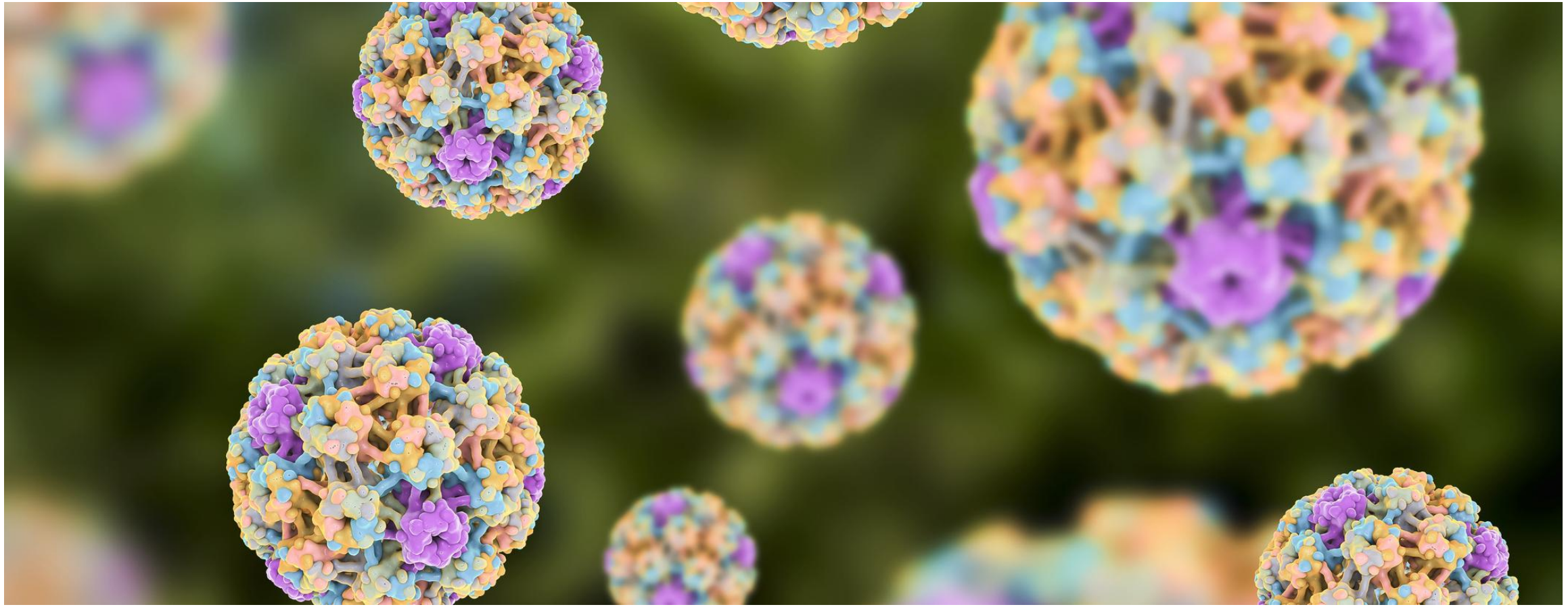
RUTGERS HEALTH

Low HPV Vaccine Uptake in SMM: Why?

- Less than 20% of the sample (n=88) completed recommended HPV vaccine series
  - Steady distribution of HPV exposure along sociodemographic continuum
    - HPV exposure not dependent on access
  - Assumed Driver: Lack of HPV education
    - Modes of transmission, symptomology, and cancer risk
    - Vaccine information
    - Historic female focus towards HPV & HPV Vaccine

RUTGERS HEALTH

Findings From Qvax



RUTGERS HEALTH

Select Findings From Qvax Study

Vaccine Type	% (n)
Human Papilloma Virus (HPV)	
Fully/Partially Vaccinated	54.4 (418)
Not Vaccinated	32.3 (248)
Missing	13.3 (102)
Hepatitis A	
Fully/Partially Vaccinated	59.8 (459)
Not Vaccinated	15.1 (116)
Missing	25.1 (193)
Hepatitis B	
Fully/Partially Vaccinated	63.0 (484)
Not Vaccinated	12.9 (99)
Missing	24.1 (185)
Meningitis B	
Fully/Partially Vaccinated	63.7 (489)
Not Vaccinated	15.0 (115)
Missing	21.4 (164)
Influenza Before COVID 19	
Fully/Partially Vaccinated	70.3 (540)
Not Vaccinated	25.7 (197)
Missing	4.0 (31)
Influenza During COVID 19 (2020-2021)	
Fully/Partially Vaccinated	70.2 (539)
Not Vaccinated	26.2 (201)
Missing	3.6 (28)
COVID-19	
Fully/ Partially Vaccinated	99.2 (762)
Not Vaccinated	0.8 (6)
Missing	-
RZV (Participants ≥ 50, n = 116)	
Fully Vaccinated/ Partially	63.8 (74)
Not Vaccinated	32.8 (38)
Missing	3.4 (4)

Krause KD, D'Avanzo PA, Karr AG, Rhem C, Halkitis PN. Vaccination uptake in LGBTQ adults in two US states: Findings from the QVax study. Vaccine. 2024 Dec 2;42(26):126320.

RUTGERS HEALTH

Reasons for not getting the three full doses of the HPV vaccine

- I forgot to get the additional doses (n=35)
- I am not of the age for when this vaccine is recommended (n=108)
- I didn’t know about this vaccine (n=40)
- I didn’t think I needed this vaccine (n=77)
- I didn’t think I was eligible to receive this vaccine (n=67)
- I didn’t have insurance or money to pay for this vaccine (n=19)
- I have concerns about the effectiveness of this vaccine (n=20)
- I have concerns about the safety of this vaccine (n=23)

RUTGERS HEALTH

QVax Findings: HPV

- The strongest predictor of HPV vaccination was age, with participants who were 30-39 having approximately 76% lower odds ($p<0.001$) and those aged 40-49 and 50+ years old having over 90% lower odds ($p<0.001$) of being vaccinated compared to those who were 18-29 years old.
- In adjusted models, cisgender women were 80% more likely ($p=0.034$) to be vaccinated compared to their cisgender male counterparts. Additionally, transgender men had 2.69 times the odds of being vaccinated for HPV ($p=0.019$).

Krause KD, D'Avanzo PA, Karr AG, Rhem C, Halkitis PN. Vaccination uptake in LGBTQ adults in two US states: Findings from the QVax study. Vaccine. 2024 Dec 2;42(26):126320.

RUTGERS HEALTH

General Next Steps

- Our findings demonstrate the need for age-appropriate vaccination campaigns, especially as implementation guidelines change and the age range for many vaccinations expands to include older adults.

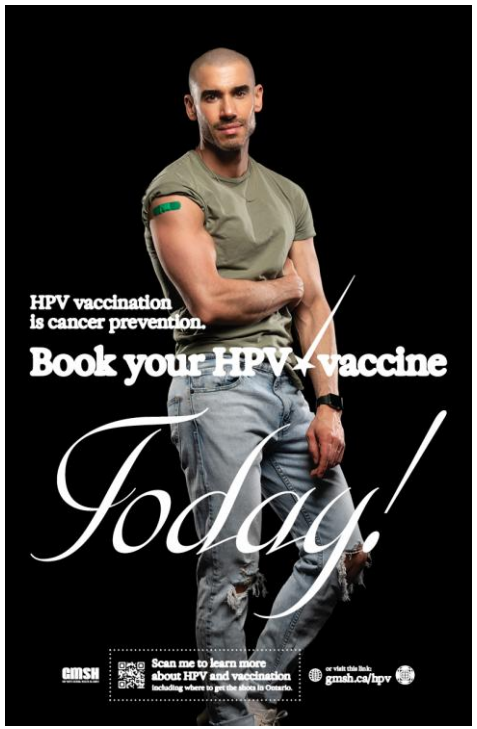
- There also remains a need to increase awareness around the importance of vaccination for sub-groups of the LGBTQ+ community at higher risk for certain vaccine preventable diseases

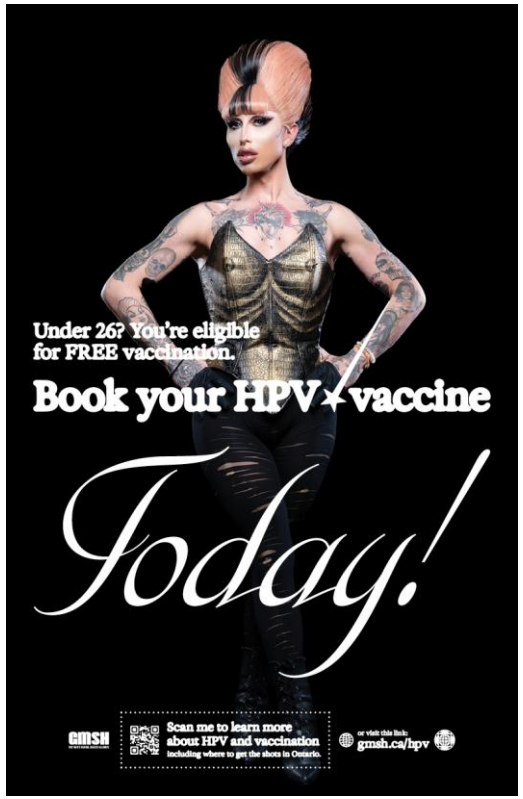
RUTGERS HEALTH

Actionable Recommendations

1) Create a Welcoming Environment
2) Collect Sexual Orientation and Gender Identity (SOGI) data on intake forms
3) Staff and Provider Training on HPV and HPV-related cancers
4) Peer and Patient Storytelling to Combat Stigma and Misinformation

RUTGERS HEALTH





RUTGERS HEALTH

Acknowledgements

- Center for Health, Identity, Behavior, and Prevention Studies
  - Dr. Perry N. Halkitis
  - Research Assistants, Research Interns, and our CHIBPS Research Coordinator, Kendra Lewis

RUTGERS HEALTH

www.chibps.org

kristen.krause@rutgers.edu

Jessica S. Wells, PhD

(she/her/hers)

FEATURED PANELIST

Associate Professor, Nell Hodgson Woodruff School of Nursing, Emory University and

Assistant Director of Community Outreach & Engagement, Winship Cancer Institute

stjude.org/hpv • #EndHPVCancers

THE CHAMPS STUDY: A MULTILEVEL STUDY TO ADVANCE HPV VACCINATION AMONG HIV+ ADULTS

Jessica Wells, PhD, RN, WHNP-BC, FAAN

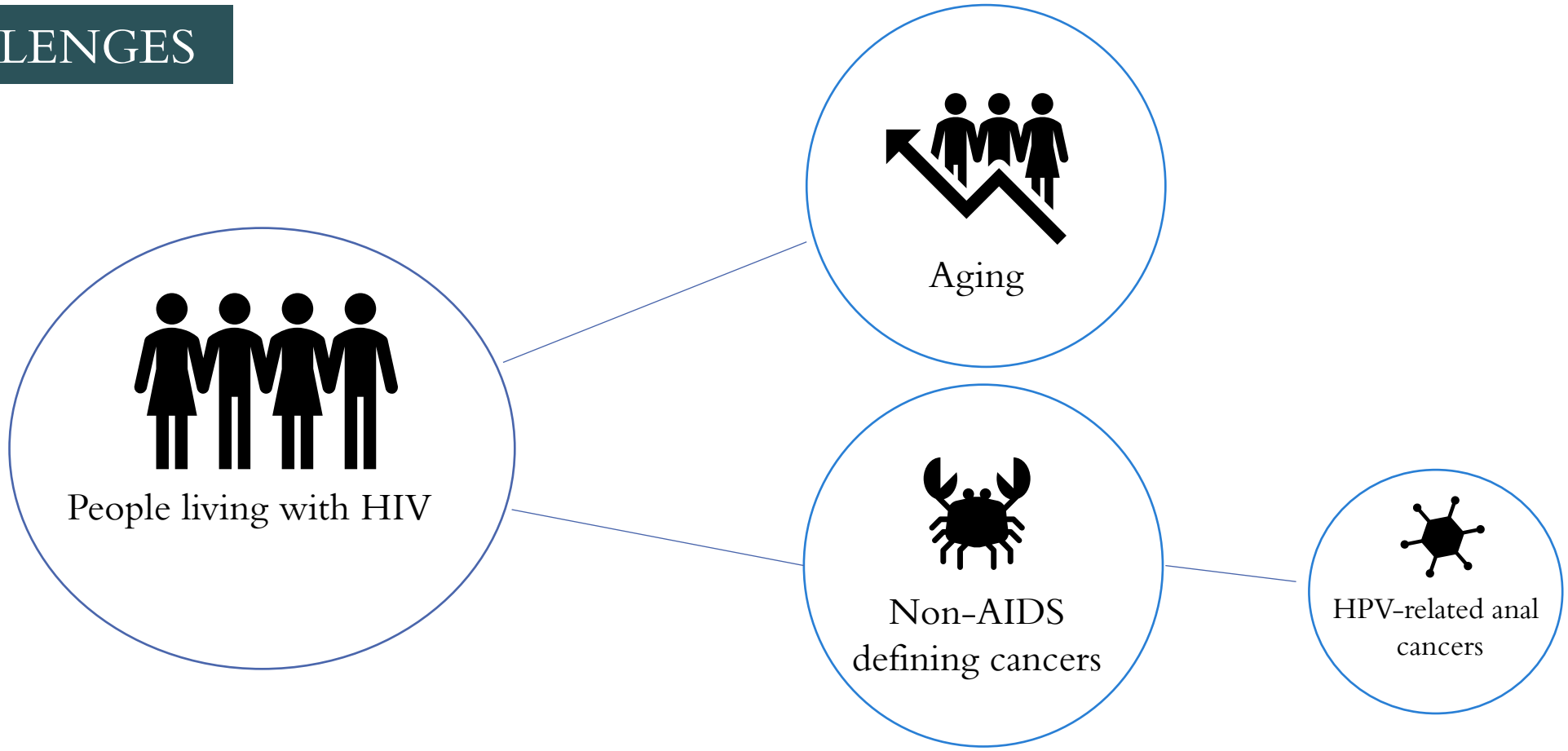
Associate Professor, Nell Hodgson Woodruff School of Nursing

Assistant Director, Community Outreach and Engagement

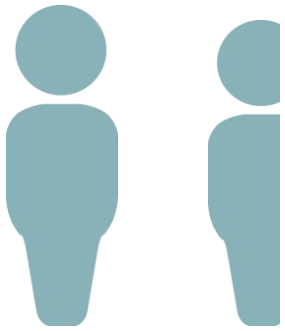
Winship Cancer Institute

Emory University

NEW CHALLENGES



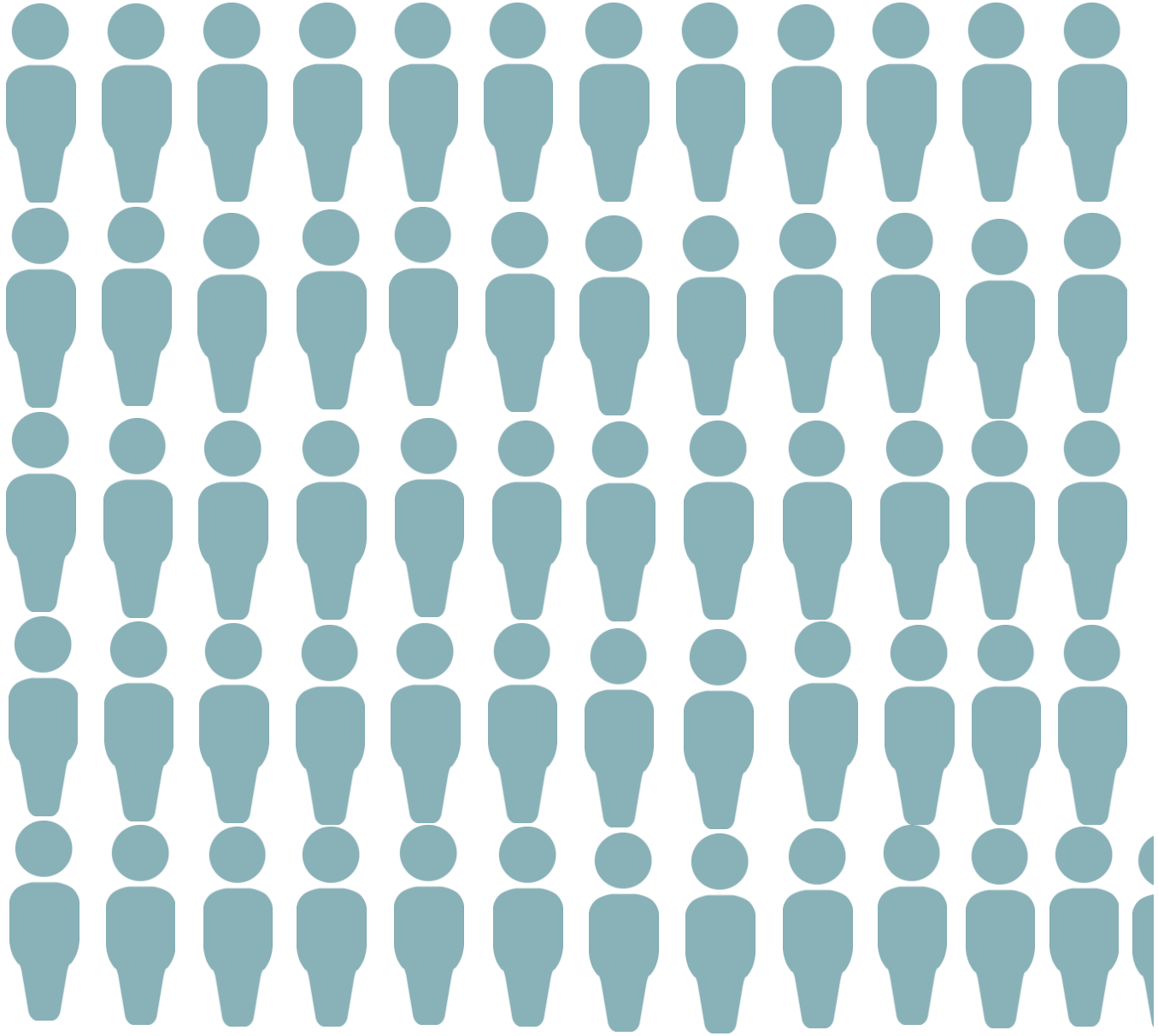
ANAL CANCER IN THE GENERAL POPULATION IS A RARE DISEASE.



1.8 cases per 100,000 in the general population.

- People living with HIV have a significantly higher incidence of anal cancer.
- HIV + MSM carry the highest burden of anal cancer cases.

60.1 new cases per 100,000 HIV+ men and women



MJ Silverberg, et al. Cumulative Incidence of Cancer Among Persons With HIV in North America. *Annals of Medicine*, Oct. 6, 2015.

THE HUMAN PAPILLOMAVIRUS (HPV) ACCOUNTS FOR 90% OF ANAL CANCERS

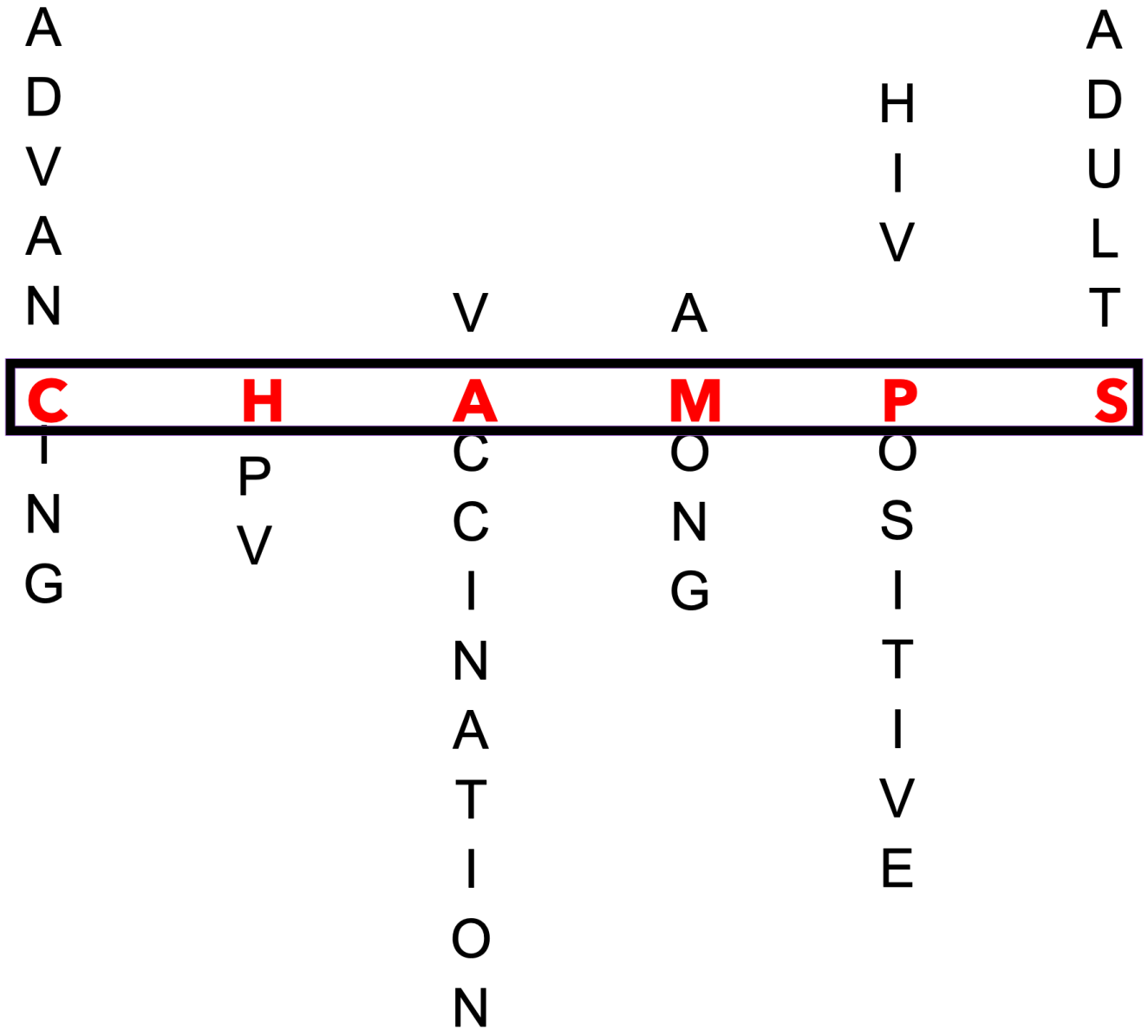
HIV and HPV co-infection is common.

Anal HPV more prevalent than cervical HPV in HIV+ women

HIV+ individuals more likely to have persistent HPV infection

Chin-Hong PV, Palefsky JM. Human papillomavirus anogenital disease in HIV-infected individuals. Dermatol Ther. 2005;18(1):67-76.
Palefsky JM, Holly EA. Immunosuppression and co-infection with HIV. JNCI Monographs. 2003;2003(31):41-46.

- The HPV vaccine is an effective and safe approach to prevent and reduce the risk of HPV-related disease among PLWH.
- Very limited research on uptake of HPV vaccine in HIV+ individuals.
- One study found vaccine initiation to be 13.4% with only <10% completing the series.
- HPV vaccine programs tailored and implemented in the PLWH are lagging for this high-risk group.
- The CDC's 4 PillarsTM Transformation Program is a multi-level, evidence-based intervention that has been successfully used to increase HPV vaccination in the general population.



Funding source: NIH/NINR R01NR020154 IRB#00002469 NCT 05065840

SPECIFIC AIMS

Aim 1

Tailor and refine the 4 PillarsTM program for implementation in rural and urban HIV clinics in Georgia

Aim 2

Test the effectiveness of the 4 PillarsTM program as measured by an increase in uptake rate in initiation of the HPV vaccine (primary endpoint) and vaccine completion (secondary endpoint) compared to historical baseline vaccination rate (control)

Aim 2.1

Identify mediators and potential moderators of the intervention effects on HPV vaccination;

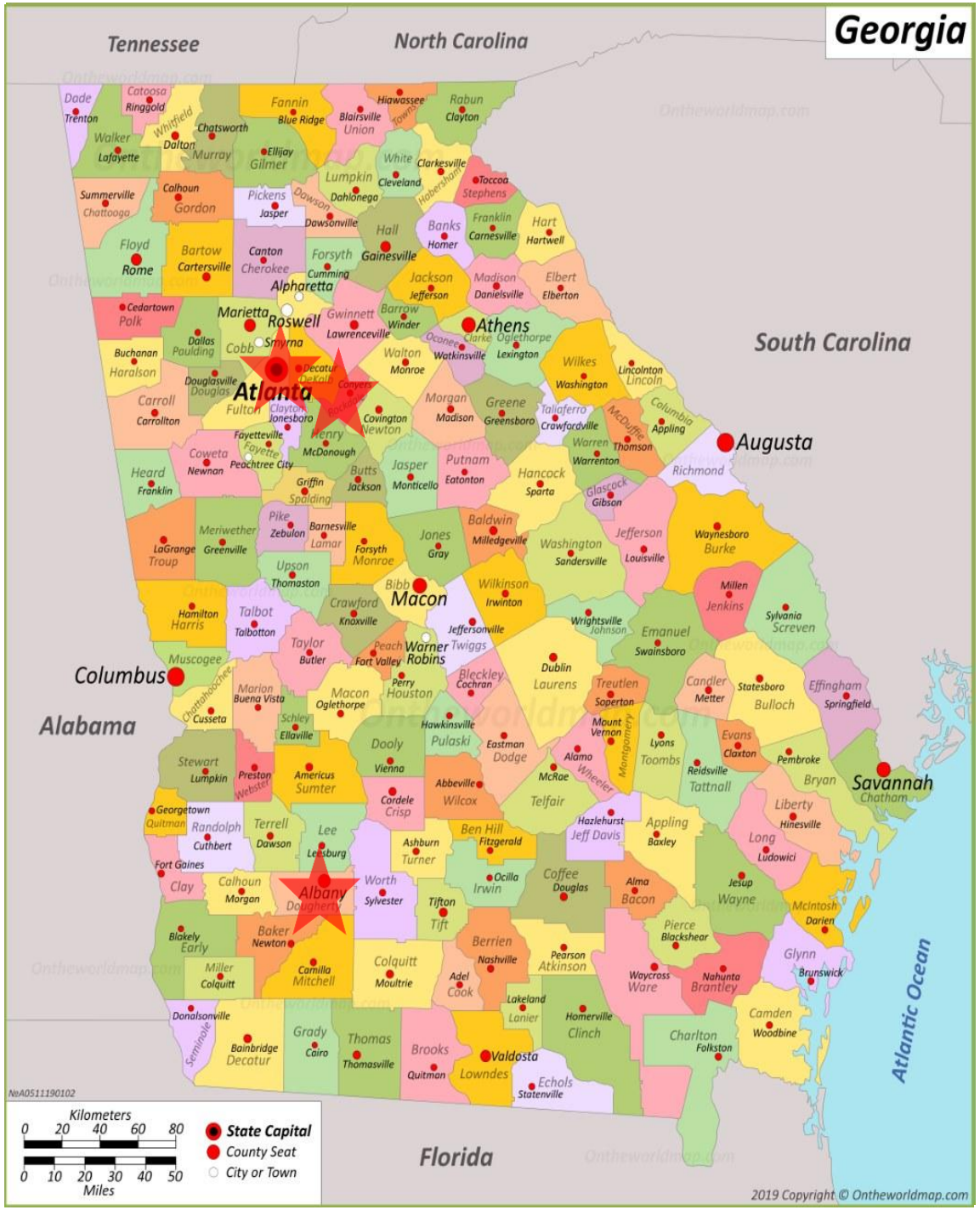
Aim 3

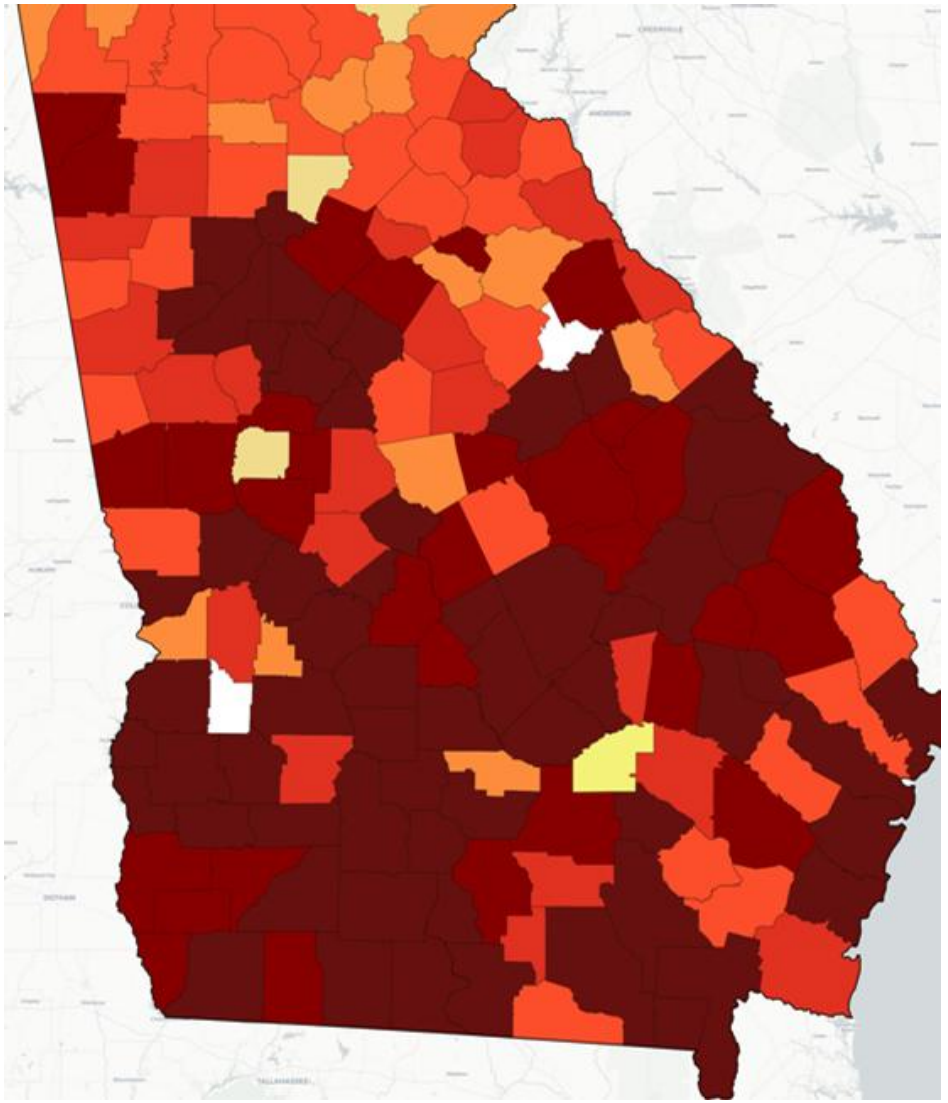
Assess the sustainability of the intervention in vaccine uptake post-intervention;

Aim 3.1

Assess scalability of the program for wider implementation via a future national RCT.

Target enrollment across 3 sites= 365 patients.





INTERVENTION: THE 4 PILLARS TRANSFORMATION PROGRAM™:

A TOOLKIT OF EVIDENCE-BASED STRATEGIES TO INCREASE ADULT IMMUNIZATIONS FROM PATIENT, PROVIDER, AND CLINIC PERSPECTIVES.

1. Convenience and Easy Access
2. Patient communication
3. Enhanced vaccination Systems
4. Motivation

INTERVENTION COMPONENTS

Patient

- Provide patient education on risk of HPV-related cancer and benefit of HPV vaccination
- Provide patient check-in, reminder, and motivation for HPV vaccine completion

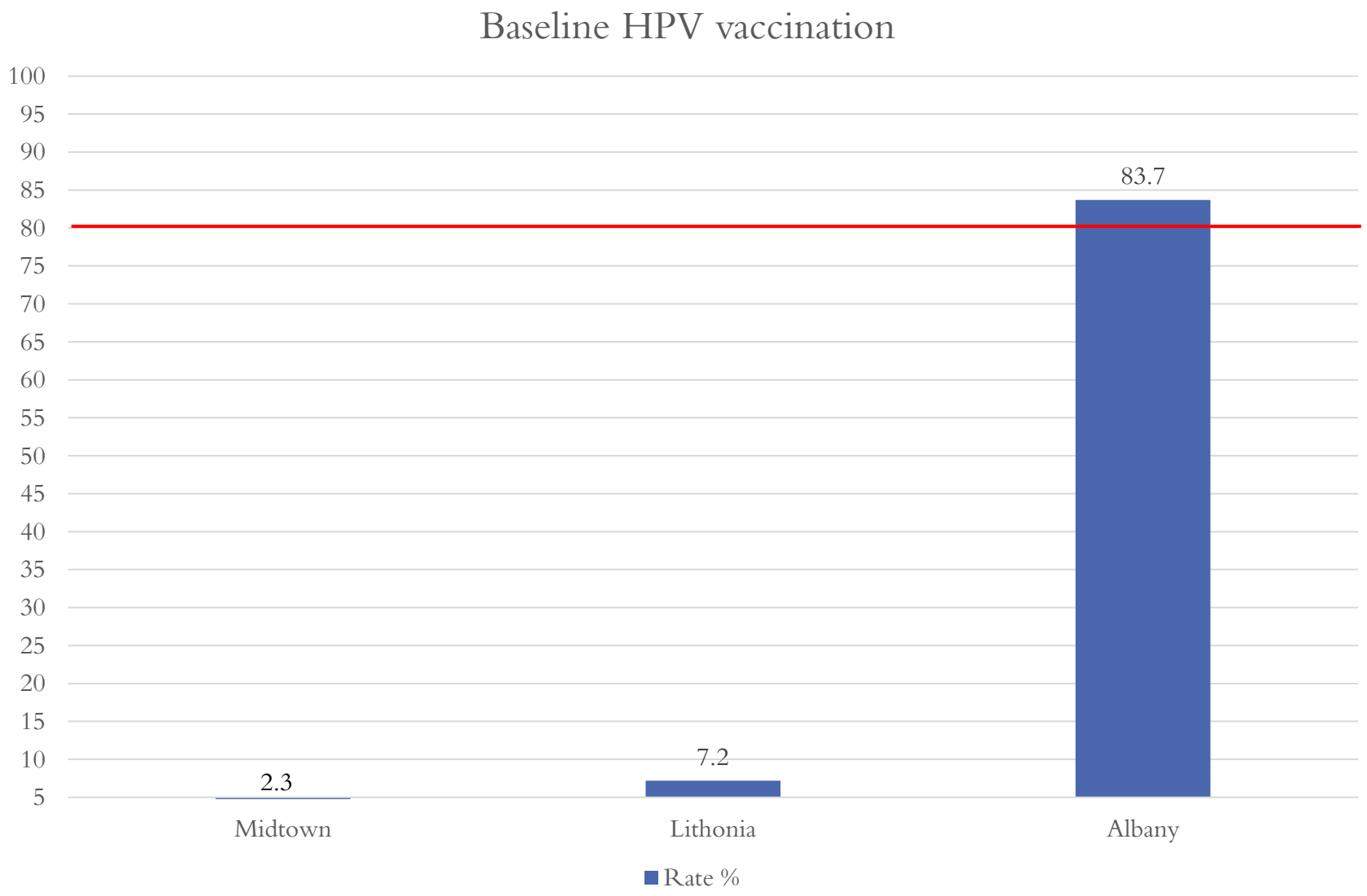
Provider

- Provider education on how to provide a strong quality recommendation
- Incorporate HPV vaccine recommendation with each clinic visit
- Administer HPV vaccination on-site
- Provider and clinic coaching and motivation of regularly track progress.

Clinic

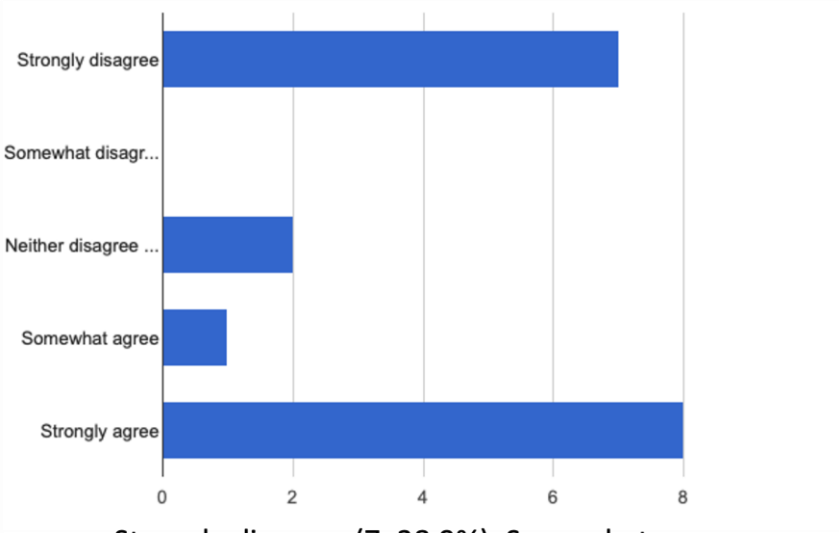
- Clinic-designated "Immunization Champion" for ongoing clinic encouragement and liaison to study team for intervention fidelity
- Document vaccination in EMR system/GRITS
- HPV vaccination standing orders

Baseline/Pre-Intervention Phase	Intervention Phase	Post-Intervention Phase
Study Aim 1	Study Aim 2	Study Aim 3
Baseline data of HPV vaccination uptake one-year pre intervention queried for each clinic. (Control phase)	Provider and clinic staff in-service training. Clinics designate an Immunization Champion.	Measure sustainability of program via reassessment of HPV vaccination rates at month 36 (12 months post-intervention).
Register clinics in 4 Pillars™ Program and GRITS.	Providers and clinic staff incorporate high-quality recommendation of the HPV vaccine into clinic practice.	Patient post-intervention evaluation.
Intervention refinement via provider and clinic staff focus groups.	Recruit patients; study provides education, an HPV recommendation, on-site HPV vaccination, motivational messaging and vaccination reminders via social media/text/email.	Provider and clinic staff post evaluations and focus group for post-intervention refinement for scale up.
Providers and clinic staff pre-intervention survey to assesses readiness and confidence.	HPV vaccination rate progress reports, intervention evaluation, and feedback sessions every 3 months for each clinic.	
	Assess HPV vaccination rates (i.e., percent change from baseline, percent of initiation, percent of completion) via EMR and GRITS.	


Baseline HPV vaccination
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
83.7
7.2
2.3
Midtown
Lithonia
Albany
Rate %

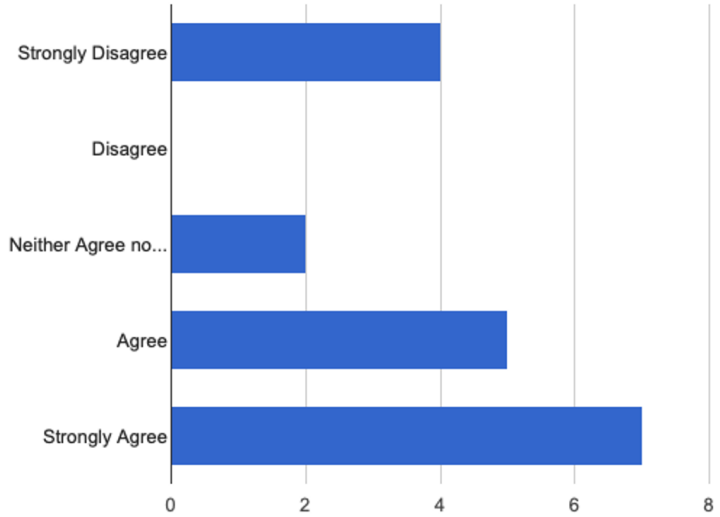
PROVIDERS PERCEPTIONS AND CLINIC READINESS

Improving HPV vaccination coverage is an important goal for my clinic.



Strongly disagree (7, 38.9%), Somewhat disagree (0, 0.0%), Neither disagree or agree (2, 11.1%), Somewhat agree (1, 5.6%), Strongly agree (8, 44.4%)

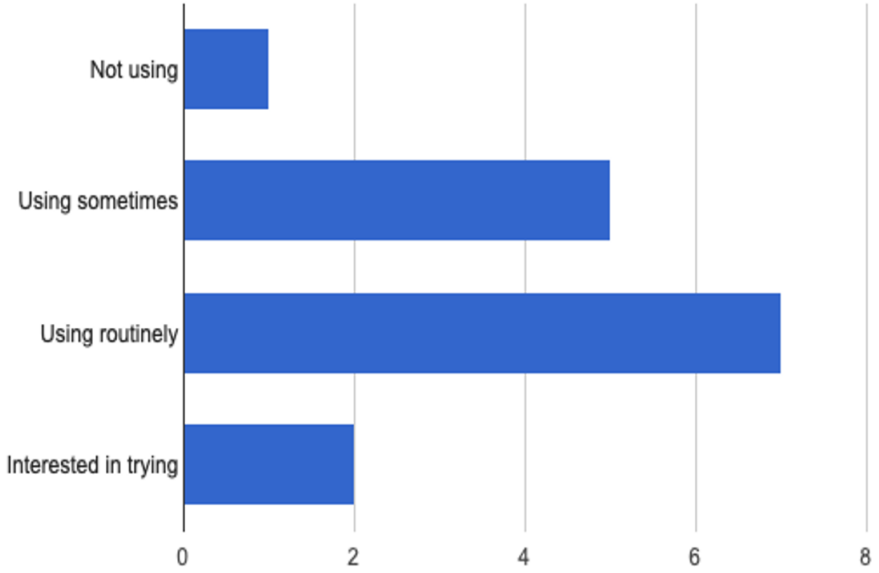
I feel confident my clinic can improve HPV vaccination coverage.



Strongly Disagree (4, 22.2%), Disagree (0, 0.0%), Neither Agree nor Disagree (2, 11.1%), Agree (5, 27.8%), Strongly Agree (7, 38.9%)

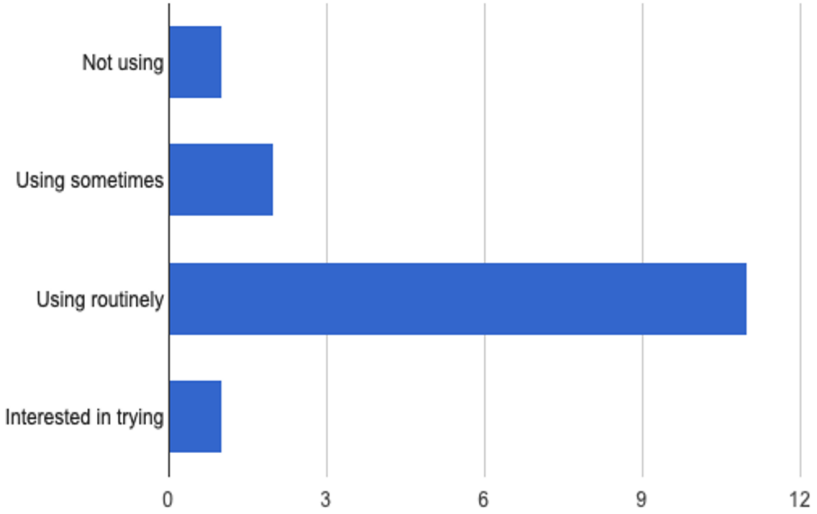
PROVIDERS PERCEPTIONS AND CLINIC READINESS

Vaccinate/offer routine vaccines at chronic and acute care visits



Not using (1, 6.7%), Using sometimes (2, 13.3%), Using routinely (11, 73.3%), Interested in trying (1, 6.7%)

Staff states that the physicians recommend vaccines.



Not using (1, 6.7%), Using sometimes (5, 33.3%), Using routinely (7, 46.7%), Interested in trying (2, 13.3%)

PROVIDERS PERCEPTIONS AND CLINIC READINESS

Although respondents mostly believed improving HPV vaccination is an important goal for their clinic, many respondents also disagreed to this goal.

The lack of consensus may be due to competing current clinic needs that may take precedence over HPV vaccination (i.e., COVID-19 and M-pox vaccination).

Yet, providers and clinic staff reported to offering and encouraging routine vaccination which may facilitate including HPV vaccination to routine HIV care.

INTERVENTION PHASE

- In-service training on how to provide a high-quality recommendation for the HPV vaccine.
  - Emphasize same day vaccination and administration of the vaccine at the clinic.
  - Vaccine Hesitancy
  - Patient access to the vaccine
- Clinic designated Immunization Champion
  - Encouragement and reminders to vaccinate
  - Assist with patient enrollment

THANK YOU!

QUESTIONS/ COMMENTS?

EMAIL: JHOLME3@EMORY.EDU

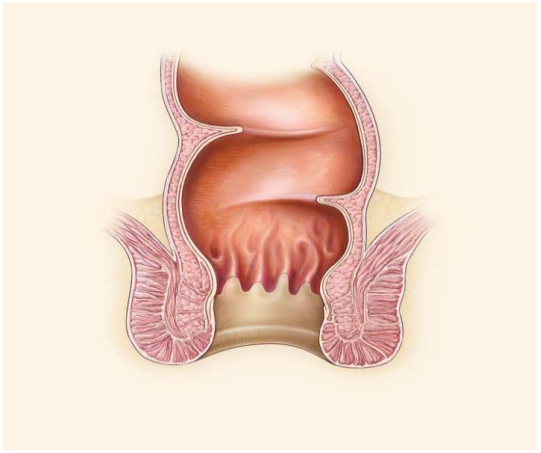
Alan G. Nyitray, PhD

(he/him/his)

FEATURED PANELIST

Associate Professor,

Medical College of Wisconsin, Clinical Cancer Center



Innovations in anal cancer screening

Alan G. Nyitray, PhD

St. Jude Children's Research Hospital

From Prevention to Protection: Closing Gaps in HPV Vaccination and HPV Cancers in LGBTQ+ Communities
Virtual presentation
24 June 2025

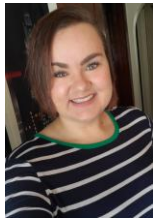
Financial disclosures

- National Institutes of Health, National Cancer Institute – Research funding
- Medical College of Wisconsin – Research funding and salary
- EUROGIN – Conference fees and lodging

MEDICAL COLLEGE OF WISCONSIN CANCER CENTER

Thanks to the Prevent Anal Cancer (PAC) Study participants and the Community Advisory Board

Bridgett Brzezinski
Cameron Liebert
Madison Humphry
Christopher Ajala
Esmeralda Lezama-Ruiz
Maritza Pallo



Dr Tim McAuliffe
Dr Michael Swartz
Dr Ashish Deshmukh
Dr Elizabeth Chiao
Dr Jenna Nitkowski

UTHealth
The University of Texas Health Science Center at Houston

The University of Texas MD Anderson Cancer Center
Making Cancer History®

MUSC
Medical University of South Carolina
Hollings Cancer Center
An NCI-Designated Cancer Center

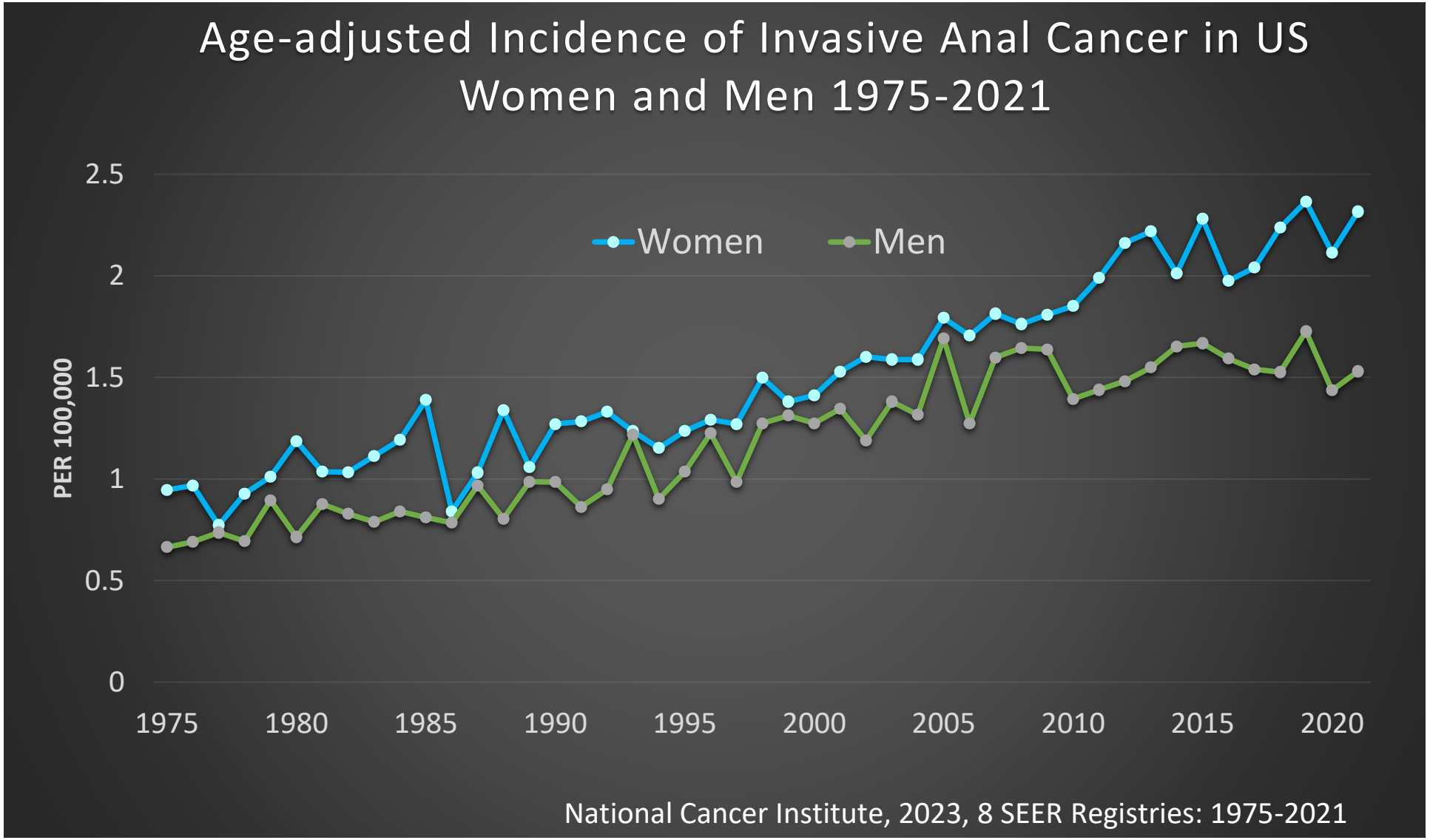
Medical College of Wisconsin
Cancer Center

Overview

- Prevent Anal Cancer (PAC) studies results
  - Self-swab Study
  - Palpation Study

MEDICAL COLLEGE OF WISCONSIN CANCER CENTER

Anal cancer is caused by HPV and incidence is increasing



MEDICAL COLLEGE OF WISCONSIN CANCER CENTER

Anal cancer risk scale

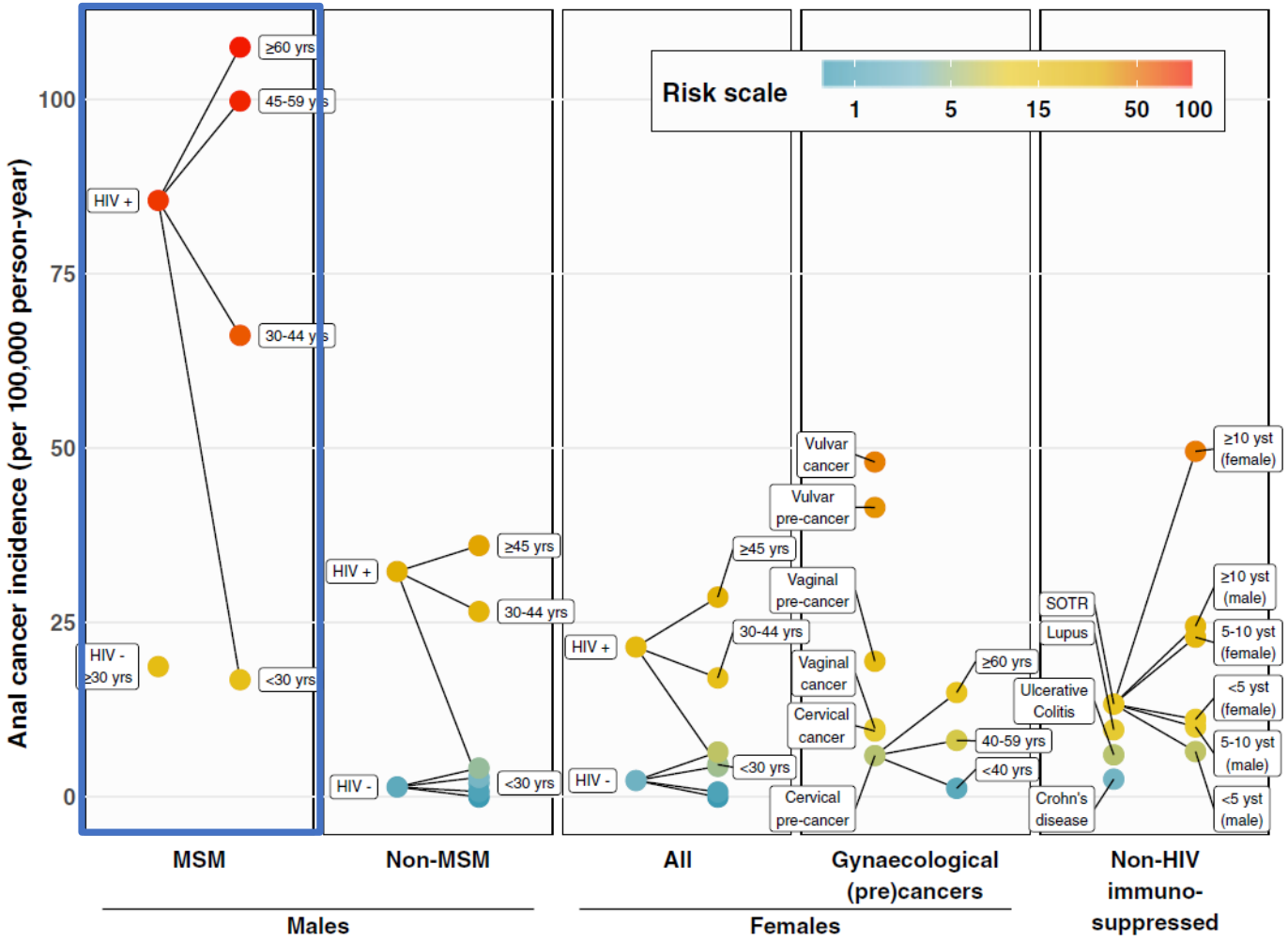


FIGURE 5 Anal cancer risk scale. 95% CIs around the point estimates can be found in the relevant Figures 1-4 and Tables S1 and S2. Estimates for HIV-negative men and men are shown, without labels, for age-groups <30, 30 to 44, 45 to 59, and ≥60 years (see Section 3). CI, confidence interval; MSM, men who have sex with men; MSW, men who have sex with women. yrs, years old; yst, years since transplant

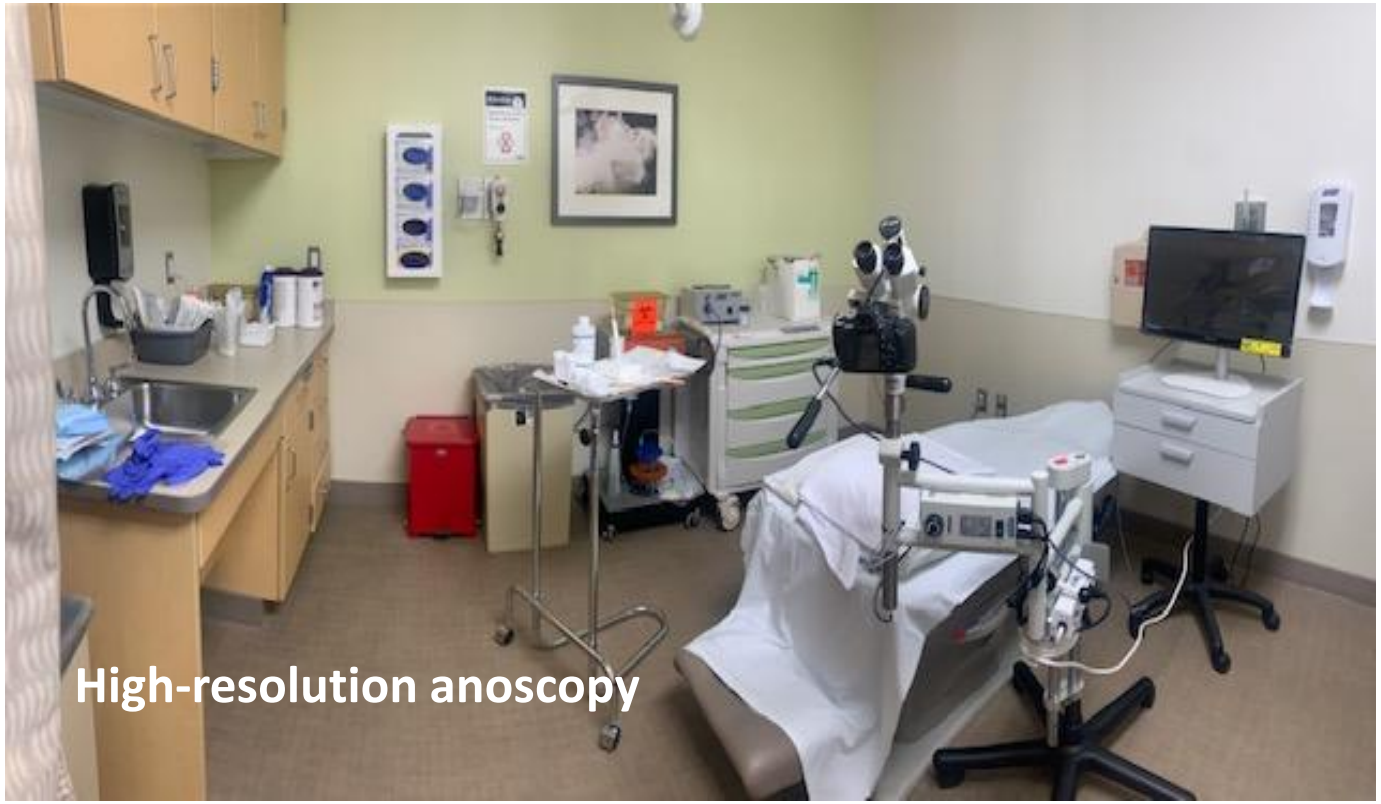
Clifford et al. 2020. Int J Cancer

MEDICAL COLLEGE OF WISCONSIN CANCER CENTER

Anal cancer screening (recommended for first time in 2024)

The general procedures for anal precancer screening.

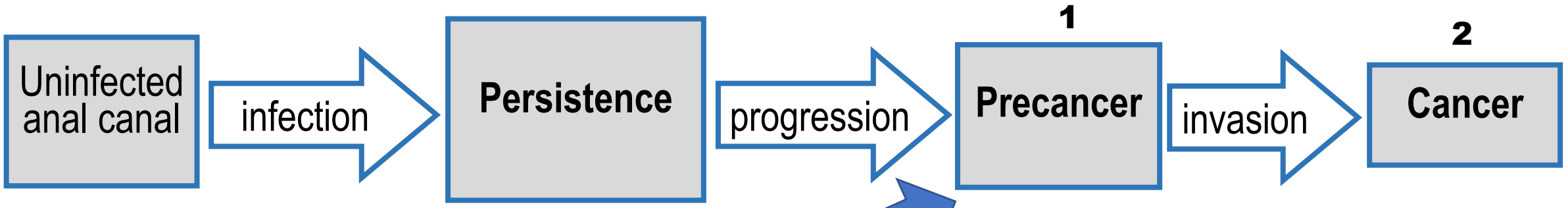
- Digital anal rectal examination (DARE)
- Cytology and/or HPV testing, then high-resolution anoscopy from a skilled HRA provider



High-resolution anoscopy

The HRA provider looks for anal precancers.

Intervening at two points in the natural history of anal human papillomavirus



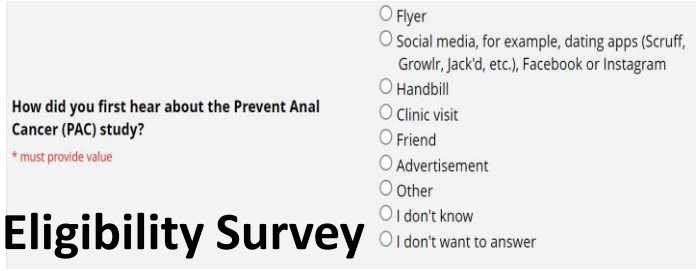
PAC Studies

PAC Self-Swab/Milwaukee

Prevention of invasion

Do sexual minority men and transgender women prefer home-based self-sampling or clinician sampling?

PAC Self-Swab Study Activities



Baseline activities
Online survey

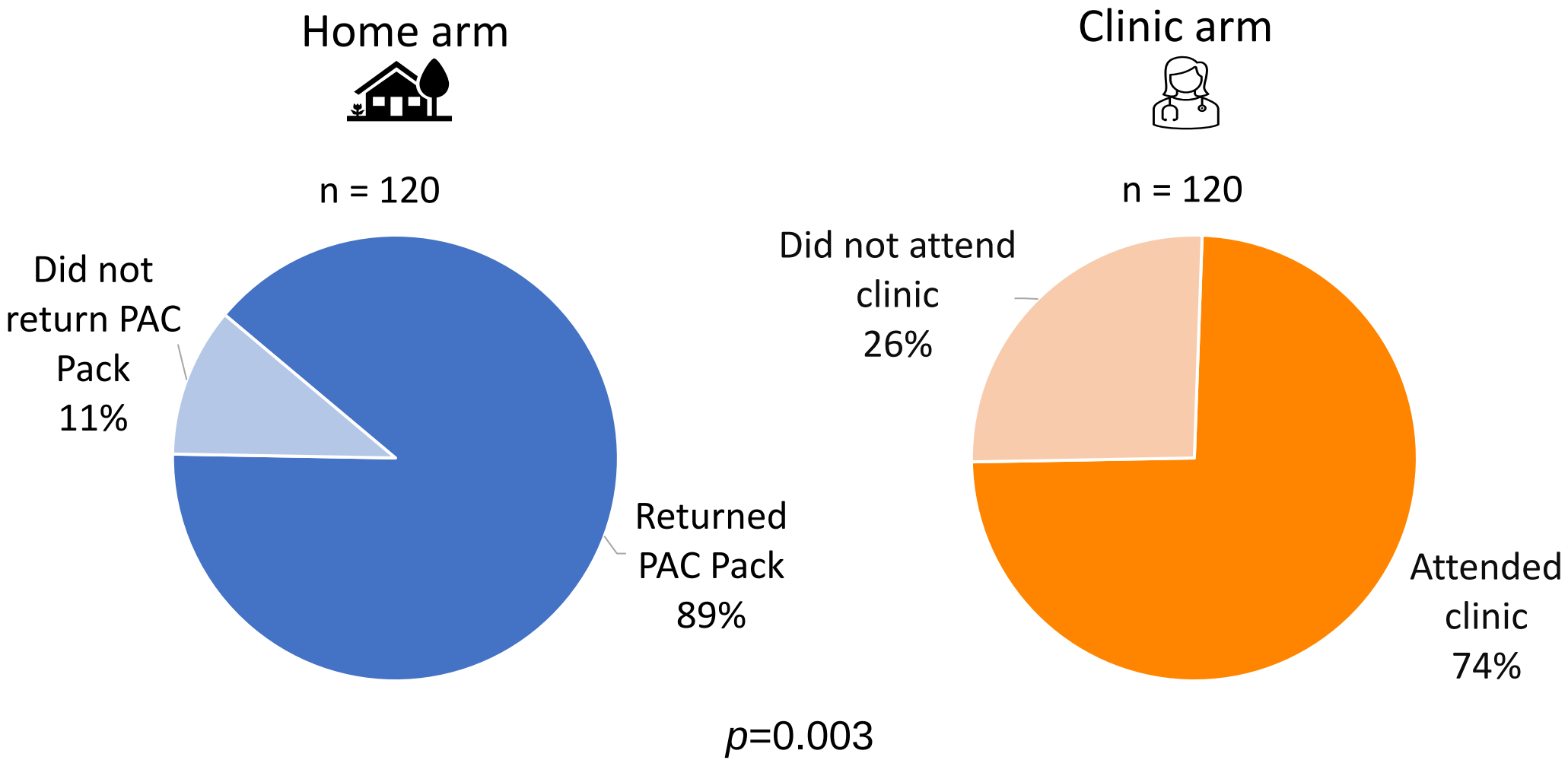
Randomization
1. Home-based self-swabbing
2. Clinician swabbing

All swabs assessed for adequacy for **HPV genotyping**

12-month activities
Repeat swabbing

Final activity

Screening engagement by study arm – ITT analysis

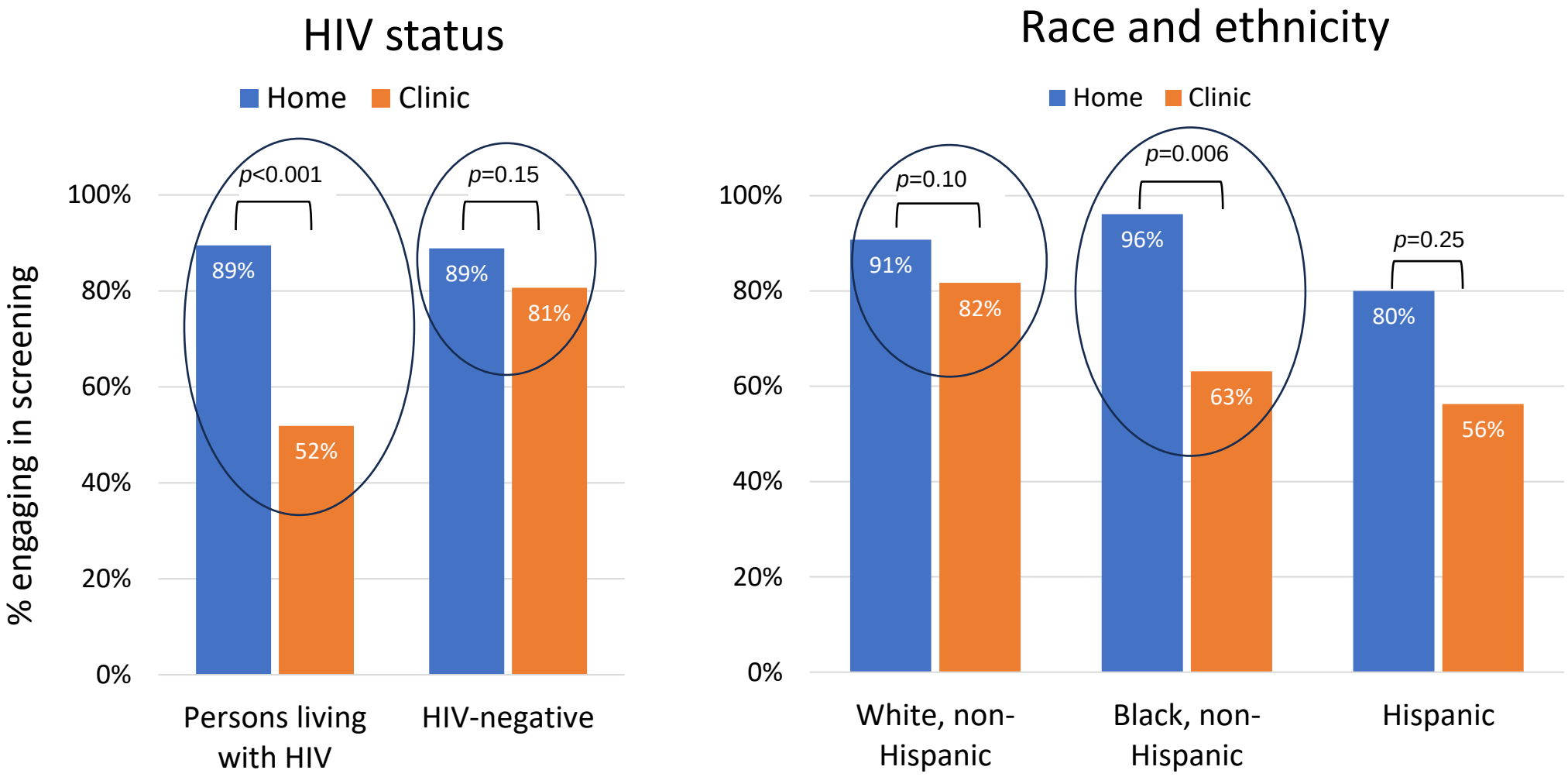


p=0.003

Nyitray et al. 2023. Int J Cancer.

MEDICAL COLLEGE OF WISCONSIN CANCER CENTER

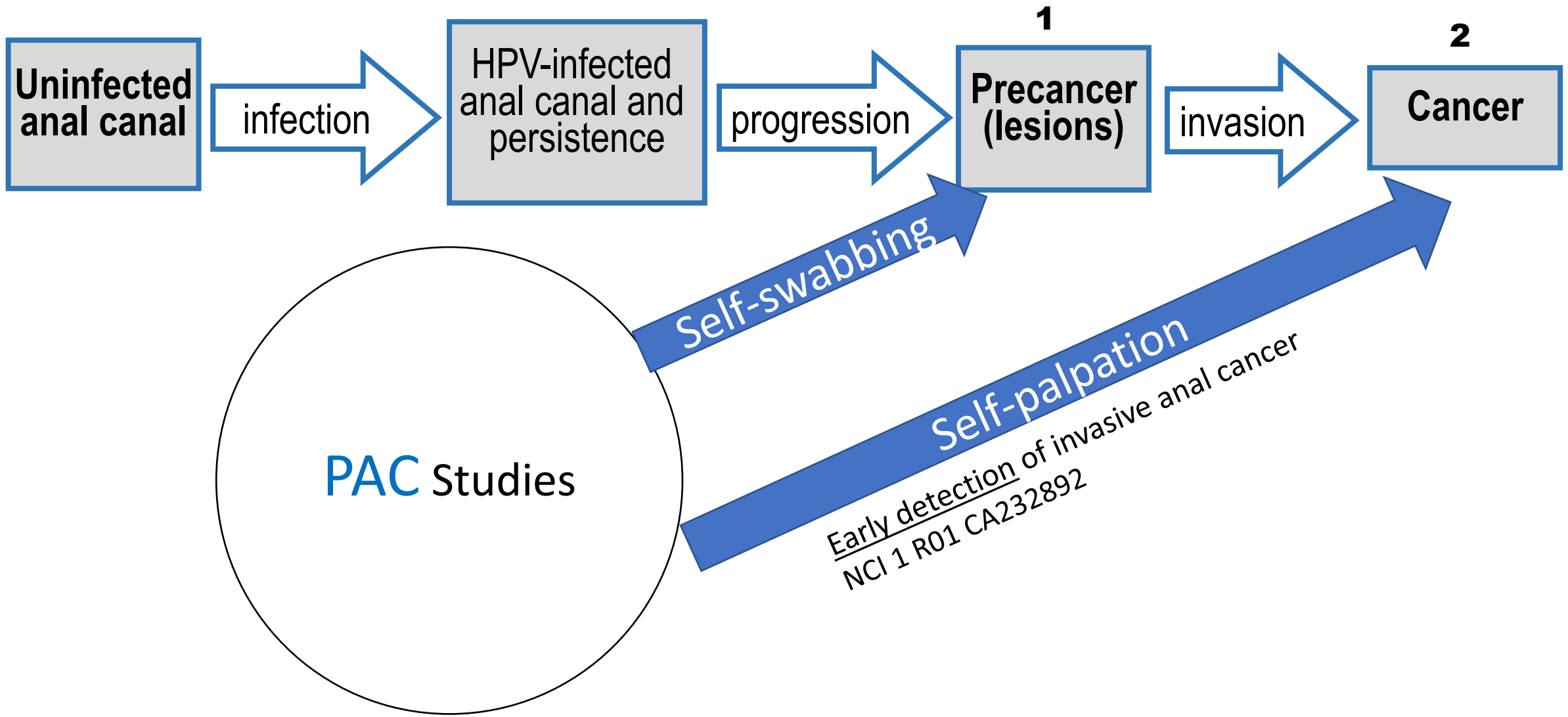
Screening engagement



Nyitray et al. 2023. Int J Cancer.

MEDICAL COLLEGE OF WISCONSIN CANCER CENTER

Intervening at <u>two points</u> in the natural history of anal human papillomavirus



The PAC Palpation Study

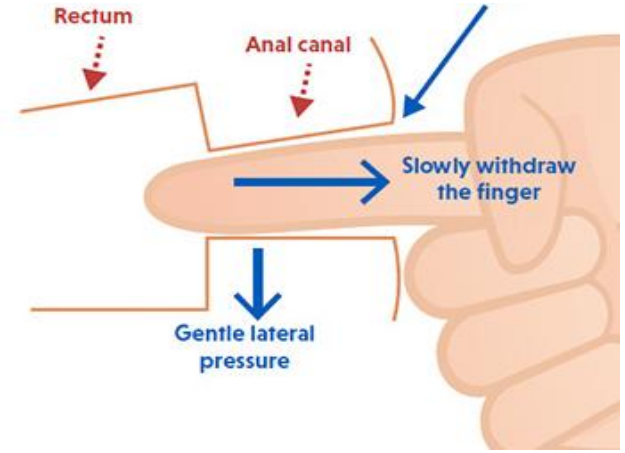
Most anal cancers present with a palpable tumor.

Can individuals detect early invasive anal cancer?

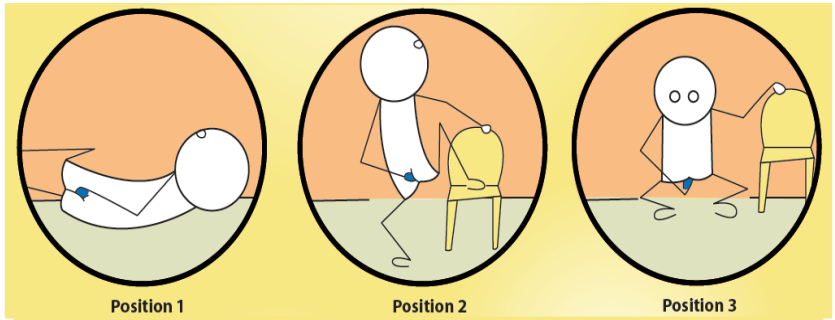
Anal Self-Examination (ASE)
Anal Companion Examination (ACE)

Teaching the ASE/ACE

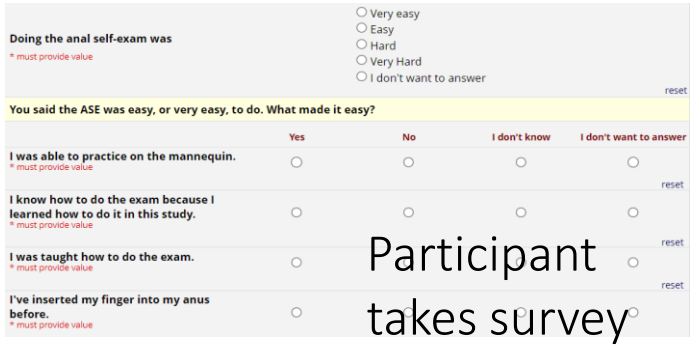
Participant gets overview of anal cancer and anal anatomy; learns ASE/ACE on a mannequin



Clinician determines presence of an abnormality <u>without disclosing results</u>



Participant conducts ASE/ACE in private and records result

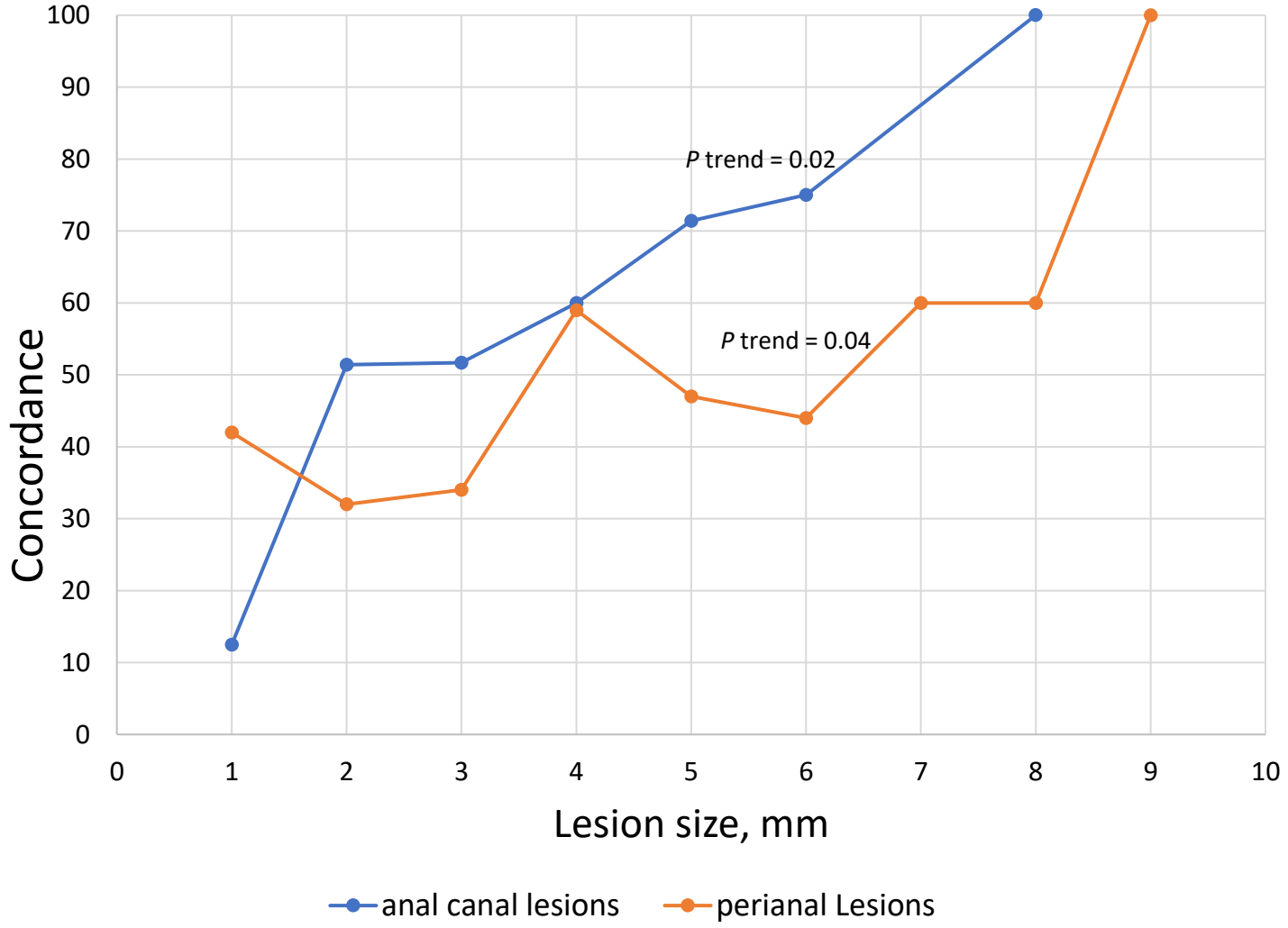


Participant takes survey

Participant gets DARE results, needed referrals

Visit 1 overall concordance: 73%

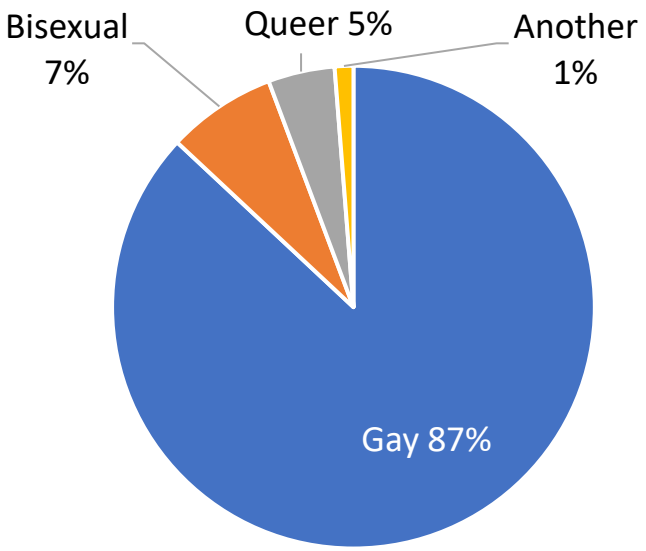
Participants could detect very small abnormalities



Nyitray et al., 2024, Lancet Reg Health Am

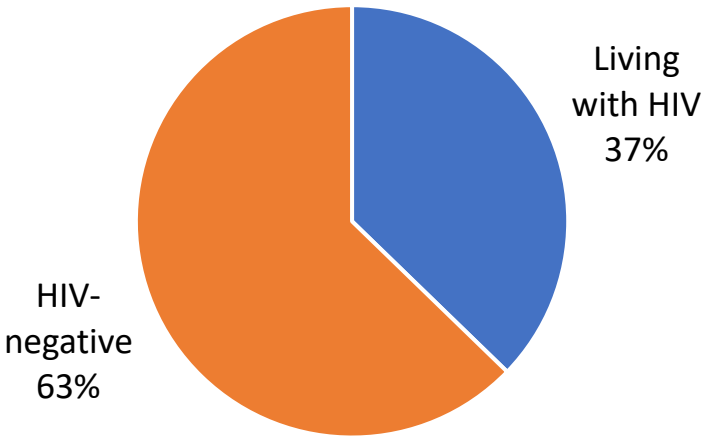
Participant characteristics at visit 2, n = 561

Sexual identity

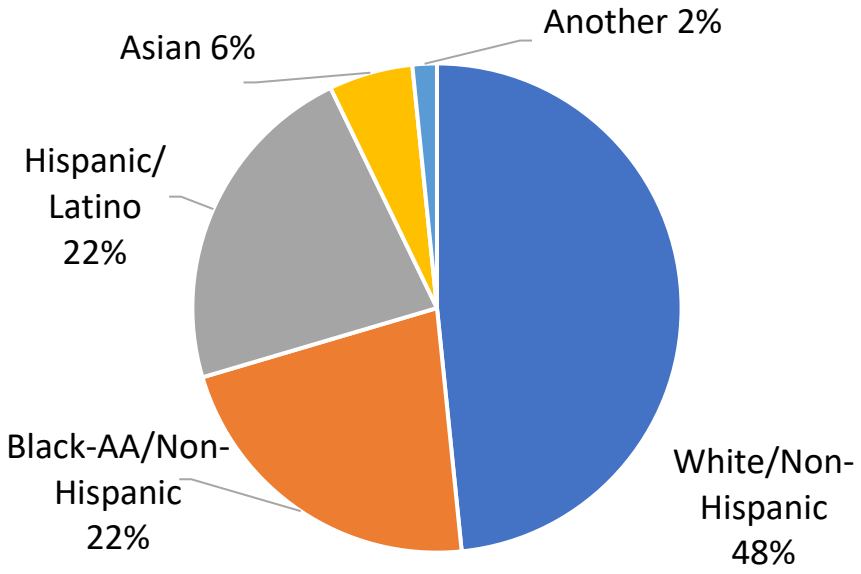


Age, years
median, 42
range, 25-78

HIV status

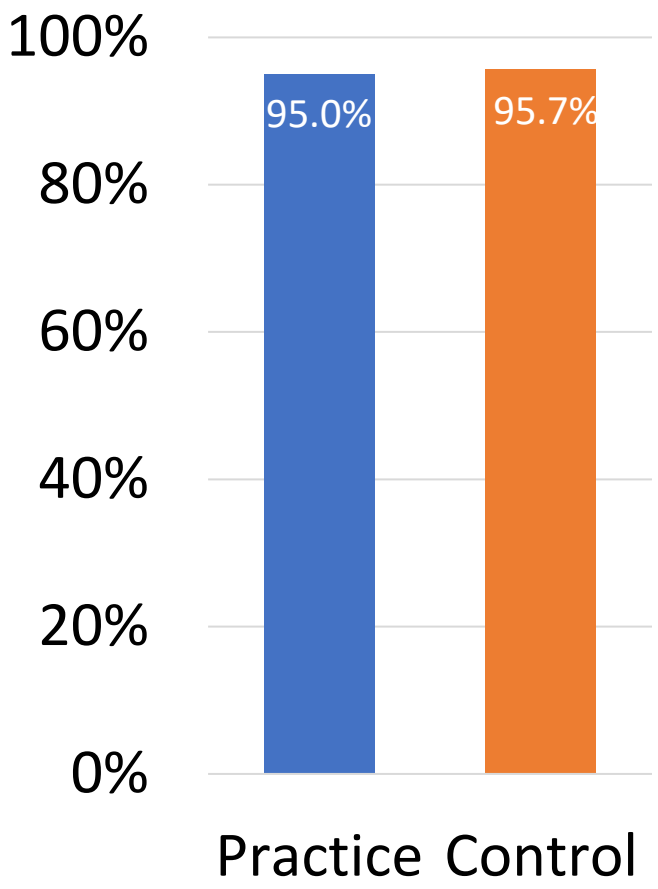


Race and ethnicity



Visit 2 overall concordance: 95%

No difference in concordance or agreement by age or HIV status.



Nyitray et al., under review

Summary of PAC Studies results

1) Equity-based anal cancer screening that addresses barriers will support anal cancer screening uptake.

2) Home-based self-sampling was especially appealing to sexual minority men and transgender women who were Black and those living with HIV.

3) Individuals can detect small abnormalities at the perianus or anal canal.

4) Clinicians may suggest to patients that they can detect palpable/visible anal abnormalities.

Moderated Discussion

Scout, PhD
Executive Director,
National LGBTQI+ Cancer Network

Alan G. Nyitray, PhD
Associate Professor
Medical College of Wisconsin, Clinical Cancer Center

Kristen D. Krause, PhD
Assistant Professor, Department of Urban-Global Public Health and Deputy Director, Center for Health, Identity, Behavior and Prevention Studies (CHIBPS), Rutgers School of Public Health

Jessica S. Wells, PhD
Associate Professor, Nell Hodgson Woodruff School of Nursing, Emory University and Assistant Director of Community Outreach & Engagement, Winship Cancer Institute

Closing Remarks

Evaluation

Please take a brief moment to complete an evaluation of today's seminar.

Your feedback is important to us and will be used to plan future offerings.

Scan to access today's seminar evaluation.

Thank you for attending!

For more information, please email PreventHPV@stjude.org or visit stjude.org/hpv