

From data to action: a multipronged approach to enhance HPV vaccination rates in college students

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June 10, 2025

Conflicts to declare

None

Learning Objective

- Describe the cross-organizational collaborations that facilitated HPV data collection, education, navigation, and vaccination
- Explain how we gathered data, educated students, and provided HPV vaccination



Partnerships and Infrastructure

TIMELINE



2019

State collaboration begins

An idea is born: could we improve data by interfacing the Rutgers EHR with the state's vaccine database?

Student Health, Clinical Affairs, and NJDOH meet to discuss.

2020

Pandemic

All initiatives slow

2021

State registry interface

One initiative ramps up - the vaccine data interface between NJIS and Rutgers

2022

Stakeholders reconvene

Student Health, Population Health, NJ Department of Health, ScreenNJ, Rutgers Communications restart conversations: how do we increase HPV vaccination rates?

2023

Infrastructure created and funding obtained

Analyze data, improve data collection by enhancing immunization forms, create patient navigation workflows in collaboration with ScreenNJ, obtain funding to support initiatives

2024

Health Messaging & Campaign Design Class, focus groups

Undergraduates in the School of Communication begin to take a 400 level class to develop health messaging based on focus groups conducted the same semester

2025

HPV Awareness Month initiatives

March 2025: messaging rollout, vaccination campaign, patient navigation

Partnerships



A partnership with Rutgers Student Health Services, Rutgers Office of Population Health, NJ Department of Health, ScreenNJ, Cancer Institute of NJ, School of Communication and Information, and Rutgers Communications that seeks to:

- **Understand** student vaccination status and improve data quality
- **Educate** students on HPV and benefits of vaccination
- **Facilitate** vaccination for students
- **Promote** community engagement aligned with public health priorities by including students via collaborations and partnerships

Strategic Planning Phases 2024-2025

①

Phase 1



Review data

Understand past efforts

Involve and grow our
community

Identify gaps

②

Phase 2



Develop infrastructure
with a backbone

Establish shared metrics

Build public will

Conduct focus groups;
build academic and public
health collaborations; co-
create messages

③

Phase 3



HPV awareness month
rollout:
messaging,
vaccination,
patient navigation



Landscape and Data

Barriers for College-Aged Population

Previous studies have explored existing barriers to HPV vaccination among the college-aged population. The barriers most frequently reported were:

- Concerns about safety and side effects¹
- A gap in knowledge about vaccination status and HPV in general²
- Lack of healthcare provider recommendations, and not knowing where to access the vaccine.³

1. Kasymova, S. (2022). Human papillomavirus (HPV) and HPV vaccine knowledge, the intention to vaccinate, and HPV vaccination uptake among male college students. *Journal of American College Health* 70(4): 1079-1093. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/32672495/>.
2. McLendon, L., Puckett, J., Green, C., et al. (2021). Factors associated with HPV vaccination initiation among United States college students. *Human Vaccines & Immunotherapeutics* 17(4): 1033-1043. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/33325794/>
3. D'Errico, M.P., Tung, W.C., Lu, M., and D'Errico R. (2020). Barriers and Recommendations Associated with Human Papillomavirus Vaccination Among College Students. *The Journal for Nurse Practitioners* 16(7):533-537. Retrieved from <https://www.sciencedirect.com/science/article/abs/pii/S1555415520302312>.

Interventions for Colleges

The literature review found that the primary intervention category beneficial for this population is a combined education and vaccination campaign.

- A study facilitated a combination of student-direct campaign materials such as posters, banners, social media posts, and provider-directed training and observed a 75% increase in HPV vaccine doses administered at the university in the 2018 vs. 2019 spring semester.¹
- Another study found that using a strategic toolkit for student health services that includes continuing medical education presentation, campus-wide visual messaging about HPV prevalence, genital warts, cancer, and vaccine availability, and an electronic health record form that prompts discussion about the vaccine during patient visits increased vaccination rates in the institution from 12.2% to 20.8%.²

1. Gerend, M.A., Murdock, C., and Grove, K., (2020). An Intervention for increasing HPV vaccination on a university campus. *Vaccine* 38(4): 725-729. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/31767468/>
2. Kessler, R. and Auwaerter, P. (2021). Strategies to improve human papillomavirus (HPV) vaccination rates among college students. *Journal of American College Health*, doi: [10.1080/07448481.2021.1965146](https://doi.org/10.1080/07448481.2021.1965146)

Intervention Strategies


The literature demonstrates the need to:


- Improve the acceptability and accessibility of the vaccine
- Clarify that college-age populations are still eligible to receive the vaccine
- Provide opportunities to get vaccinated on campus
- Improve health information communication regarding the vaccine

New Jersey Vaccination Rates

2022: 13-17 year olds

63.7% fully vaccinated

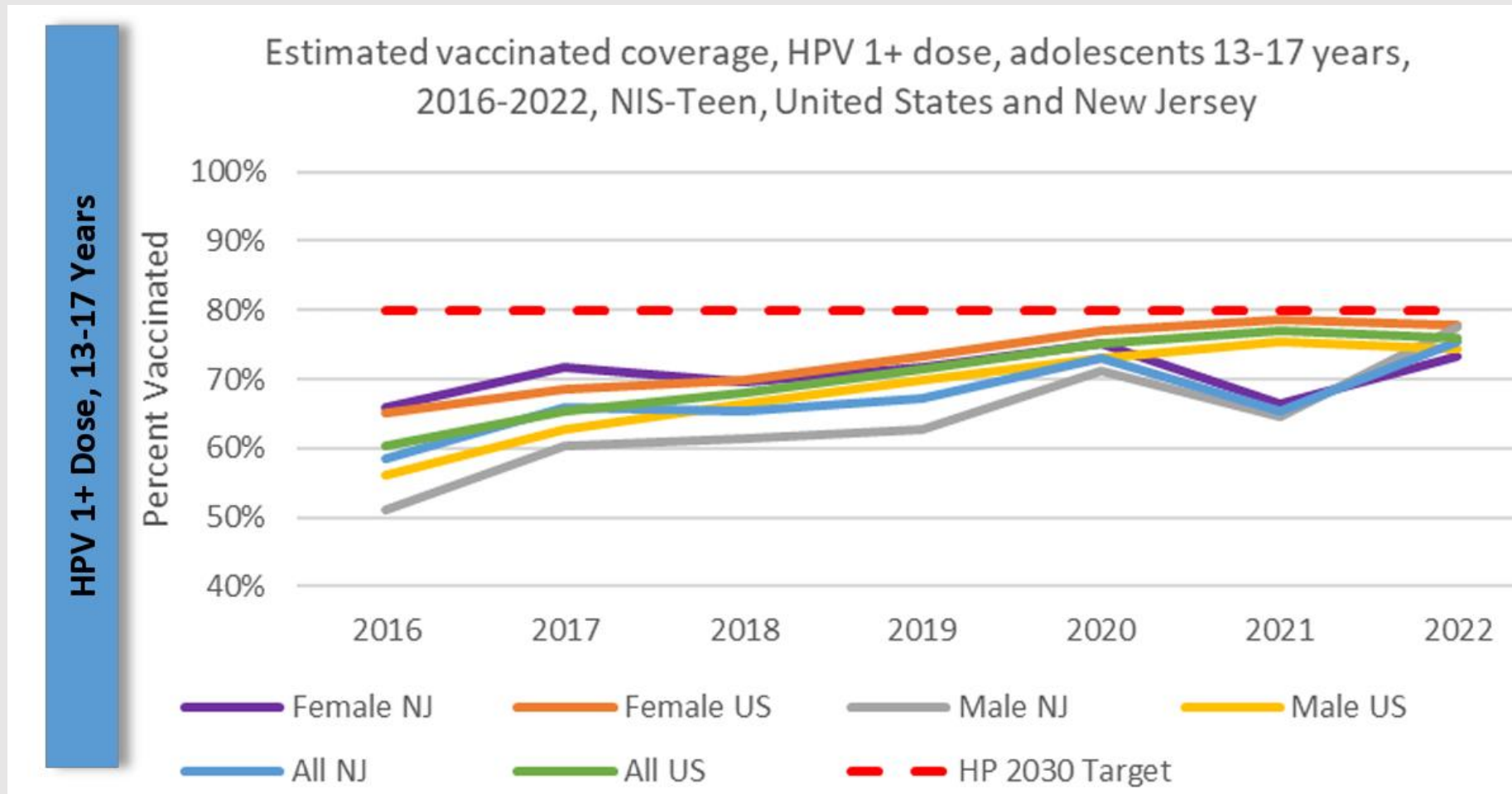

73.4%
1st dose


77.5%
1st dose

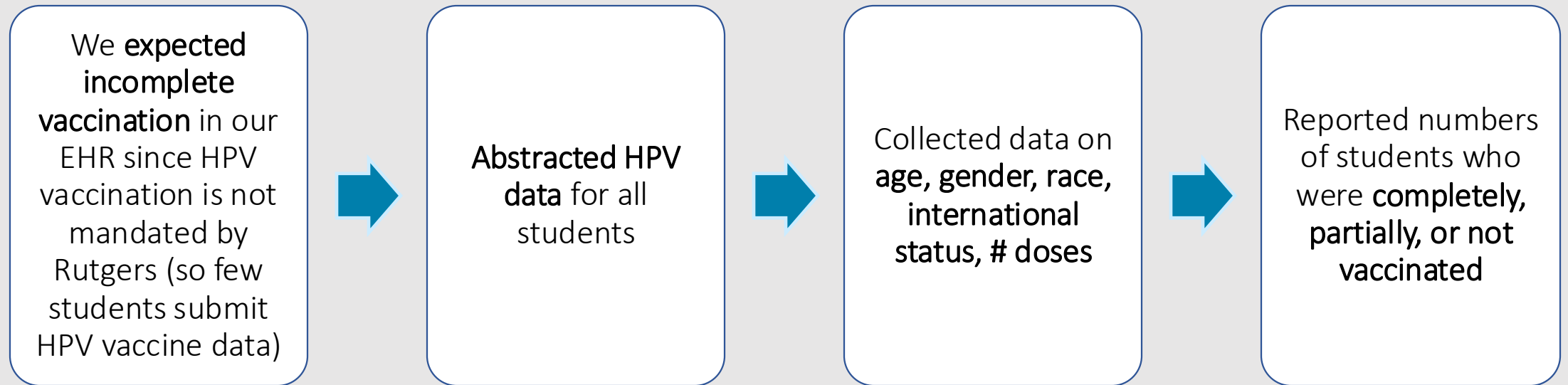


1/3 not fully protected

New Jersey Vaccination Rates



Analysis: Estimating the baseline HPV vaccination among Rutgers students



Rutgers data abstracted Feb 2024

Source: Medicaat IMMUNIZATIONS 2/2024

Data abstracted: report of **all students** in the database

Variables collected: Age, gender, ethnicity, race, ethnicity, international, dates of doses

Variables created: Number of doses, vaccination status based on age at administration (none, partially, fully)

(age at start of vaccine determines number of doses needed for a complete series; 2 doses if start is before age 15; 3 doses if start is at age 15 or later)

Full sample 2024	number	%
Fully vaccinated	24,420	35%
Partially vaccinated	10,763	15%
No HPV documentation	35,116	50%
total	70,299	

50%

To age 26 (data abstracted Feb 2024)

Source: Medicaat IMMUNIZATIONS 2/2024

Data abstracted: report of **students up to age 26** in the database

Variables collected: Age, gender, ethnicity, race, ethnicity, international, dates of doses

Variables created: Number of doses, vaccination status based on age at administration (none, partially, fully)

(age at start of vaccine determines number of doses needed for a complete series; 2 doses if start is before age 15; 3 doses if start is at age 15 or later)

To age 26 (2024)	number	%
Fully vaccinated	21,072	43%
Partially vaccinated	9,069	18%
No HPV documentation	19,444	39%
total	49,585	

61%

University Data 2024 – 26 and under

Vaccination status	Female *	Male	International	US *	LatinX	Not LatinX +	Full time *	Part time
At least one dose	16,728 64%	13,402 57%	551 18%	29,590 63%	2,571 59%	9,362 61%	26,153 61%	9,988 56%
Fully	11,981 46%	9,085 39%	334 11%	20,738 44%	1,664 38%	6,669 43%	18,292 42%	2,780 39%
Partially	4,747 18%	4,317 18%	217 7%	8,852 19%	907 21%	2803 18%	7,861 19%	1,208 17%
No documentation	9,246 36%	10,122 43%	2,396 81%	17,047 37%	1,777 41%	6,044 39%	16,251 39%	3,192 44%
Total	25,974	23,524	2,947	46,637	4,348	15,406	42,404	7,180

At least 1 dose

* $p < 0.0000001$

+ $p = .03$



Academic partnership and student engagement



COM 408: Health Messages & Campaign Design

Promoting community engagement:

- Collaborated with Rutgers University's School of Communication and Information
- Integrated project into an upper-level health communication course
- Engaged students in developing a 2025 HPV Vaccination Campaign
- Provided students with access to data and insights for real-world application
- Enabled students to design and implement a semester-long, evidence-based health communication campaign

Group Project Overview

Problem Analysis

What is the public health problem?

How can we prevent it?

Behavioral Analysis

What barriers to enacting the behavior exist?

Which barriers can we change?

What do we know works?

Audience Analysis

Who is our target audience?

What segment?

Influential secondary audiences?

Campaign Strategy

What is the campaign's goal?

What are my communication objectives?

What messages, sources and channels?

Theory-driven, evidence-based campaign

Promote community engagement: **Dr. Rivera's Health Messages & Campaign Design**

- Guest speakers from NJDOH, ScreenNJ, Partnership for Maternal and Child Health of Northern NJ, Rutgers Health & Rutgers Communication (3 intersection points)
- Students were provided with vaccine data and focus group results so they can design a realistic health communication campaign as a semester-long longitudinal project




Focus Groups

- Analyzed university vaccination data to identify key student groups for focus group participation
- Conducted focus groups to assess student knowledge, attitudes, and perceptions about HPV and the HPV vaccine
- Shared focus group findings with students in the Health Messages & Campaign Design course
- Students selected a target subgroup and created tailored HPV vaccination messaging campaigns



Focus group: Notable findings for individual groups

Common Findings <ul style="list-style-type: none">• Expressed desire for more information about HPV and the HPV vaccine.• On-campus accessibility is a major motivator.• Concerns about vaccine side effects are widespread.• Interactive, visual outreach (e.g., tabling events) is preferred.• Uncertainty about how to obtain or afford the vaccine.• General support for the vaccine, but questions about its necessity. 	General Student Population <ul style="list-style-type: none">• Believed males could carry but not be infected by HPV• Saw vaccine decisions as parents' and did not vaccinate due to sexual activity implications
	BIPOC Students <ul style="list-style-type: none">• Distrust of available information• Religion may influence vaccine support
	International Students <ul style="list-style-type: none">• Concern over cultural stigma and partner suspicions• Found the U.S. healthcare system confusing, though Rutgers was seen as an exception; suggested making the vaccine mandatory
	Male Students <ul style="list-style-type: none">• Some were unaware of HPV or the HPV vaccine• Skeptical of cancer-focused messaging• Curious about HPV's impact on males



Sample student projects



Protect Her Future

**Preventing Cervical Cancer through HPV Vaccination in Black Women
at Rutgers**

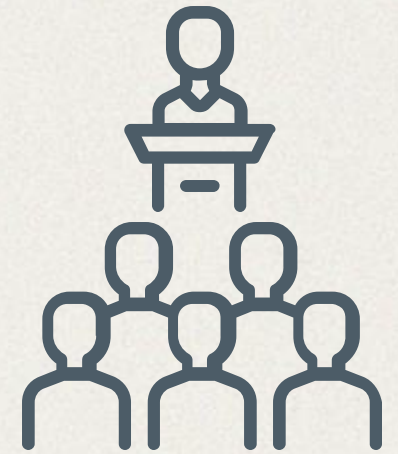
Group 3: JEMS - Jillian Cronin, Elizabeth Marazere, Michelle Bae, Sophia Karakoglou

Health Message & Campaign Design

May 5, 2025

Dr. Yonaira M. Rivera

Communication Objective & Activity



Communication objective: Inform the target audience about HPV and its link to cervical cancer to raise perceived threat and provide resources for getting vaccinated

Activity: Collaborate with student organizations focused on Black women to inform members

- Douglass Black Students' Congress
- Sisters with Values
- Black sororities

Message design: Events with informative presentation and free stuff/food

Source: Student organization leaders and Black medical professionals


Channel: Community - allows for high connectivity, interactivity, and personalization

Example of Proposed Ad

Why this ad works

- Strong visual contrast between graduation to a hospital bed, grabs attention and uses emotions like fear
- Gets viewers to reflect on their personal risk and take action
- Focus on non-Hispanic Black women due to delayed diagnosis due to socioeconomic backgrounds
- Graduation image = relatable, personal, culturally relevant compared to hospital bed = not so much
- Clear, easy-to-verify statistics which builds credibility
- Simple vaccine steps via Rutgers Health Portal and Screen NJ Van, no extra research needed

**WHAT YOU DON'T KNOW
CAN KILL YOU**



**She had dreams.
HPV had other plans**

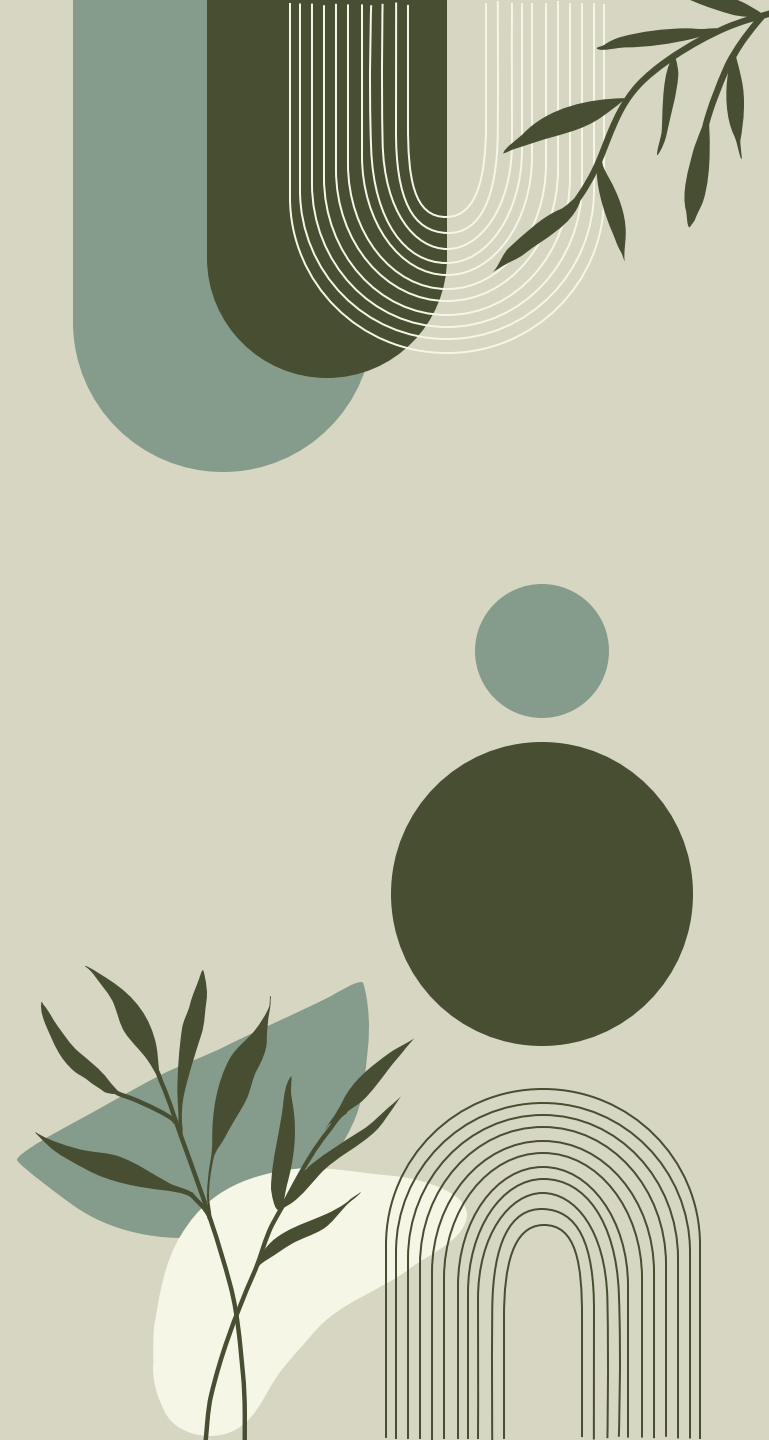
- **HPV causes 99% of cervical cancer cases**
- **Black women have a 58% survival rate compared to 67% in white women.**
- **Most women don't know until it's too late**
- **Resulting in infertility, painful treatments, and even death.**

**PROTECT YOURSELF. SCHEDULE YOUR HPV
VACCINE NOW.**

- Log in to the Rutgers Student Health Portal
- Select "HPV Mobile Clinic: Screen NJ Van"

Guard Your Health: HPV Prevention for Queer Men at Rutgers

Aiden Young, Yiraldo Campos, Nabila Marthellato, Victoria Pancicaro



Strategic Communication Objective

- **Objective 1:** Increase perceived susceptibility of queer male students to HPV infection
 - **Activities:** Flyer that address the false belief that HPV only affects women or that monogamous relationships completely eliminate their risk of HPV
- **Objective 2:** Targeting perceived barriers such as fear about vaccine safety, concerns regarding costs, and low awareness about easy access to the vaccine
 - **Activities:** Instagram Reel/ TikTok style informative video (step-by-step)





Objective 2: Proposed Ad

This video overviews:

- Barriers such as lack of access, cost concerns, and vaccine safety
- Solutions to all three with an emphasis on our core message

We look forward to:

- Making a series of TikTok/ Instagram Reel style videos to educate our target audience about various concerns they may have.



Life Abroad begins with your health

Health Message Design for International
student HPV Prevention

Group 6: Chloe A, Xiangbo Dang Dang, Saira Mazariegos

Target Population: **First-Year International Students**

Targeted Health Behavior: Start HPV vaccination series during first year of college at student health clinics to prevent HPV caused **genital warts** and associated cancers.

Communication Objectives

Objective 1:

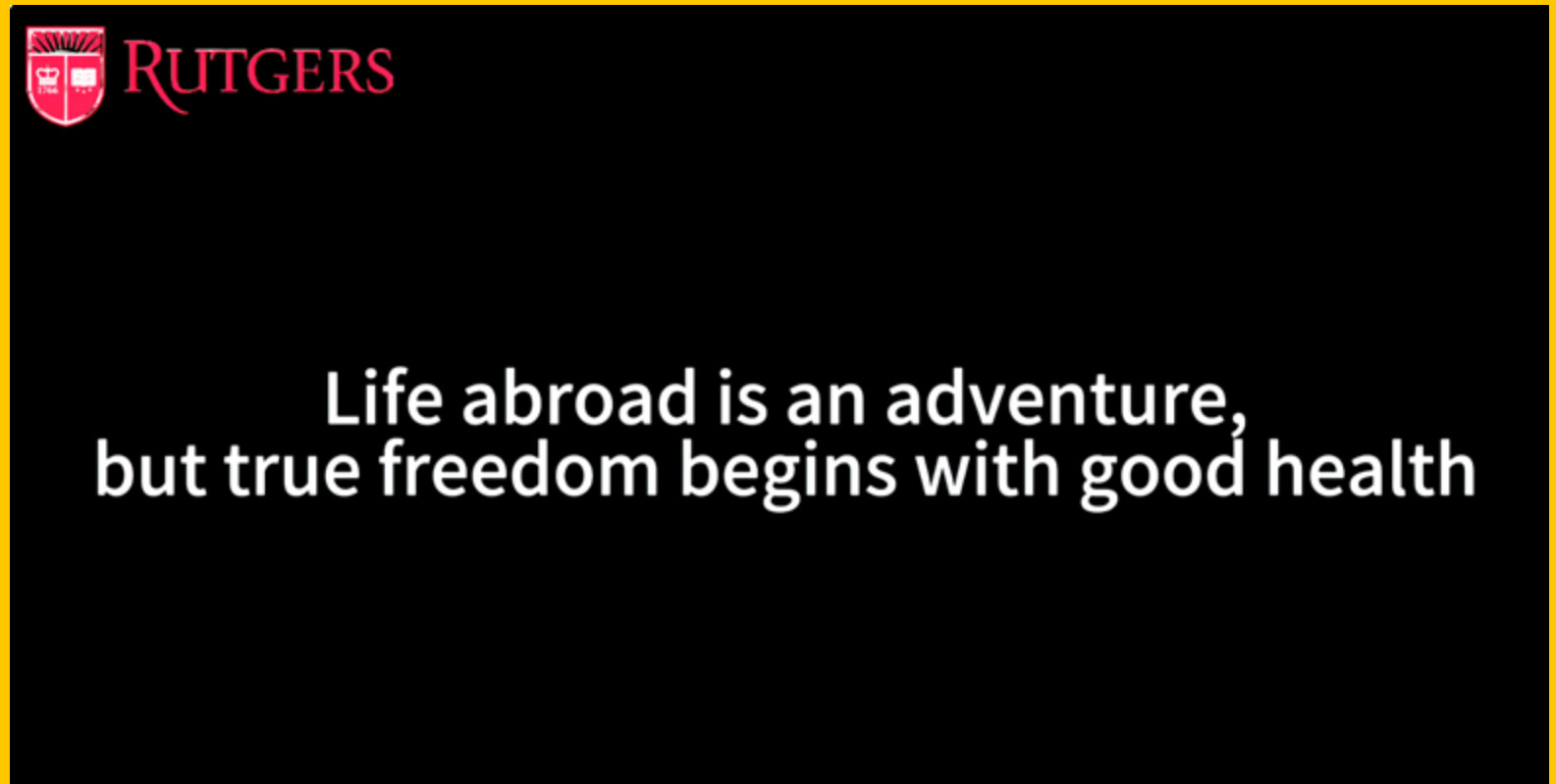
Increase awareness of HPV **susceptibility** among International students by explaining the high potential threat of infecting HPV.

Objective 2:

Enhance **self-efficacy** among Rutgers International students by providing information on HPV vaccine availability at campus health centers through the effective platforms.

Proposed Ad Prototype

<https://www.youtube.com/watch?v=s-7R41nUYDU>





Enhancing HPV Vaccination Uptake Among Female Freshman College Students

Elise Maravillas, Nicole Kozlovsky,
Raphaella Antoniou

Targeted Behavior & Population

Targeted Behavior

Increase HPV vaccination among female-identifying Rutgers freshmen (ages 18–24) by addressing lack of awareness and concerns about confidentiality.

Target Population

First-year college students at Rutgers who may not have completed the HPV vaccine series and are navigating independent healthcare decisions for the first time.



Strategic Communication Objectives

Raise awareness of the risks of HPV and the benefits of vaccination.

- Activities:
 - Social media content (Reels, infographics) featuring peer ambassadors
 - Printed flyers in high-traffic areas (dorms, student centers, dining halls)


Reassure students that getting vaccinated through Rutgers Health is completely confidential.

- Activities:
 - Flyers and handouts outlining privacy policies
 - Host Q&A sessions with health care providers to address concerns
 - “Vaccinate & Chill” tabling events with Rutgers Health providers to answer questions



Proposed Ad(Prototype)

Providers will host Q&A booths during our “Vaccinate & Chill” pop-up events to reinforce messaging in a trustworthy setting.



Q&A BOOTH: Let's Talk HPV

Empower Your Health. No Judgment, Just Facts.

Why Stop By?

Get real answers from trusted medical pros
Ask anything—no question is too small or “TMI”
Free, judgment-free, and friendly vibe

What's HPV & Why the Vaccine?

- HPV = super common virus, but the vaccine helps prevent cervical & other cancers
- Most effective before exposure—but still worth it even later
- It's safe, fast, and covered by most plans

Our Promise to You:

No pressure
Just science-backed info
Women-led conversations = relatable & real

Find Us @ the Pop-Up Lounge

May 9th, 11am-4am @ College Ave Student Center
Snap a selfie, grab a snack, and chill while you learn

The poster features a pink background with various medical and health-related icons: a syringe, a virus, a brain, a test tube, a plus sign, a pill, and a person sitting on a chair. There are also decorative circles and dots in shades of pink, orange, and yellow.



BONUS

First 50 visitors get a free wellness goodie bag!

GET VACCINATED

Brought to you by Rutgers Health

Follow us @VaccinateAndChill for updates & giveaways

The poster features a pink background with various medical and health-related icons: a syringe, a virus, a brain, a test tube, a plus sign, a pill, and a person sitting on a chair. There are also decorative circles and dots in shades of pink, orange, and yellow.

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CERTIFICATE

OF ACHIEVEMENT

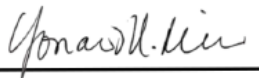
ON DECEMBER 10, 2024
IS PRESENTED TO:

Chloe G. Askins, Saira D. Mazariegos & Xiangbo Dang

For achieving the first place rank, making a meaningful contribution towards the development of a communication plan to promote HPV vaccination informing a comprehensive Rutgers University initiative in collaboration with the NJ Department of Health and the Rutgers Cancer Institute to prevent illness caused by Human Papillomavirus Infection.



Mary E. O'Dowd, MPH
Executive Director, Health System and
Population Health Integration



Yonaira M. Rivera, PhD, MPH
Assistant Professor of Communication



Noa'a Shimoni, MD, MPH
Associate Vice President for Student
Health and Wellness



Ellen Pagán Indoe, MA, MCHES®
Program Director, Community Outreach and Education
Rutgers Cancer Institute | Screen NJ



RUTGERS-NEW BRUNSWICK
School of Communication
and Information
Department of Communication



HPV Awareness Campaign Rollout



Educate: messaging campaign



HPV awareness Rutgers University

rutgers.edu/hpv-a...

RUTGERS

Click below to get vaccinated, find out where, and read more about HPV and the vaccine.

Ready to get vaccinated? Click here to get vaccinated at Student Health.

Need to find out where you can get vaccinated? Let ScreenNJ help you get personalized information for your insurance.

Have questions about HPV? Find out more about HPV, the human papillomavirus.

FAQs



Anyone can get HPV. YES, even you.


PREVENT WARTS. PREVENT CANCERS. MEN TOO.

The vaccine is safe and effective.

RUTGERS ScreenNJ

HPV Prevention Made Simple: A Student's Interview with Experts

- Perry Halkitis PhD, MS, MPH - Dean, Rutgers School of Public Health
- Noa'a Shimoni, MD, MPH - Associate Vice President for Student Health and Wellness, Rutgers University
- Aidan Farone - Class of 2024, B.A. in Communications, Minor in Health & Society



Anyone can get HPV. YES, even you.

HPV spreads through intimate skin-to-skin contact and can lead to warts and cancer in all genders.

A safe and effective vaccine offers protection.

Get vaccinated at Rutgers Student Health or use ScreenNJ to find a location based on your insurance.

RUTGERS-NEW BRUNSWICK Student Health Division of Student Affairs


ScreenNJ SCREENING, EDUCATION AND VACCINATION

health.rutgers.edu @rustudenthealth

Vax on the bus

April 3 - College Ave Student Center
April 8 - Cook Douglass Rec Center
April 24 - Busch Werblin Rec Center

Facilitate vaccination: Patient navigation with ScreenNJ



Program Enrollment

Step 2 of 4

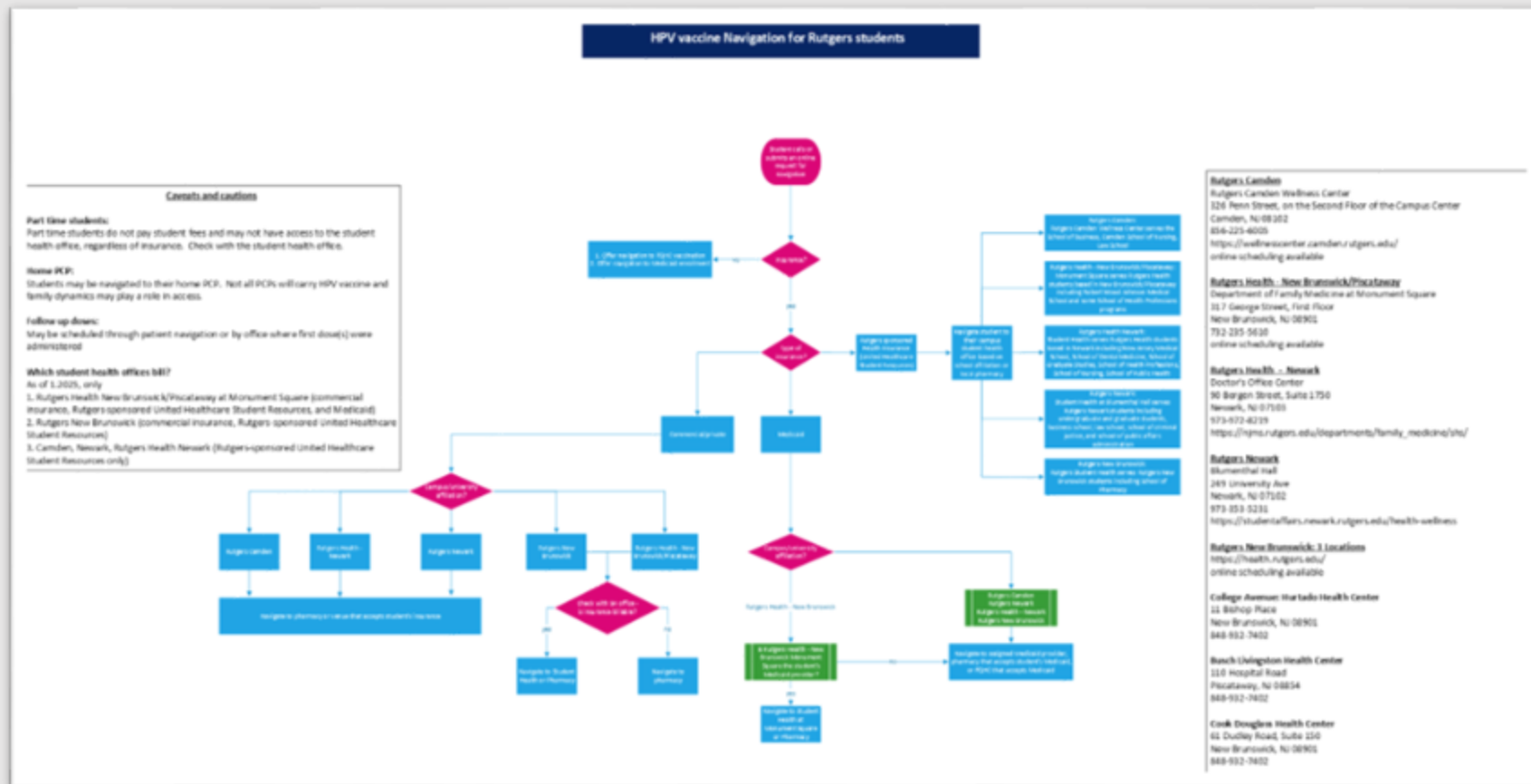
25%

Thank you for reaching out to schedule a ScreenNJ.

We have a few questions for you in the event you cannot submit the questionnaire, a Patient Navigator, or have any questions, please call **833-727-3665**, dial NJ or 5 for general information.

Preferred language *

☐ English



Students directed to ScreenNJ for assistance with HPV vaccine navigation

Facilitate vaccination: Vax on the bus with ScreenNJ

Vax on the Bus

April 3 - College Ave Student Center

April 8 - Cook Douglass Rec Center

April 24 - Busch Werblin Rec Center



To age 26 (from 2/2024 to 5/2025)

Source: Medicaat IMMUNIZATIONS 2/2024 and 5/2025

Data abstracted: report of **students up to age 26** in the database

Variables collected: Age, gender, ethnicity, race, ethnicity, international, dates of doses

Variables created: Number of doses, vaccination status based on age at administration
(none, partially, fully)

(age at start of vaccine determines number of doses needed for a complete series; 2
doses if start is before age 15; 3 doses if start is at age 15 or later)

To age 26 (2024)	number	%
Fully vaccinated	21,072	43%
Partially vaccinated	9,069	18%
No HPV documentation	19,444	39%
total	49,585	



To age 26 (2025)	number	%
Fully vaccinated	22,029	40%
Partially vaccinated	10,990	20%
No HPV documentation	22,254	40%
total	55,273	

Next steps

- Deepen the analysis to understand where we had an impact:
 - Data cleanup, uploads, vaccine advocacy and consequent vaccination in the on-campus clinical setting, vaccination clinics in collaboration with ScreenNJ, or through patient navigation
- Fall messaging campaign – stay tuned
- Share our story

Q&A