



# Spread Love not Warts

Implementation of a successful HPV vaccine quality improvement program at Salem State University.

# Objectives

- Identify 3 effective strategies to increase HPV vaccination rates
- Define common barriers to HPV vaccination
- Discuss the role of marketing and communication efforts to increase HPV vaccination efforts on a college campus

# HPV: Background Knowledge

- ❖ HPV is the most common sexually transmitted infection
  - ❖ 80% of women will be infected by age 50
- ❖ Estimated 14 million new cases of HPV annually in U.S. alone which translates to \$5-8 billion spent on treatment and prevention
- ❖ HPV cancer prevalence reported at 33,000 (U.S.) and 610,000 globally each year
  - ❖ 4.8% total worldwide cancer burden

# HPV: Background Knowledge

- ❖ Unresolved HPV infection can result in genital warts and cancer (vulvar, cervical, anal, penile, oropharyngeal)
  - ❖ Oropharyngeal cancer rates will surpass cervical cancer by 2020
- ❖ Safe, effective vaccine provides protection against most significant and oncogenic strains
- ❖ Nationally, only 36.9% of females and 5.9% of males aged 19-26 reported having received at least 1 dose of the vaccine

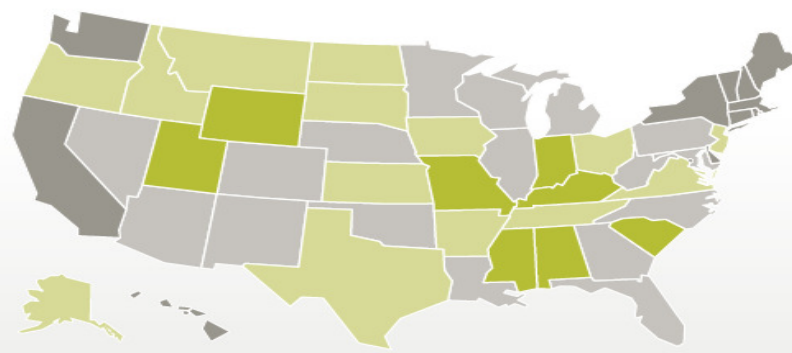
Sources: CDC, 2015; Chaturvedi et al., 2011, Markowitz et al, 2013

# U.S. HPV Vaccination Picture

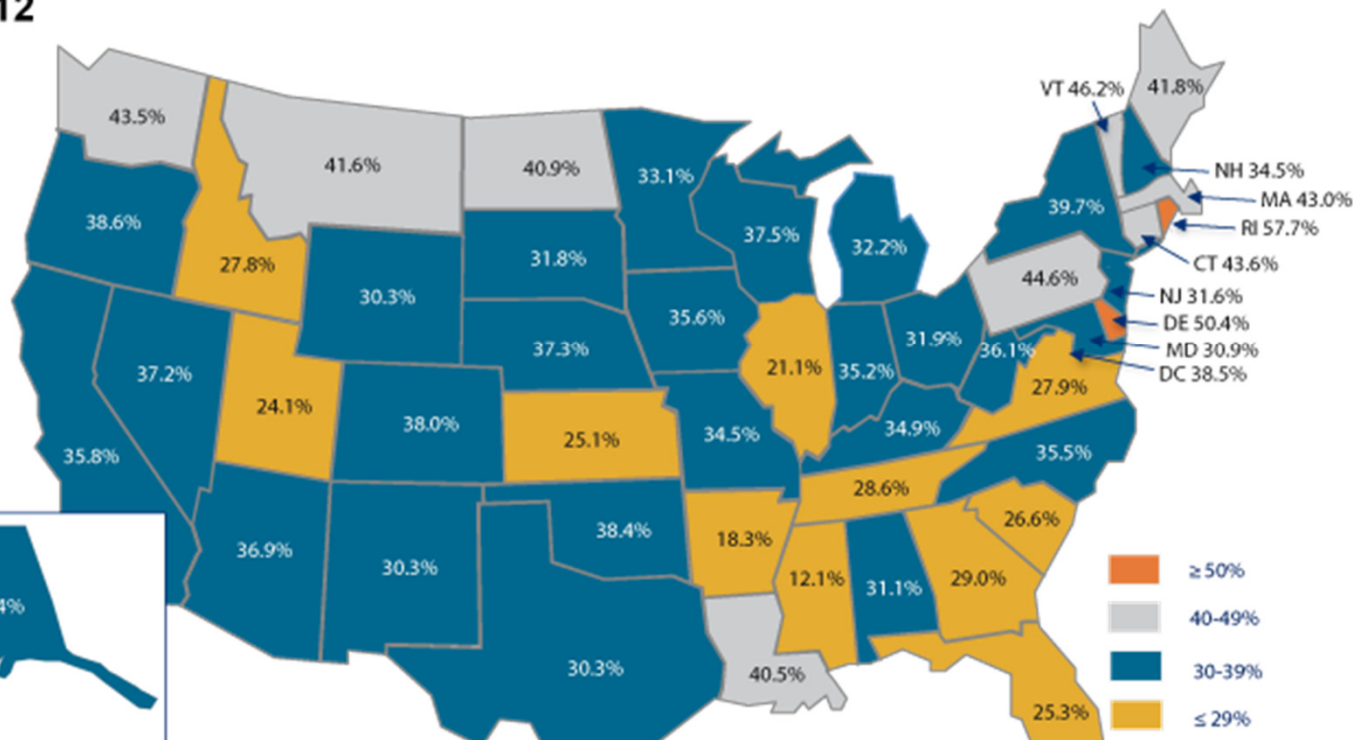
**NATIONWIDE**  
**6 OUT OF 10**  
**BOYS ARE UNVACCINATED**

National coverage is 42%  
 Coverage by state:  
 29% or less  
 30-39%  
 40-49%  
 50% or greater

Percentage of adolescent boys who have received one or more doses of HPV vaccine\*



Percentage of 13- to 17-Year-Old Girls Completing HPV Vaccine Series, U.S., 2012



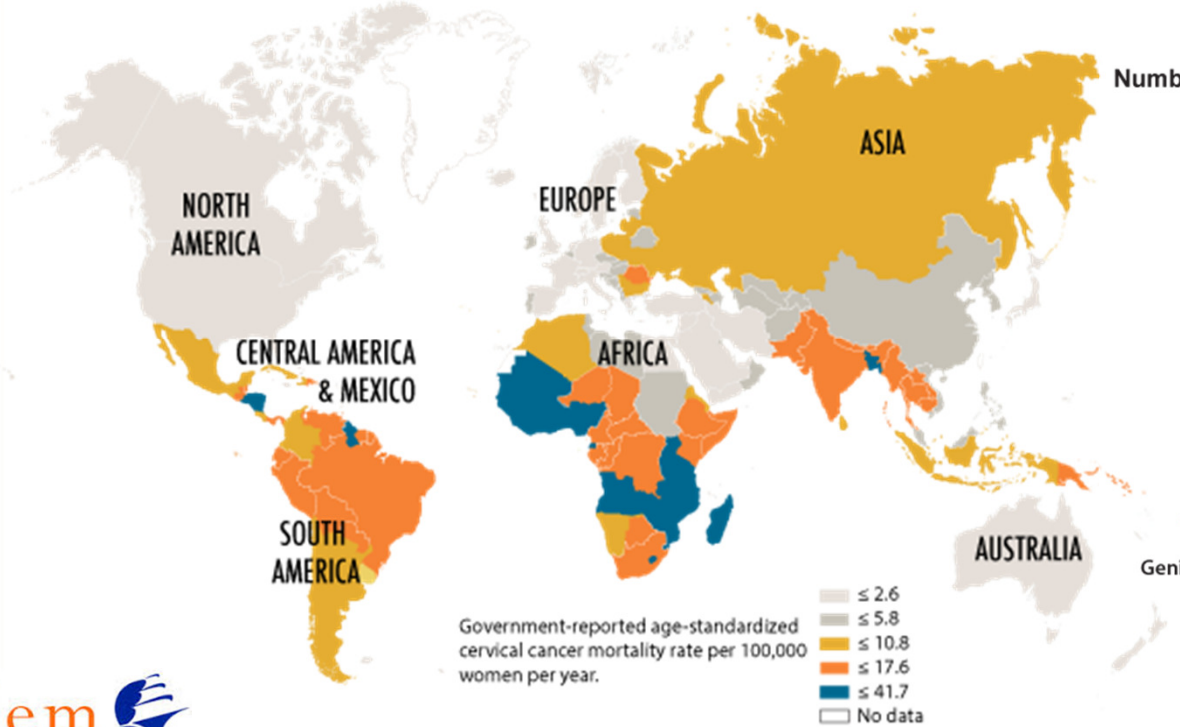
cdc.gov

# Global HPV Picture

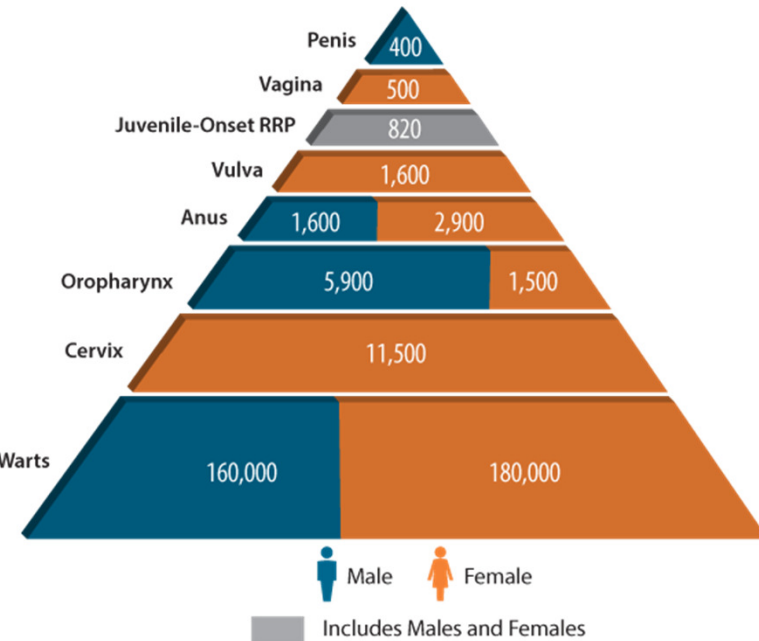
## HPV Vaccine Three-Dose Coverage Among Girls in High-Income Countries



## Global Cervical Cancer Mortality Rates



## Numbers of U.S. Cancers and Genital Warts Attributed to HPV Infections





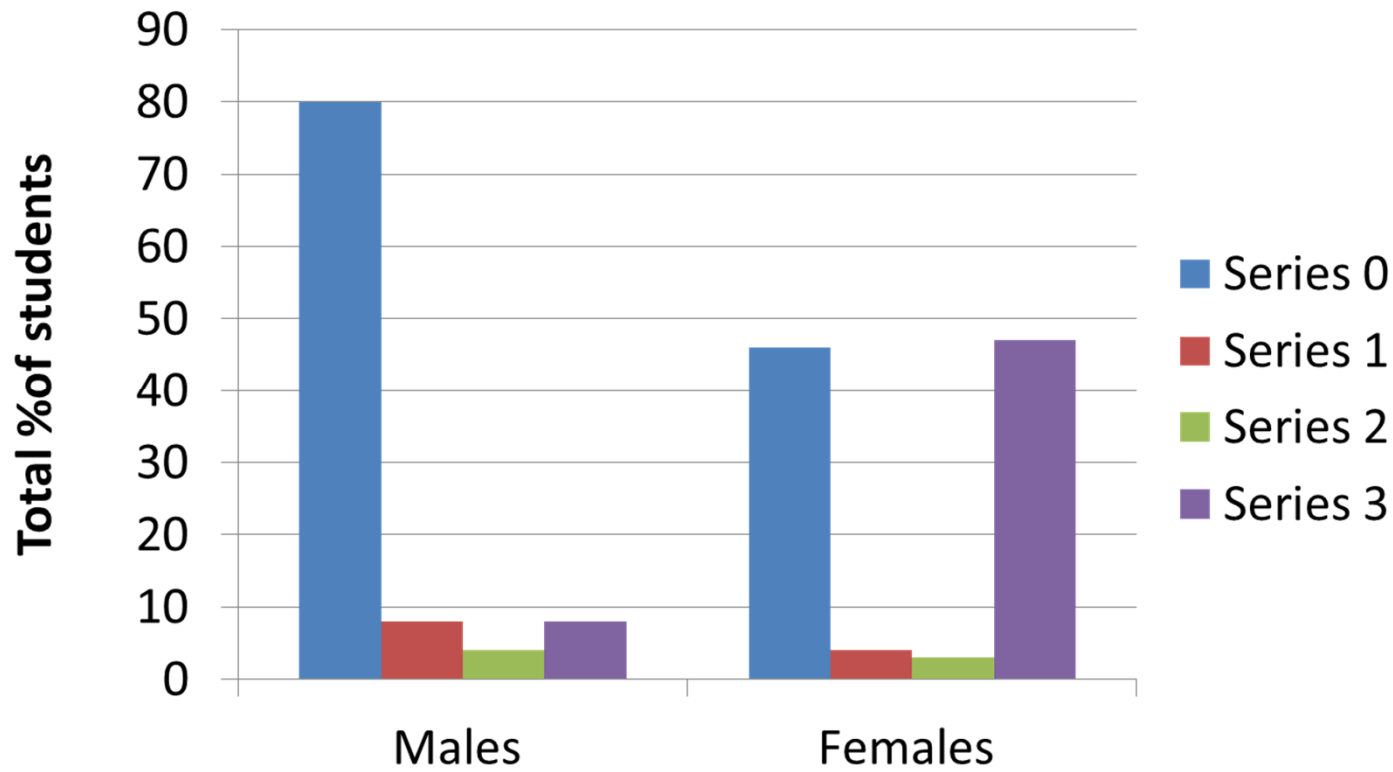
# Setting



- ❖ Student Health Services employs 4 FT NPs, 2 admin. staff
- ❖ 10,000 students enrolled
- ❖ 2,500 reside on campus
- ❖ 500 international students from 69 countries
- ❖ Average 5,000 patient visits per year



# Local Vaccine Data



Self-reported HPV vaccine history collected at the student health services, spring semester 2014



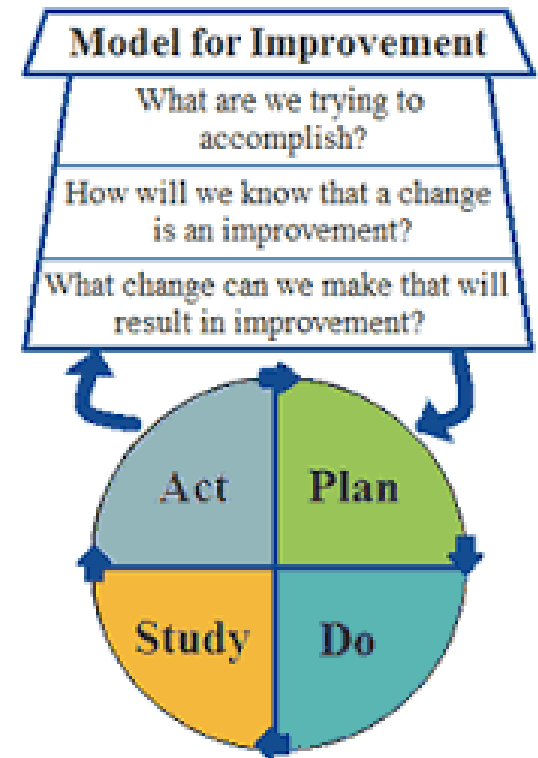
## Overarching goal-

To increase campus Human Papillomavirus (HPV) awareness and vaccination rates in the student population of males and females age 18-26 during the fall semester, 2014.

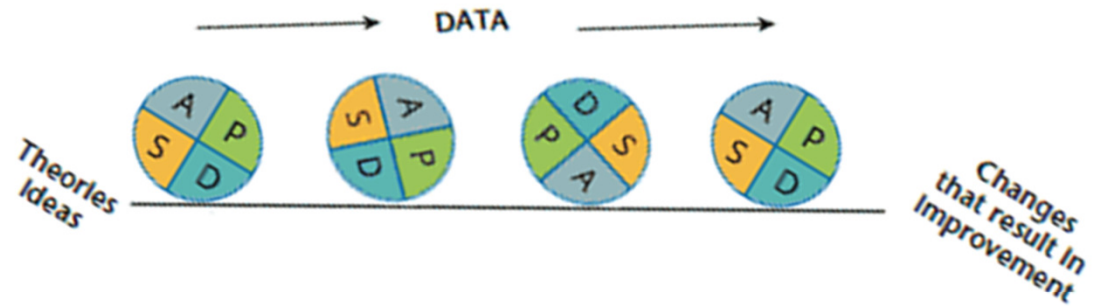
## Model for Improvement

[www.ihl.org](http://www.ihl.org)

Quality Improvement (QI)  
Plan-Do-Study-Act



# Plan-Do-Study-Act

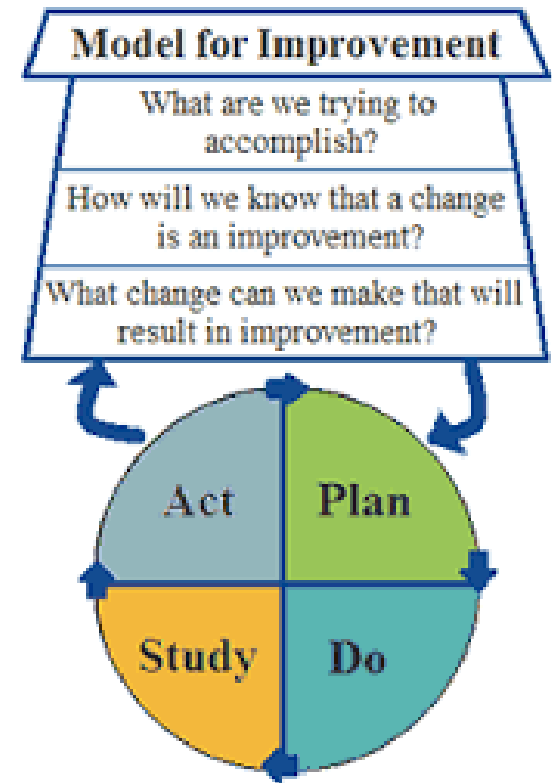


- Plan: Objective, questions, predictions. Who, what, where, when, why. Plan for data collection.
- Do: Carry out plan. Document problems and unexpected outcomes. Begin analysis.
- Study: Complete analysis of data. Compare to predictions. Summarize what was learned.
- Act: What changes are to be made...next cycle.

# SMART Objectives

- Specific
- Measurable
- Achievable
- Realistic
- Time specified

Identify *outcome* desired, *conditions* observed, *criterion* for measurement, and *priority population* targeted



McKenzie, Neiger, & Thackeray; 2013

## PDSA Worksheet for Testing Change

**Aim:** (overall goal you wish to achieve) *Every goal will require multiple smaller tests of change*

Describe your first (or next) test of change:	Person responsible	When to be done	Where to be done

### **Plan**

List the tasks needed to set up this test of change	Person responsible	When to be done	Where to be done
<ul style="list-style-type: none"> <li>• How will you measure?</li> </ul>			

Predict what will happen when the test is carried out	Measures to determine if prediction succeeds

**Do**      Describe what actually happened when you ran the test: collect data and analyze

**Study**    Describe the measured results and how they compared to the predictions

**Act**        Describe what modifications to the plan will be made for the next cycle from what you learned

# Inclusion Criteria

- All males and females, aged 18-26, visiting the health services during the 16 week fall semester, 2014, regardless of visit type, with no prior HPV vaccine series completion or medical exemption for vaccination.

# Aims

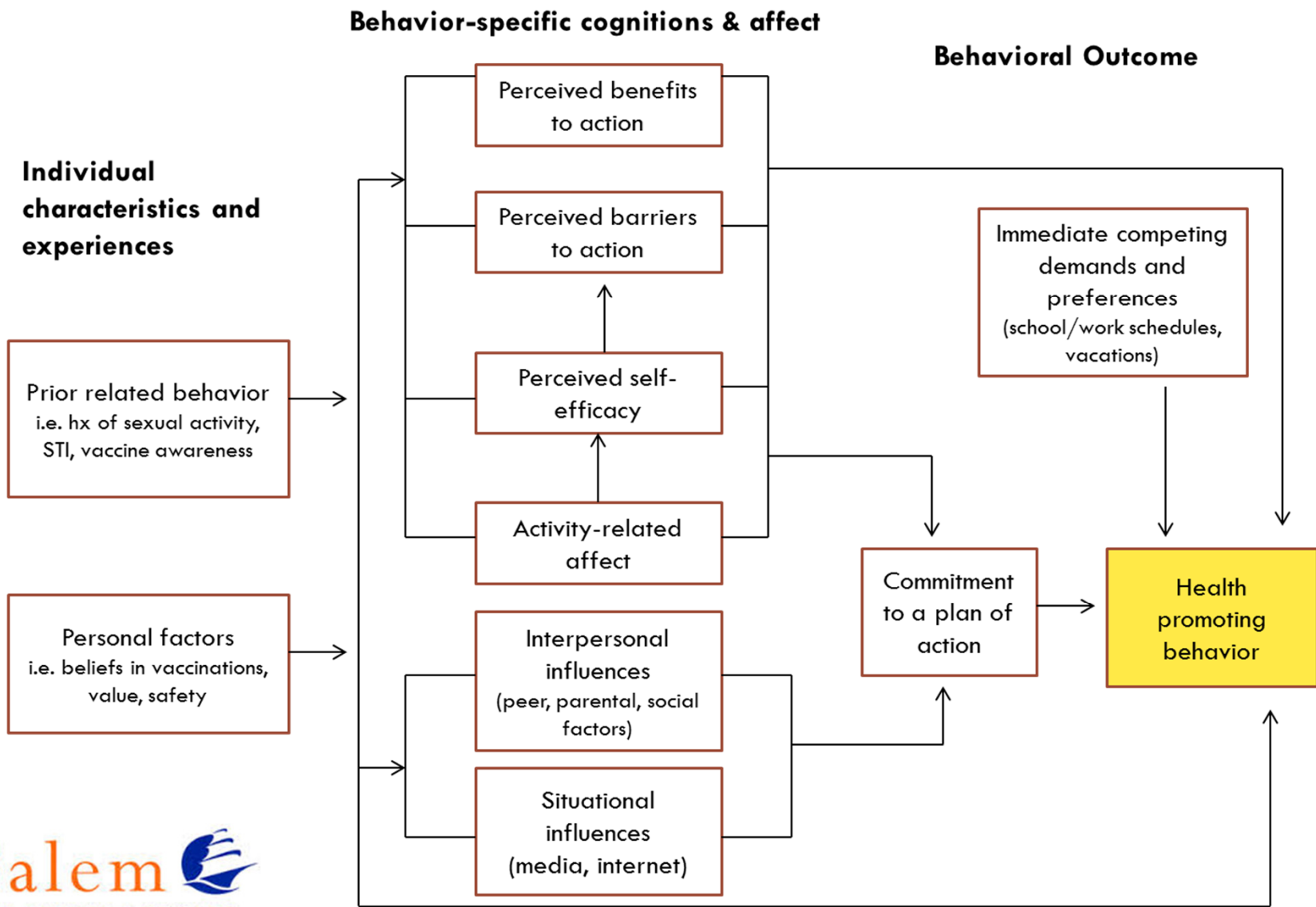
1. Prevent missed opportunities for providing HPV vaccine during all clinical encounters by utilizing the EHR for providers and appointment reminders for patients.
2. Increase the frequency of HPV vaccine recommendations during all patient encounters
3. Increase community exposure to HPV vaccine awareness and accessibility through multi-component marketing and communication strategies

# Objectives

- 1.1** During the intervention, 80% of all charts meeting inclusion criteria will note provider acknowledgement
- 1.2** During the intervention, 100% of eligible follow up appointments will be scheduled at initial visit.
- 2.1** During the QI, 80% of all charts meeting inclusion criteria will receive HPV vaccine recommendation.
- 3.1**  $\geq 50\%$  of vaccine acceptors will report level of somewhat important- very important as motivation for vaccination based on social marketing campus exposure in a feedback survey.



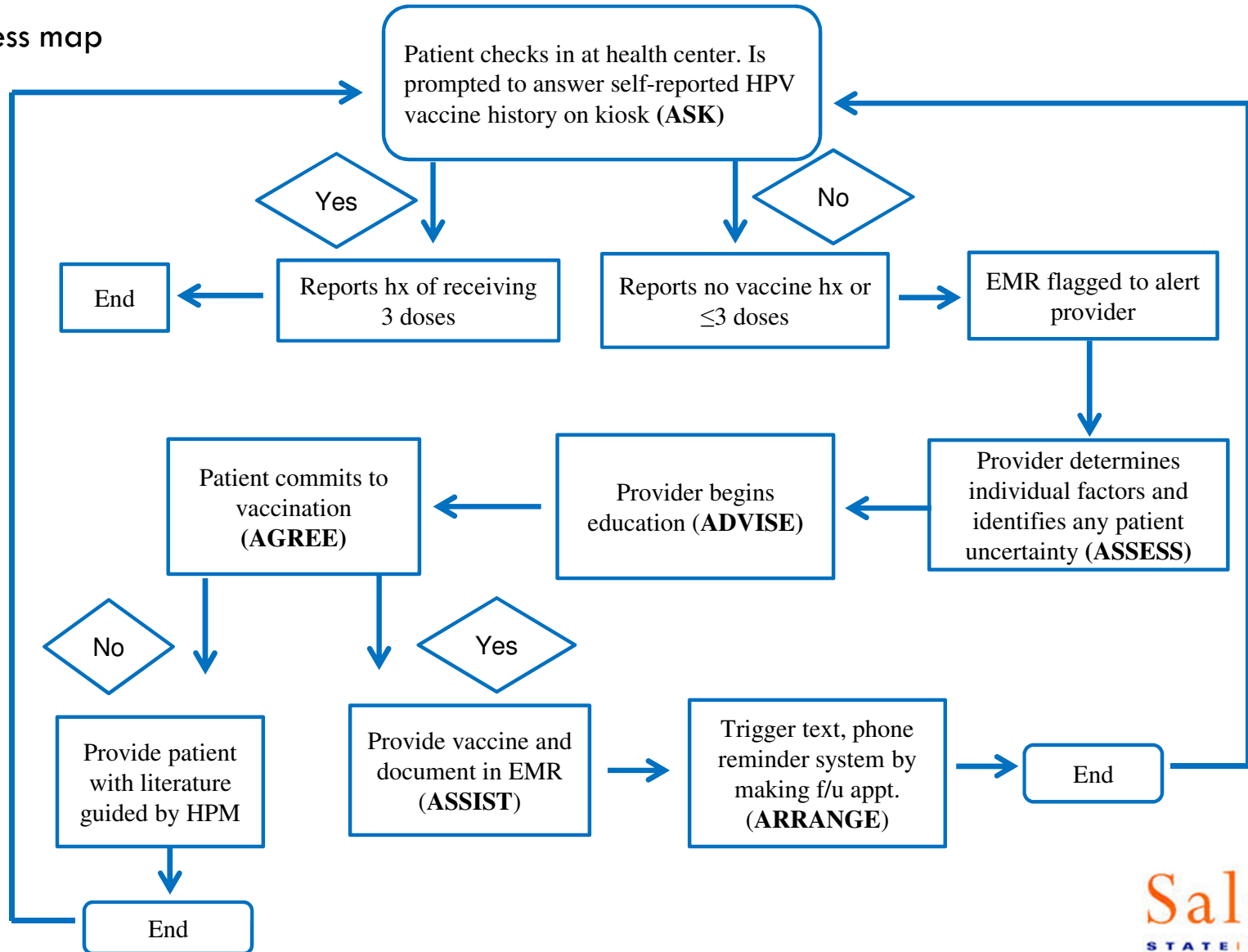
# Pender's Health Promotion Model



# 5 A's framework: Patient-Provider Communication

- Ask/Assess- Have you completed the HPV series? What concerns do you have?
- Advise- I think the HPV vaccine is important for you and here is why...
- Agree- Shared decision making with patient to vaccinate
- Assist- Provide immunization at time of visit
- Arrange- Schedule follow up and use reminders

## 5 A's process map



# Intervention: Acknowledgement and Provider Reminders

- ❖ All EHR templates (SOAP notes) edited to include measurable indicators
- ❖ Inclusion criteria: aged 18-26, male or female, no documented series completion, no medical contraindication

## Objective:

**Patient check-in survey and/or immunization history reviewed at or before the visit?**

Yes  No

## Plan:

**Strong HPV vaccine recommendation provided during the visit?**

Yes  No  NA (does not meet inclusion criteria or is medically exempt)

# Strong HPV vaccine recommendation

## TIPS FOR COUNSELING COLLEGE STUDENTS ABOUT HPV



Healthcare provider recommendation is one of the most important factors which influence HPV vaccine decision making for college students. Recommending the HPV vaccine series the same way you recommend other immunizations, such as the flu vaccine, can have a huge impact. Start the conversation by saying, “I see that you have not have started/completed the HPV vaccine series. I think these are really important for you and I want to talk to you about why”.

### Research States

College students’ report that receiving a strong recommendation for the HPV vaccine from their health provider is one of the most important factors influencing their vaccine decisions. Failing to provide this recommendation is a missed opportunity, and one of the most commonly cited reasons for not getting the vaccine.

### Try Saying

It’s important to understand that the HPV infection is one you will almost definitely be exposed to in your lifetime. This is why both men and women should get vaccinated. When the HPV vaccine is given before exposure, it can prevent certain cancers and genital warts. We know that this vaccine is both safe and incredibly effective. That’s why I’m recommending that you receive the HPV vaccine today.

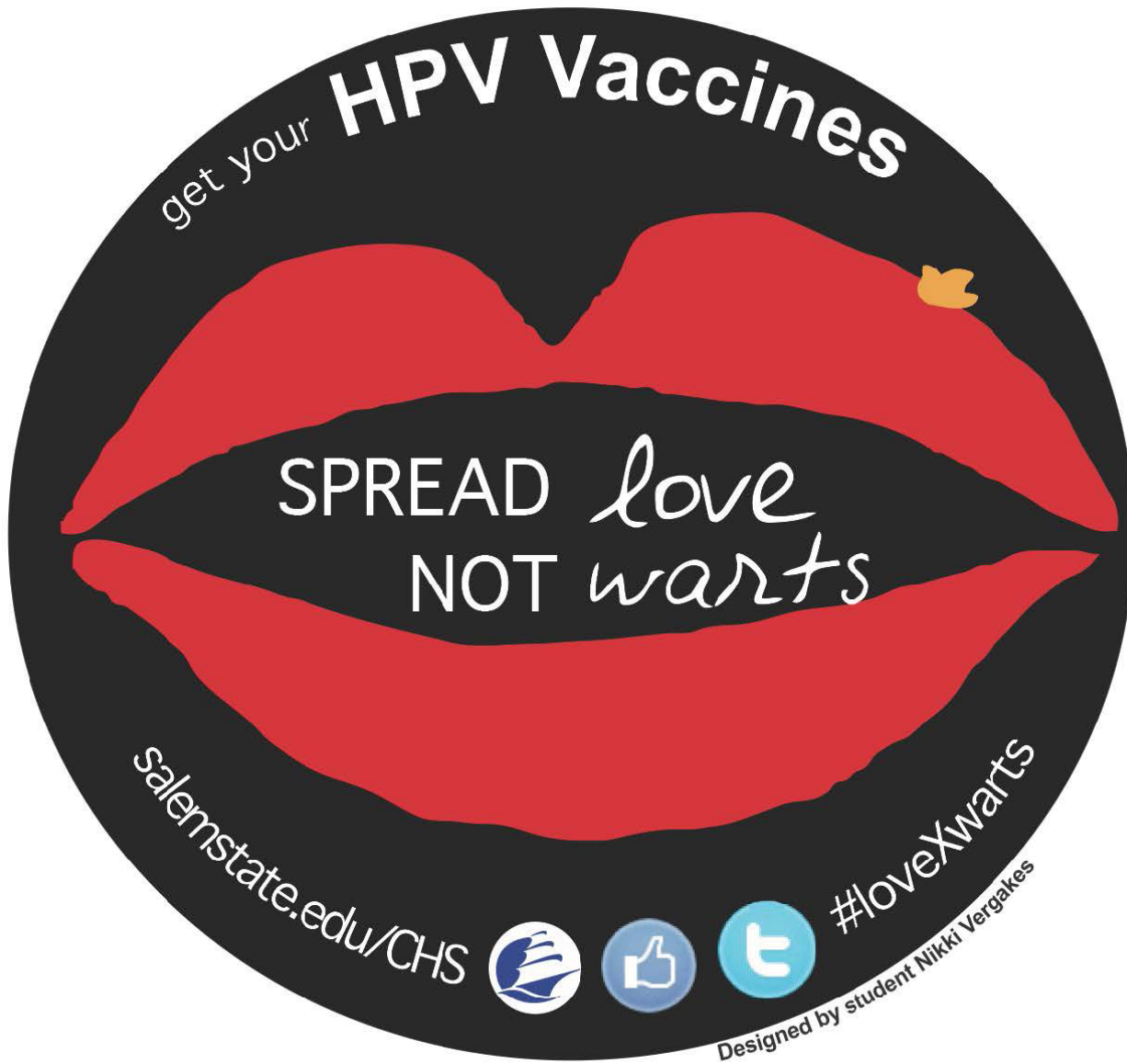
# Intervention: Patient Reminders

- Subsequent HPV vaccine appointments scheduled at 1<sup>st</sup> encounter
  - Text reminder
  - Email reminder
- Spreadsheet to track immunized students. Missed students received
  - Secure email message reminders
  - Phone Reminders



# Intervention: Increase community exposure to HPV awareness and vaccine availability

- ❖ Spread Love not Warts campaign
  - ❖ Contest: student logo design
  - ❖ Marketing, communications, social media
  - ❖ Bathroom stall posters
  - ❖ Campus outreach
  - ❖ Facebook, Twitter



Campus  
Campaign  
to  
increase  
student  
awareness

# MANY PEOPLE DON'T KNOW



# THAT THEY MIGHT HAVE IT.

LEARN ABOUT THIS COMMON INFECTION.

Human Papillomavirus (HPV)

If you've ever been sexually active, here's what you need to know. HPV is spread by skin- skin contact during intimate moments. Nearly every person who engages in sexual contact with another person during their lifetime will be exposed to HPV. Most will have no symptoms. HPV causes genital warts, and more importantly, cancer. A safe and effective vaccine can help protect both men and women against the most serious types of HPV.



For more information visit the counseling and health services (CHS) website [saalemstate.edu/chs/26991.php](http://saalemstate.edu/chs/26991.php). To make an appointment for your vaccine visit the student health portal [chsportal.saalemstate.edu](http://chsportal.saalemstate.edu) or call CHS at 978.542.6413.

# HUMAN PAPILOMAVIRUS (HPV) IF YOU'VE EVER BEEN SEXUALLY ACTIVE HERE'S WHAT YOU NEED TO KNOW.



HPV is spread by skin- skin contact during intimate moments. Nearly every person who engages in sexual contact with another person during their lifetime will be exposed to HPV. Most will have no symptoms. HPV causes genital warts, and more importantly, cancer. A safe and effective vaccine can help protect both men and women against the most serious types of HPV.

visit the counseling and health services (CHS) website [saalemstate.edu/chs/26991.php](http://saalemstate.edu/chs/26991.php). For your vaccine visit the student health portal [chsportal.saalemstate.edu](http://chsportal.saalemstate.edu) or call CHS at 978.542.6413.

# FACT AT LEAST 70% OF SEXUALLY ACTIVE PEOPLE WILL GET HPV.



### TALK TO YOUR HEALTH CARE PROVIDER ABOUT HOW THIS COMMON VIRUS CAN AFFECT YOUR HEALTH.

There are many different types of human papillomavirus (HPV), a common virus. Some types can infect the genital area of men and women. They are passed on by skin to skin contact. Most people who have intimate contact will get genital HPV- and not even know it. Usually, genital HPV is harmless. It has no symptoms. And it goes away on its own. But, genital HPV infection can cause problems such as genital warts and cancers that occur "below the belt". HPV is also the most common cause of oral-throat cancers.

The surest way to prevent HPV is not to have sex. If you decide to be sexually active, limit the number of partners you have. Condoms are not 100% effective in preventing all types of HPV infection. The HPV vaccine has been shown to be both safe and effective in protecting against some of the most serious types of HPV infection.

- Both men and women should get vaccinated with the HPV vaccine.
- Both men and women should know about the link between HPV and genital warts and cancer.
- Women should talk to their health care provider about getting a pap test.
- And partners should talk openly about HPV. Spread Love not Warts.

For more information visit the counseling and health services (CHS) website [saalemstate.edu/chs/26991.php](http://saalemstate.edu/chs/26991.php). To make an appointment for your vaccine visit the student health portal on Navigator or at [chsportal.saalemstate.edu](http://chsportal.saalemstate.edu) or call CHS at 978.542.6413.



## Bathroom Stall Campaign

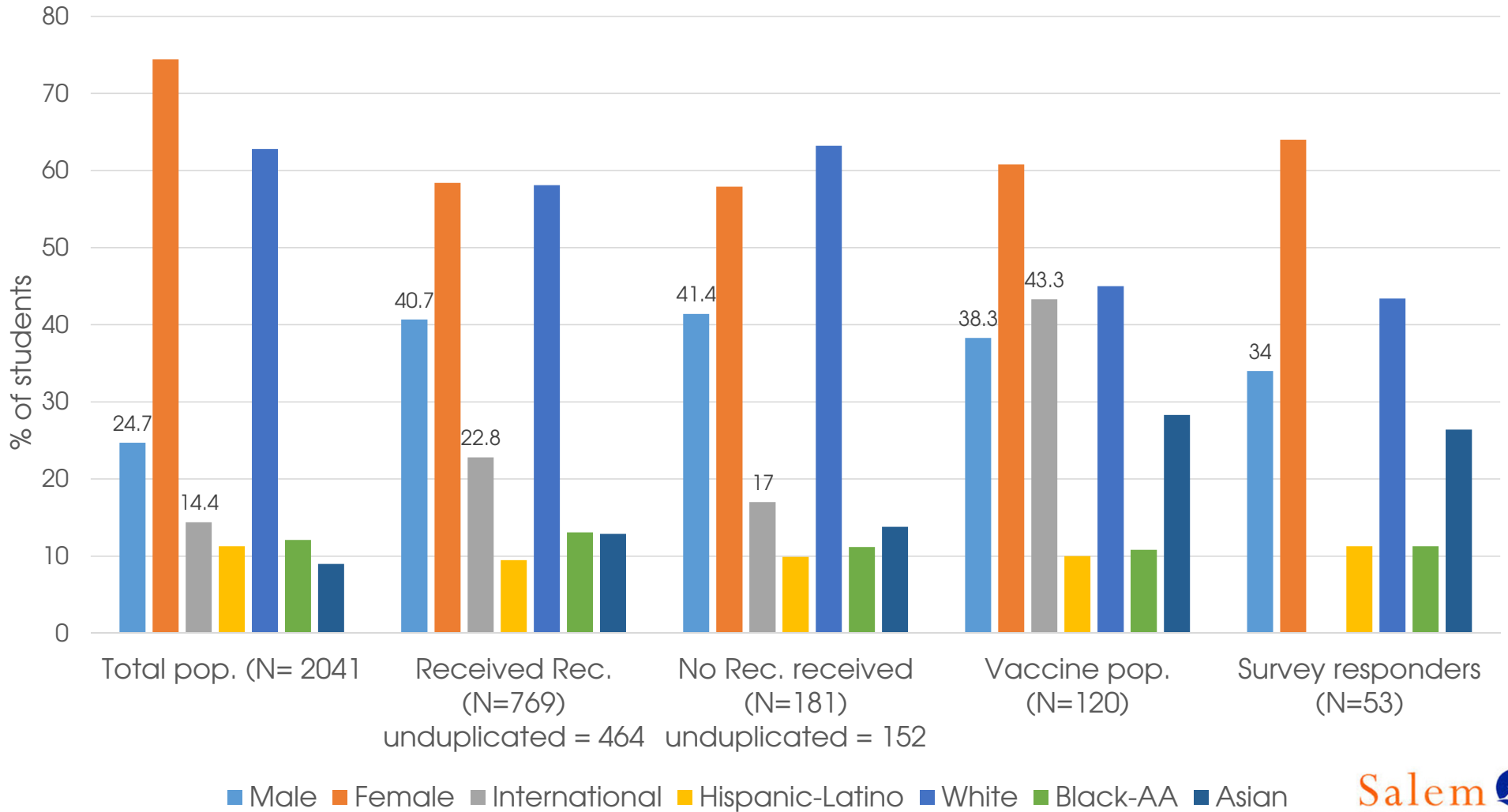
## Methods Summary Table

<b>Aim</b>	<b>Intervention</b>	<b>Evaluation Methods</b>	<b>Goal</b>
Prevent missed opportunities	EHR template reminders to acknowledge vaccine history	EHR reports of provider adherence to protocol	80% of notes will indicate provider acknowledgement
Increase patient reminders	Schedule f/u appt. to trigger email/text reminders	Chart audits for adherence to protocol	100% off follow up visits will be scheduled at initial visit
Increase the frequency of vaccine recommendation	EHR template reminders to provide vaccine recommendation	EHR reports of provider adherence to protocol	80% of eligible patients will receive recommendation
Increase community awareness	Campus wide marketing and communication	Anonymous feedback survey for reported motivations	≥50% will indicate somewhat –very important motivation

# Provider based objectives and outcomes

Total # visits to health center during fall semester, 2014 N=2041	Yes # (%)	No # (%)	NA based on inclusion criteria # (%)
Objective 1- Provider acknowledged HPV vaccination history at every clinical encounter	1877 (92%)	164 (8%)	-----
Objective 2- Provider gave strong HPV vaccine recommendation if patient met inclusion criteria	769 (38%) **81% after NA removed	181 (9%) **19% after NA removed	1091 (53%)
Objective 3- Follow up appointment made for subsequent HPV vaccine doses at initial appointment	135 (84.5%) **92.5% after NA removed	11 (7%) **7.5% after NA removed	12 (8%)

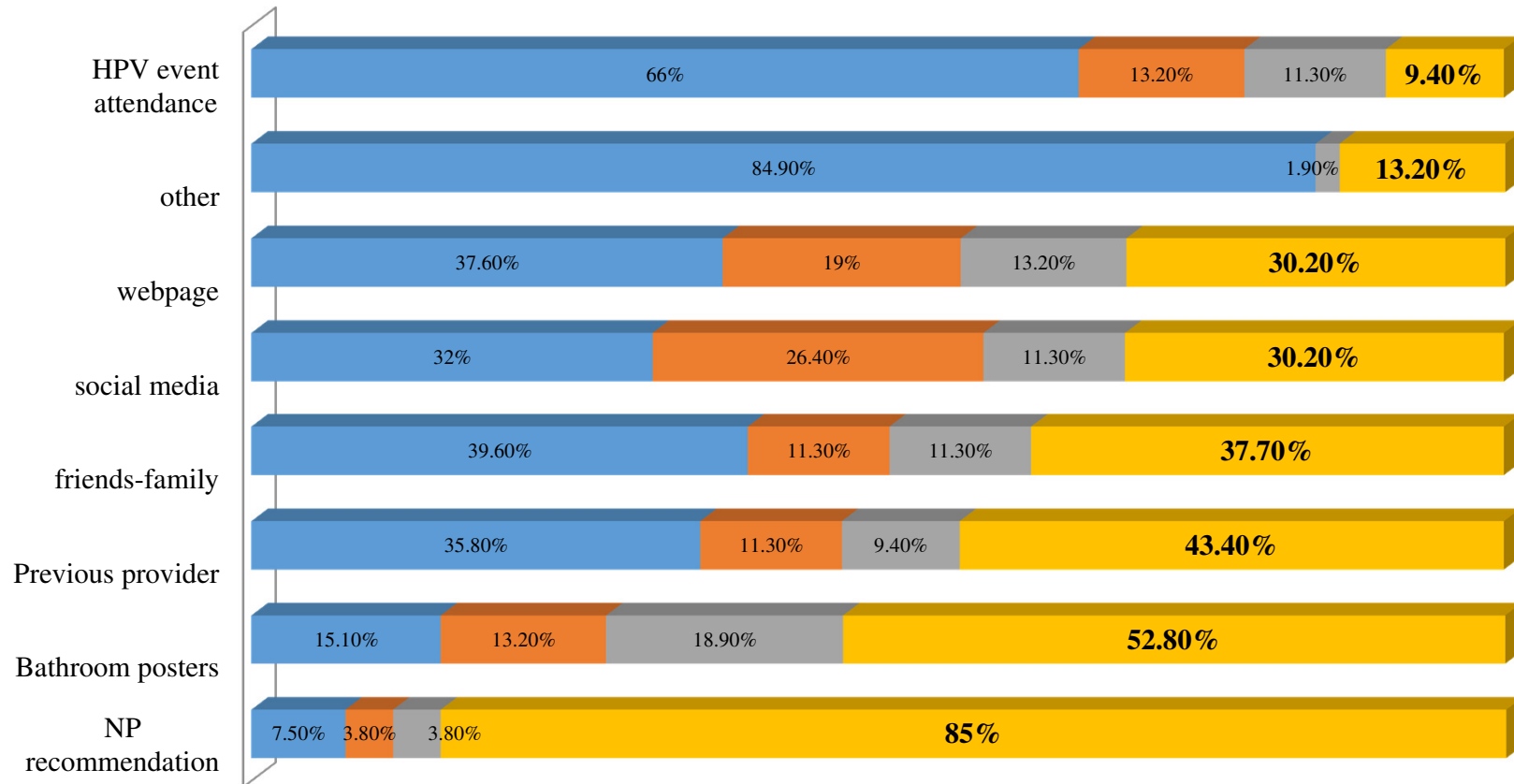
## Population Overview





## Patient Feedback Survey Results- Motivations for Vaccination

■ does not apply/NA 0  
 ■ not at all- not very important 1-2  
 ■ neutral 3  
 ■ somewhat-very important 4-5



# Summary

- ❖ A total of 158 HPV vaccines administered over the 16 week intervention
  - ❖ Represents a 13 fold increase from previous semester
  - ❖ 120 individual patients vaccinated
    - ❖ Disparate groups reached (International and males)
  - ❖ 8% series completed (n=12)
  - ❖ 80% received follow-up dose on-schedule



# Limitations and Considerations



Lessons  
Learned

- ❖ Difficult to obtain accurate baseline HPV vaccine history
- ❖ Insurance barriers
- ❖ Competing clinical demands
- ❖ Schedule challenges for follow up visits
- ❖ Consider campus culture when budgeting
- ❖ Long term internal enthusiasm may wane

# Interpretations and Conclusions

- ❖ Evidence-based interventions effective
  - ❖ Males and international students impacted
- ❖ Patient motivations consistent with previous findings in the literature
- ❖ Limited additional resources required
- ❖ Easily replicated at other student health centers



# Comments and Questions?



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