INVESTIGATING THE RELATIONSHIPS AMONG SEXUAL WELLBEING INIATIVES, TESTING NUMBERS, AND POSITIVITY RATES OF SEXUALLY TRANSMITTED INFECTIONS AT THE UNIVERSITY OF OREGON

by

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A THESIS

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Primary Thesis Advisor

Human immunodeficiency virus (HIV), chlamydia, gonorrhea, and syphilis are some of the most prevalent sexually transmitted infections (STIs) in the United States. Young adults account for roughly half of the positive STI test results in the US. Considering the typical age of university attendance in the US is 18-22, these students are particularly at risk of contracting STIs. Beginning in 2018, University of Oregon Health Services (UHS) implemented sexual wellbeing programs such as Sex Week and Protection Connection, a free sexual barrier program, to decrease STI rates on campus. It is hypothesized that the University of Oregon's implementation of sexual wellbeing programs increased the number of students getting tested for HIV, chlamydia, gonorrhea, and syphilis. Regression analyses were performed using HIV, chlamydia, gonorrhea, and syphilis tests between 2018 and 2024 submitted to the University Health Services using the software, Stata. Due to testing practices, chlamydia and gonorrhea test results were considered one test. A significant increase in syphilis tests taken at the University of Oregon was found (Table 1, b=110.583, 95% CI=[32.541,188.625], p=0.013]). Results indicate that there was no significant increase in the number of HIV tests taken per year (Table 1, b=65.345, 95% CI=[-169.7581, 300.4486], p=0.522). There was no increase in the chlamydia/gonorrhea (CTNG) tests taken per year (Table 1, b=-98.726, 95% CI=[-665.13,

467.6776], p=0.685). The results suggest while syphilis testing has increased since 2018, possibly due to UHS efforts, more programs should be focused on increasing testing for HIV, chlamydia, and gonorrhea.

In addition, HIV, chlamydia, gonorrhea, and syphilis positivity rates between 2018 and 2024 submitted to the University Health Services were compared to the HIV, chlamydia, gonorrhea, and syphilis positivity rates published in the American College Health Associations (ACHA) national STI Report using Stata. The ACHA data and University of Oregon data were converted to 10,000 person years. The report had 128 American universities participate (ACHA, 2025). The results suggest that the University of Oregon had significantly lower HIV, chlamydia, gonorrhea, and syphilis positivity rates than the ACHA national average between 2018 and 2024.

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I would also like to thank Director Long and her team at University Health Services for collecting and organizing the STI data needed for my thesis. My thesis would not have been possible without Director Long's trust in me and her teams' support in answering my tedious questions.

I am also incredibly appreciative of all of Dee Jolly's assistance with analyzing data, creating graphs, and using Stata. They spent hours on Zoom and in person helping me make sense of regression analyses and trend lines.

Finally, I would like to thank my Clark Honors College Representative, Dr. Lindsay Hinkle for her guidance and problem solving. As a sophomore in her Thesis Orientation, Dr. Hinkle helped me come up with an idea for my thesis and begin the first steps to completing my thesis.

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Literature Review

What are Sexually Transmitted Infections?

Sexually transmitted infections (STIs), formally called sexually transmitted diseases (STDs), are bacteria, viruses, or other infections transmitted from sexual activity, and are becoming increasingly more common in communities across the world (Mayo Clinic, 2025). Syphilis, gonorrhea, chlamydia, and HIV are some of the most prevalent STIs (CDC, 2024). In the United States, between 2018 and 2022, Gonorrhea rates increased by 11.1% and Syphilis increased by 78.9% (CDC, 2024). While these rates are increasing, STIs are highly preventable using sexual barrier methods such as, internal condoms, external condoms, and awareness through frequent STI testing and sexual education classes.

As conversations regarding sexual health become less taboo in certain communities, safe sex initiatives and public health policies promoting safe sexual health continue to be more frequently implemented. For example, the 2023 Oregon Youth Sexual Health Update stated "rates of sexually transmitted infections (STIs) are reduced" as their third priority (Oregon Health Authority). Additional safe sex initiatives include but are not limited to affordable STI testing, free safe sex contraceptives (such as condoms), and sexual health classes. Aside from contraceptives, regular screening is vital to preventing the spread of STIs. The CDC recommends sexually active people get screened for syphilis, chlamydia, gonorrhea, and HIV at least once a year. Screening is performed on asymptomatic patients and typically involves a blood serum test or genital swab. However, if someone has been exposed or has symptoms of an STI, it is recommended that they get tested for STIs. This typically consists of a genital swab or blood serum test. The biggest distinction between STI screenings and testing is that screening is a

preventable measure while a patient who is getting tested has already been exposed to the infection.

While STIs are easily preventable, most are uncomfortable, some are becoming more difficult to treat, others are uncurable, and in worst cases are deadly. Below is a review of the symptoms, testing procedures, and treatment for syphilis, chlamydia, gonorrhea, and HIV.

Chlamydia

While chlamydia is typically asymptomatic, if untreated it can cause pelvic inflammatory disease, infertility, infection in the testicles, and reactive arthritis (NHS, 2024). Because chlamydia is transmitted between one infected mucosal surface to another mucosal surface, a pregnant person with untreated chlamydia is at risk of passing the infection onto their child during birth. This can lead to pneumonia, an infection in the lungs, or conjunctivitis, an infection in the eye (NHS, 2024). Testing for chlamydia is site-specific meaning that areas of one's body used during sexual intercourse or presenting symptoms are tested. Biological men are usually tested via a urethral swab or urine sample while biological women are usually tested with a cervical swab or urine sample (CDC, 2024). If a non-sex related region of the body is tested for chlamydia the test will likely be negative considering the mucosal layer of that region did not come into contact with the infection. Chlamydia is typically treated in non-pregnant adults with the antibiotic Doxycycline but can also be treated with Azithromycin or Levofloxacin. Pregnant people who test positive for chlamydia are recommended to treat with Azithromycin or Amoxicillin (CDC, 2021).

Gonorrhea

Similarly to chlamydia, gonorrhea is often initially asymptomatic although, a burning sensation while urinating and discolored discharge from the vagina or penis can be symptoms.

Testing for gonorrhea is site specific and general screening either involves a urine sample or swabbing commonly used sexual organs such as a penis, vagina, anus, or mouth. If untreated, gonorrhea can cause epididymitis, pelvic inflammatory disease, or even disseminated gonococcal infection, which is when the infection spreads to the joints and blood (Iowa HHS, 2025). Preventative measures are becoming increasingly more important considering recent studies have found some cases of *N. gonorrhoeae*, a strain of bacteria that causes gonorrhea, to be resistant to a type of antibiotics known as oral cephalosporins (Iowa HHS, 2025).

Syphilis

Syphilis is an STI caused by the bacteria, *Treponema pallidum* transmitted through vaginal, anogenital, orogenital, or blood to blood contact (Tudor, 2024). There are four stages of syphilis: primary, secondary, latent, and tertiary/late. Primary syphilis is marked by a "firm, round, painless ulcer at the site of entry of an infecting organism" 10 to 90 days after exposure (Tudor, 2024). During this stage, the bacteria quickly spread from the site throughout the cerebrospinal fluid leading nearly 70% of patients with primary syphilis to have cerebrospinal fluid changes similar to neurosyphilis (Tudor, 2024). If untreated, primary syphilis can develop into secondary syphilis. Symptoms of secondary syphilis include but are not limited to, enlarged lymph nodes, fevers, joint pain, and skin lesions. When untreated for months, typically the person's symptoms will go away which is known as the latent stage. When untreated for many months or years, syphilis can develop into tertiary syphilis which may result in aortic aneurysms, meningitis, strokes, or aphasia (Tudor, 2024). Syphilis can be particularly dangerous if untreated due to the risk of the infection spreading to the brain and nervous system. This type of infection is called *neurosyphilis* and can lead to an altered mental state, hearing loss, muscle weakness, and in most severe cases, death (CDC, 2025a). There is a high likelihood that a pregnant person

with untreated syphilis will pass the infection to their child. This is known as congenital syphilis. Congenital syphilis can cause stillbirth, brain problems, bone deformities, and death shortly after birth (CDC, 2025b)

Human Immunodeficiency Virus (HIV)

Human immunodeficiency virus (HIV) is a virus that attacks one's immune system and is spread through contaminated blood, semen, vaginal fluid, rectal fluid, or pre-seminal fluids contact with one's mucosal membrane (CDC, 2025c). There are three stages of HIV: acute infection, chronic infection, and acquired immunodeficiency syndrome (AIDS). During the acute stage of HIV, people typically experience flu-like symptoms and have high levels of HIV in their blood. If untreated, it will develop in a latent stage known as the chronic stage as this stage progresses one's HIV viral load will increase. If untreated, one will likely develop AIDS which is marked by having a CD4 cell count below 200 cells per mL in their blood (CDC, 2025c). AIDS typically severely damage one's immune system, so it is vital that someone with AIDS immediately begins HIV treatment. While HIV is incurable, medications such as PrEP (pre-exposure prophylaxis) and PEP (post-exposure prophylaxis) can prevent the infection of HIV in a person. In addition, a person with HIV can undergo antiretroviral therapy to lower their HIV viral load which in many cases allows the infected patient to have sexual intercourse without transmitting the virus to their partner (CDC, 2025c).

Due to the asymptomatic nature of chlamydia and gonorrhea and latent stages of syphilis and HIV, regular testing and practicing safe sex is pertinent to slowing the spread of the STIs.

University of Oregon Sexual Wellbeing Programs

STI rates are alarmingly high among Americans ages 15-24 and account for nearly half of new STI cases in the US annually while only accounting for a quarter of the US population

(Shannon, 2018). Considering most American college students are between the ages of 18 and 23, college students are at a high risk transmitting an STI. Thus, safe sex initiatives on college campuses are necessary to ensure good sexual health among students. The 2023 American College Health Association's Sexual Health Services Survey found that out of 134 US universities, only 62% of university health centers provided patients information about STI testing, vaccinations, and other preventative care (ACHA, 2025) Many students do not have reliable transportation, health insurance or a steady income, all which create barriers to receiving proper STI testing if not provided by their university. Evidently, universities must provide safer sex supplies and sexual wellbeing programs if they want to ensure the health and safety of their students.

The University of Oregon's University Health Center (UHS) has many safer sex programs that are accessible to all students. In February 2019, the UHS implemented their campus-wide safe sex initiative called the Protection Connection (Kalman, 2019). The Protection Connection aims to lower student STI rates by providing students with free sexual barrier methods, such as condoms, in high traffic campus locations. As of 2025, there are eight Protection Connection Hot Spots: the Recreation Center, Lillis Hall, Oregon School of Law, Duck Rides, Center for Multicultural Academic Excellence, and two in the Erb Memorial Union (Long personal communication, 2025).

In addition to the Protection Connection, the UHS offers other sexual wellbeing programs during the year and particularly during their annual "Sex Week." Sex Week is a week during February where the UHS sponsors sexual wellbeing events, such as Sex Toy Bingo, daily. During the fall 2025, the UHS hosted Pillow Talk, a meeting where peers can come together and discuss sexual wellbeing topics such as sex toys (Long personal communication, 2025). For

many students, these programs serve as an important introduction to sexual wellbeing. Educating students on a highly stigmatized topic can help students feel more comfortable to ask questions to peers and professionals regarding their sexual health ultimately leading to safer sex.

Aside from running health programs, the UHS provides students with various medical services from healthcare providers such as acute care, dentistry, and gynecology in the campus health center. Students can get screened and tested for chlamydia, gonorrhea, HIV, syphilis, hepatitis B and hepatitis C through UHS. However, the UHS uses an "opt-in" model for students where they must schedule an appointment with a provider in the acute care clinic prior to testing or screening to ensure they are receiving the correct tests (Hejinian personal communication, 2025). Students getting regular STI screening were previously only be screened for HIV, chlamydia, and gonorrhea. Although, due to the global increase in syphilis, the UHS began including syphilis screening as part of regular STI screening in mid 2023.

According to the experts behind the CDC, abstinence, vaccination, reduced number of sex partners, condoms, and frequent testing are effective forms of preventing the transmission of STIs (CDC, 2024). Male latex condoms are highly effective sexual barriers that are worn on a penis during sexual intercourse. Condoms are often seen as a primary contraceptive and protection against STIs due to their efficacy. However, while condoms do serve as a source of protection both physically and mentally for sex, they are not 100% effective. A study found that "condoms (5.3%) broke before or during intercourse and 67 condoms (3.5%) slipped off during sex" (Steiner et al, 1993). Thus, it is important for sexually active individuals to get screened for STIs every three to six months while monitoring personal symptoms and health (CDC, 2024).

While preventative measures for safe sex are becoming more understood, their effectiveness is limited to their accessibility. Without insurance, STI screening and testing can

cost between $100 and $400. However, many students at the University of Oregon qualify for CCare, a state-wide Medicaid waiver for appointments related to contraceptive care. A student enrolled in CCare may be eligible to have their medical fees waived for an appointment where they discuss contraception and STI screening. Most students are eligible for CCare considering that the program is open to Oregonians who have incomes at or below 250% of the federal poverty level (Oregon Health Authority, 2022).

Lane County Sexual Wellbeing Programs

While the Protection Connection is accessible to most University of Oregon students, it is inaccessible to non-UO student residents of Lane County. Since the Protection Connection is funded by the University of Oregon, the program is specifically for University of Oregon students. Thus, other residents of the communities of Eugene, Springfield, and the other 10 cities in Lane County are unable to access the program. Currently, Lane County has above average STI transmission rates in comparison to other Oregon and nationwide counties (Bull, 2018). The 2015 County Health Rankings reported that there were 460 reported cases of chlamydia for every 100,000 Lane County resident (Bull, 2018). Similarly to the University of Oregon, Lane County officials have developed safe sex initiatives in hopes of lower the alarmingly high STI rates in the county. However, many of these programs have been significantly reduced due to budget cuts.

Until 2024, Lane County's STI Program ran a program called "Just Checking" where anyone in Lane County could pay $20 and get screened for STIs. This program allowed residents without insurance or those who did not want their insurance to get billed to get tested for an affordable price. Unfortunately, due to cost, the program was significantly reduced in 2024. As of 2025, only very select at-risk residents are eligible for $20 STI testing through the Lane

County STI Program. Some circumstances that qualify a resident for the $20 testing include being unhoused and being uninsured with many sexual partners. Other local STI testing options for residents in Lane County include Planned Parenthood and HIV Alliance, an Oregon based non-profit dedicated to treating HIV. Both Planned Parenthood and HIV Alliance bill patients' insurance which can be problematic for students who are still on their parents' insurance. However, if insurance is not billed, an STI testing appointment can cost hundreds of dollars.

In addition, even while being community focused, residents do not have the luxury of simply walking to campus. Instead, they must find reliable transportation and dedicate time to getting to the county treatment center. Then, they must be able to finance and maintain treatment upon a potential positive test.

Research Objectives and Hypothesis

This study aims to examine the relationships between sexual wellbeing programs, STI testing numbers, and STI positivity rates of students at the University of Oregon. I hypothesized that implementation of the Protection Connection at University of Oregon would correlate with a decrease in STI positivity rates and an increase in STI testing among students.

Methods

UHS Data

All data usage in my thesis complied with the University of Oregon's Institutional Review Board's requirements since the data sets identifiable data had been removed by UHS administration before being given to me (determined to be exempt by Institutional Review Board on Sept. 25, 2025). I analyzed three data sets from the UHS: syphilis (RPR) test results, chlamydia/gonorrhea (CTNG) test results, and HIV test results. The STI test results were

collected by the University of Oregon Health Services (UHS) and were collected between academic year (AY) 2017-2018 and academic year 2024-2025. Chlamydia and gonorrhea are combined into one test at UHS, called CTNG. Thus, there is only one data set for the two STIs. CTNG testing was sourced from the Oregon State Public Health Lab, Quest Diagnostics, and UHC Laboratory at University of Oregon. HIV tests are first conducted at the UHC Laboratory at University of Oregon however, if a student receives a positive result they are sent to Quest Diagnostics for confirmatory testing. Syphilis testing is conducted at the UHC Laboratory at University of Oregon and has only been included in a regular STI screening at the UHS since 2023.

UHS Data Analyses

Regression analyses were performed using the software, Stata on HIV, CTNG, and syphilis tests between AY 2017-2018 and AY 2024-2025 submitted to the University Health Services. Confidence intervals, P-value, and t-statistics were recorded for each STI test data set. All CTNG tests in the data set taken at Quest Diagnostics, UHC Laboratory at University of Oregon, and Oregon State Public Health Lab were totaled to serve as one test type. In addition, all HIV tests in the data set conducted at the UHC Laboratory at University of Oregon and Quest Diagnostics were totaled to serve as one test type. Then a positivity rate was run for each year of each test by using the equation:

$$\left(\frac{\#\ positive\ tests}{\#\ all\ tests}\right)(100) = positivity\ rate$$

Next, I compared the number of syphilis, HIV, chlamydia, and gonorrhea tests run on students at the University of Oregon to the national averages of college students reported by the American College Health Association, abbreviated as ACHA (ACHA 2023 Sexual Health Services Survey Report, 2025). I compared the ACHA data to UO data between AY 2017-2018

and AY 2022-2023 since the 2023 ACHA STI Report was the most recent ACHA STI Report published. I first had to average the ACHA chlamydia and gonorrhea positivity rates since the ACHA STI Annual Report reports chlamydia and gonorrhea tests as two separate tests unlike UO who uses one test for chlamydia and gonorrhea.

Considering the ACHA data was reported in CY while the UO data was reported in AY, I first had to convert the data into 10,000 person years using two equations. The equation used to convert the UO data into 10,000 person years is:

$$(\frac{positivity\ rate}{enrollment})(10{,}000)(\frac{4}{3})$$

The enrollment numbers were found on the University of Oregon's Registrar's Office website. The positivity rate was the average positivity rate of the specific STI being analyzed for the particular year. Finally, the equation was divided by (4/3) to account for the fact that academic years only include data from September to June which is three fourths of a calendar year. While calendar years are 12 months and begin in January and end in December.

The equation used to convert ACHA data to 10,000 person years is:

$$(\frac{positivity\ rate}{population})(10{,}000)$$

The equation was not divided by (4/3) considering the ACHA data is reported in calendar years. The annual population of the United States was taken from the US Census.

A one-sample test of proportion was run on the two data sets for each STI test to calculate a z-score and confidence interval. A limitation of the data is that AY 2022-2023 at the University of Oregon begins in September 2022 and ends in June 2023 while CY 2023 consists of January 2023 to December 2023. However, because most students are not on campus during

the summer I do not expect that many of test's results reported in the ACHA data are from June to August which are not included in the UHS data set.

Student Survey

I created a 25-question anonymous survey on Qualtrics composed of questions relating to sexual health, sexual wellbeing programs at the University of Oregon, and STI testing. The purpose of the study was to investigate student sexual activity, sexual health practices, and use of UHS sexual wellbeing programs. Only current University of Oregon students 18 years old or older were eligible to take the survey. 54 students at the University of Oregon were recruited by text, email, and word of mouth and anonymously took my survey. Graphs were made using responses from Qualtrics. The University of Oregon Institutional Review Board granted me exemption from approval since the survey did not record any identifiable data on September 25, 2025.

Results

UHS Data

I found a significant increase in the number of syphilis tests taken per year at the University of Oregon (Table 1, b=110.583, 95% CI=[32.541,188.625], p=0.013]). However, results indicate that there was no significant change in the number of HIV tests taken per year (Table 1, b=65.345, 95% CI=[-169.7581, 300.4486], p=0.522) and no significant change in the CTNG tests taken per year (Table 1, b=-98.726, 95% CI=[-665.13, 467.6776], p=0.685).

	Regression Coefficient (b)	95% Confidence Interval (CI)	p-value (p)	R-squared
Syphilis	110.583	[32.541,188.625]	0.013	0.6671
HIV	65.345	[-169.7581, 300.4486]	0.522	0.0716
CTNG	-98.726	[-665.13, 467.6776]	0.685	0.0294

Table 1: Regression values of number of tests taken by students at the University of Oregon, AY 2017-18 to 2024-25

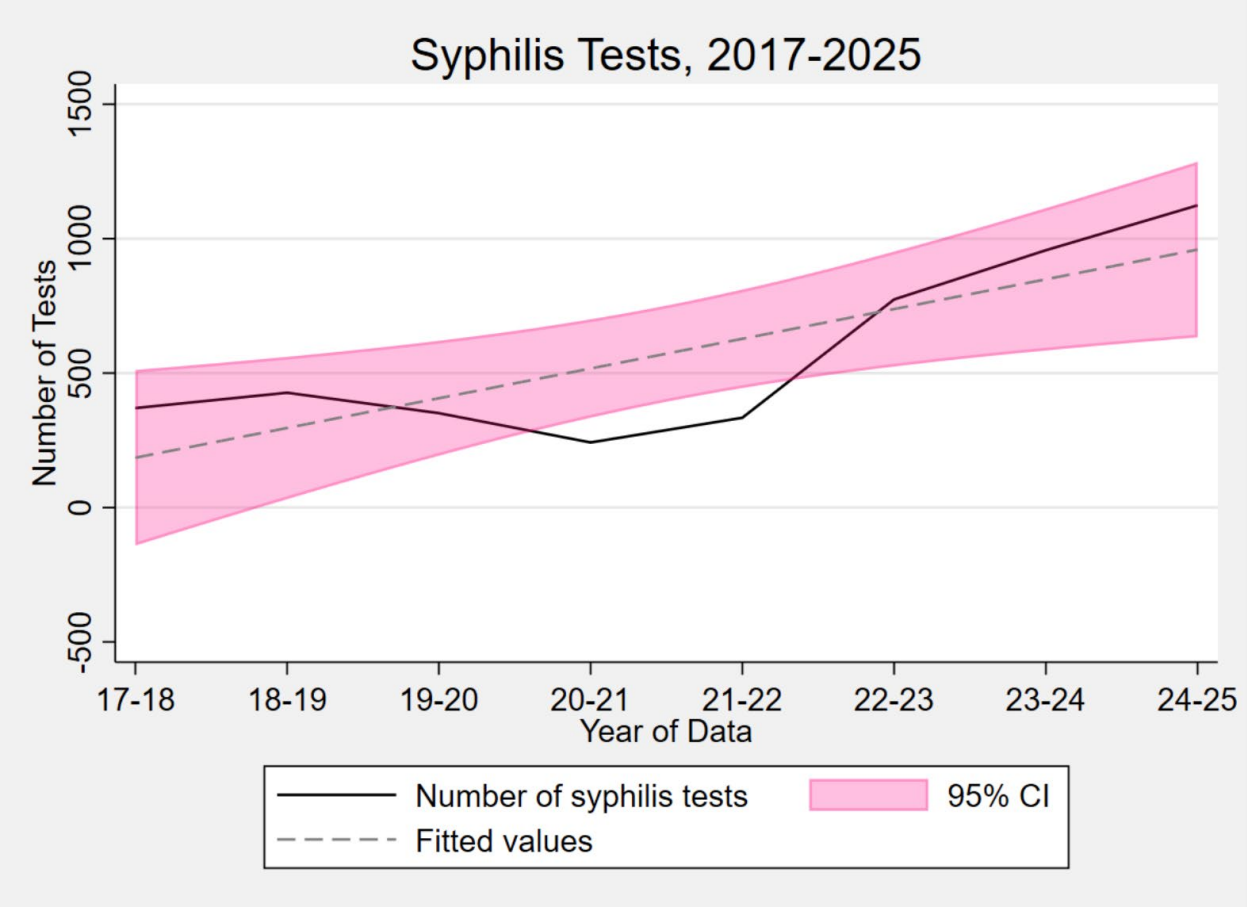

Figure 1: Number of syphilis tests taken by students at the University of Oregon, AY 2017-18 to 2024-25

Note: UO data is AY

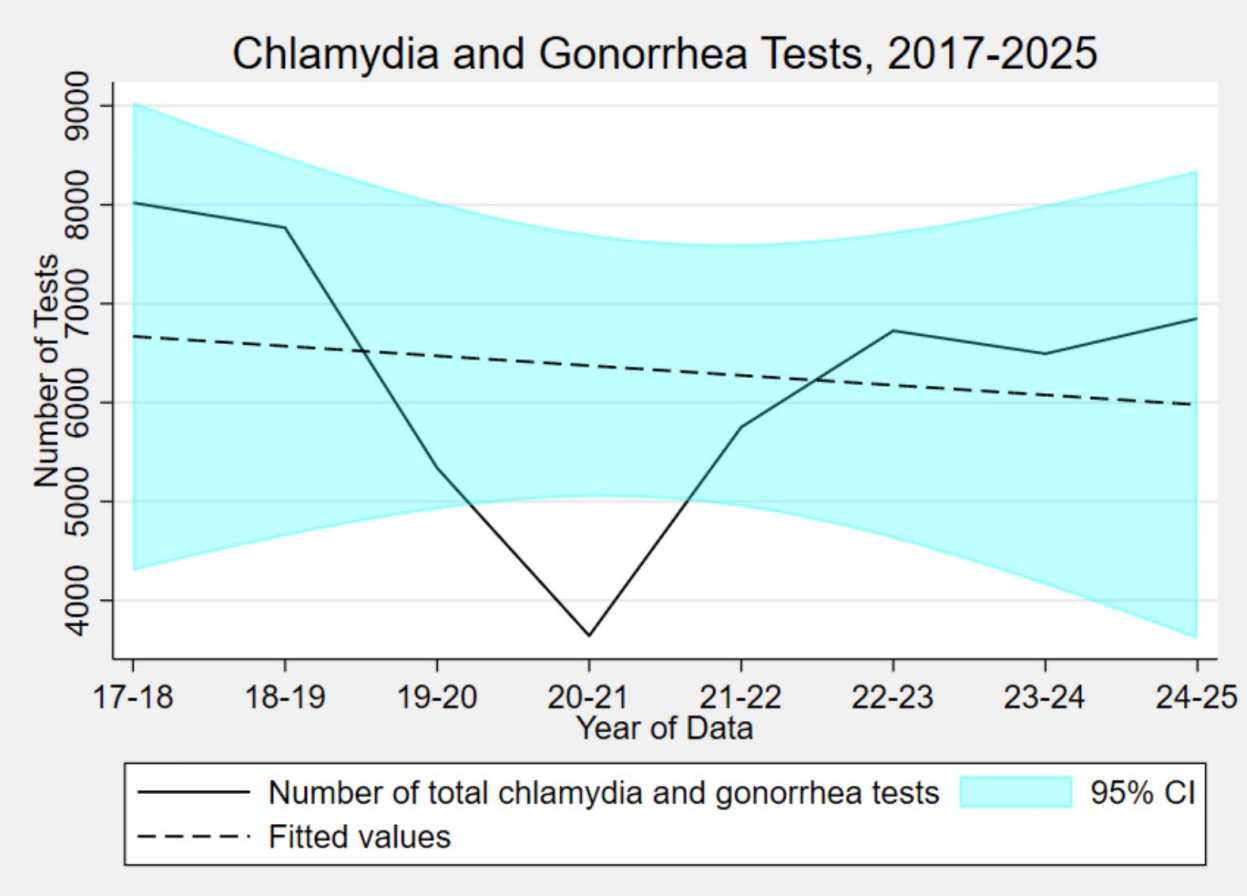

Figure 2: Chlamydia tests taken by students at the University of Oregon, AY 2017-18 to 2024-25

Note: UO data is AY

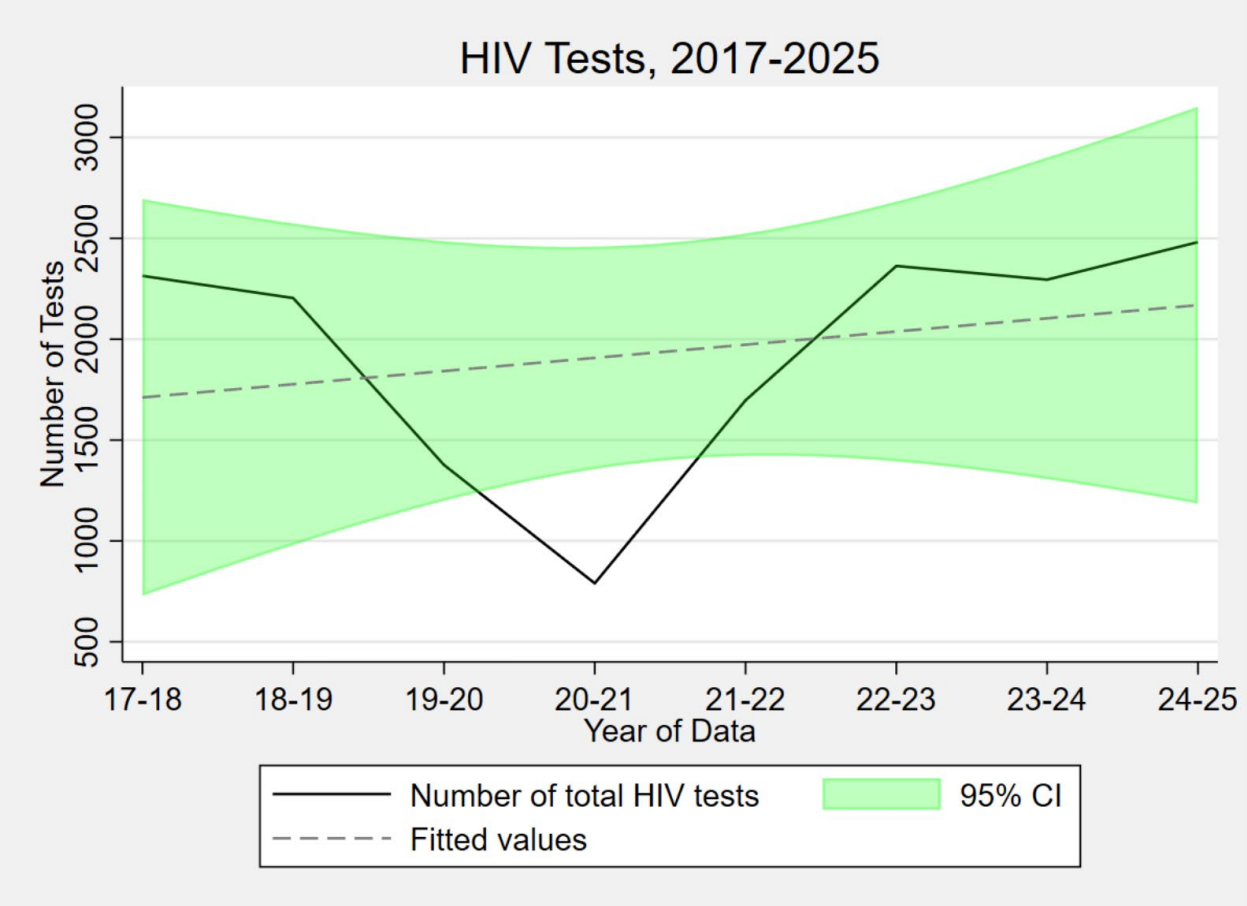

Figure 3: Number of HIV tests taken by students at the University of Oregon, AY 2017-18 to 2024-25

Note: UO data is AY

No significant increase was found in the positivity rates of syphilis tests over time (Table 2, b=0.103, 95% CI=[-0.2427, 0.1258], p=0.345). Similarly, no significance was found among the positivity rates of HIV tests over the same period (Table 2, b=-0.0007, 95% CI=[-0.1174, 0.1160], p=0.989). Finally, no significance was found among the positivity rates of the CTNG tests over time (Table 2, b=-0.058, 95% CI=[-0.2427,0.1258], p=0.467).

	Regression Coefficient (b)	95% Confidence Interval (CI)	p-value (p)	R-squared
Syphilis	0.103	[-0.2427, 0.1258]	0.345	0.1489
HIV	-0.0007	[-0.1174, 0.1160]	0.989	0.0716
CTNG	-0.058	[-0.2427,0.1258]	0.467	0.0294

Table 2: Regression Values of positivity rates of STI tests taken by students at the University of Oregon

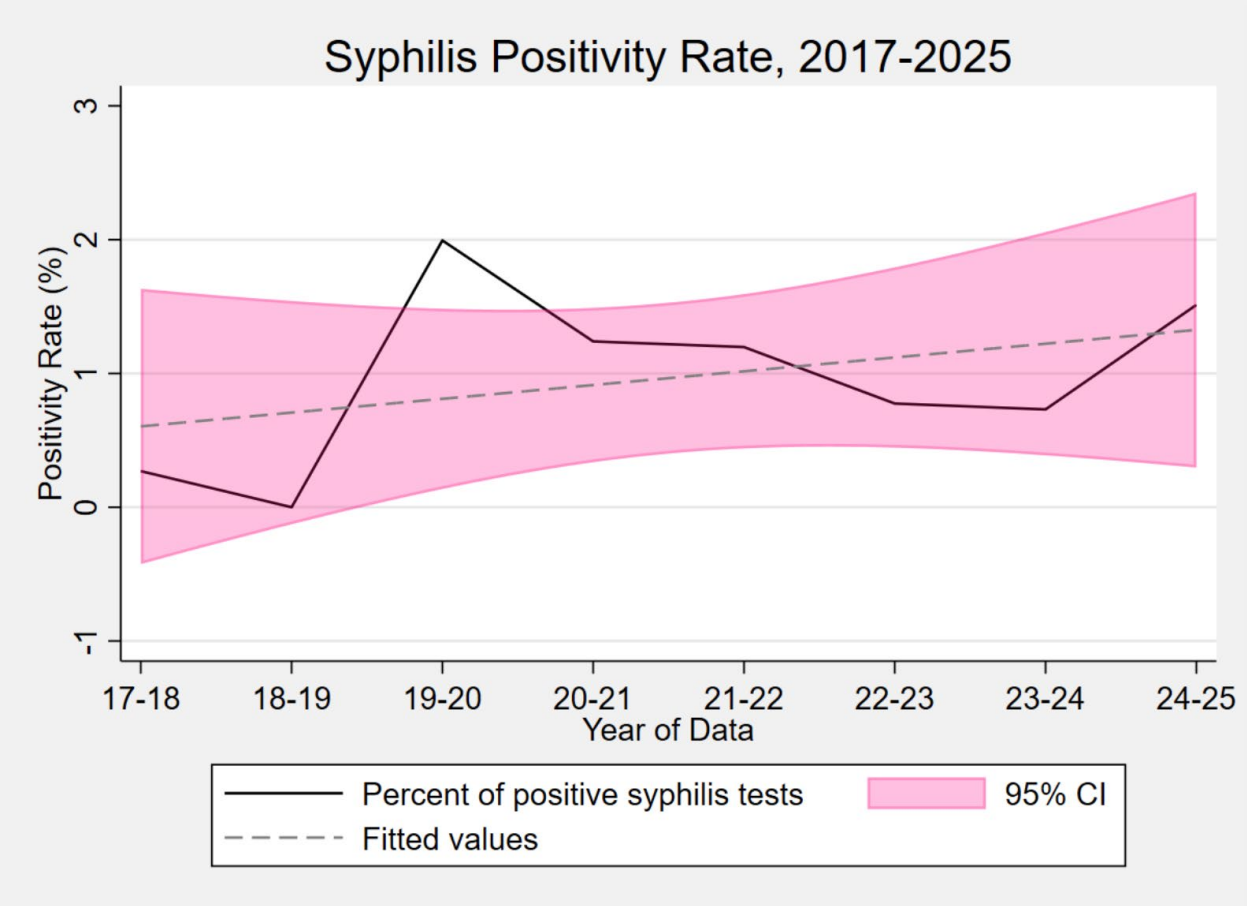

Figure 4: Positivity rate of syphilis tests, by students at the University of Oregon AY 2017-18 to 2024-25

Note: UO data is AY

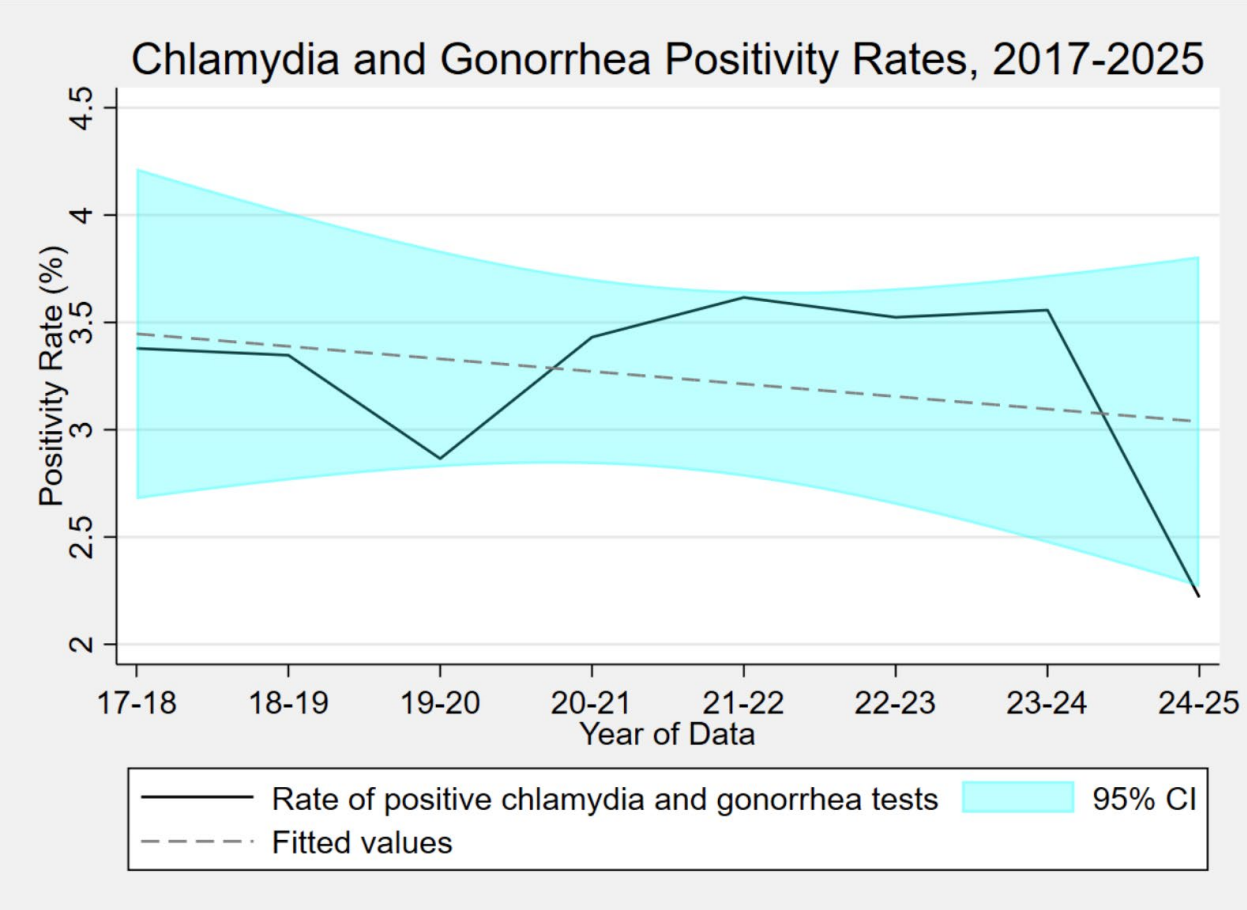

Figure 5: Positivity rate of CTNG tests, by students at the University of Oregon AY 2017-18 to 2024-25

Note: UO data is AY

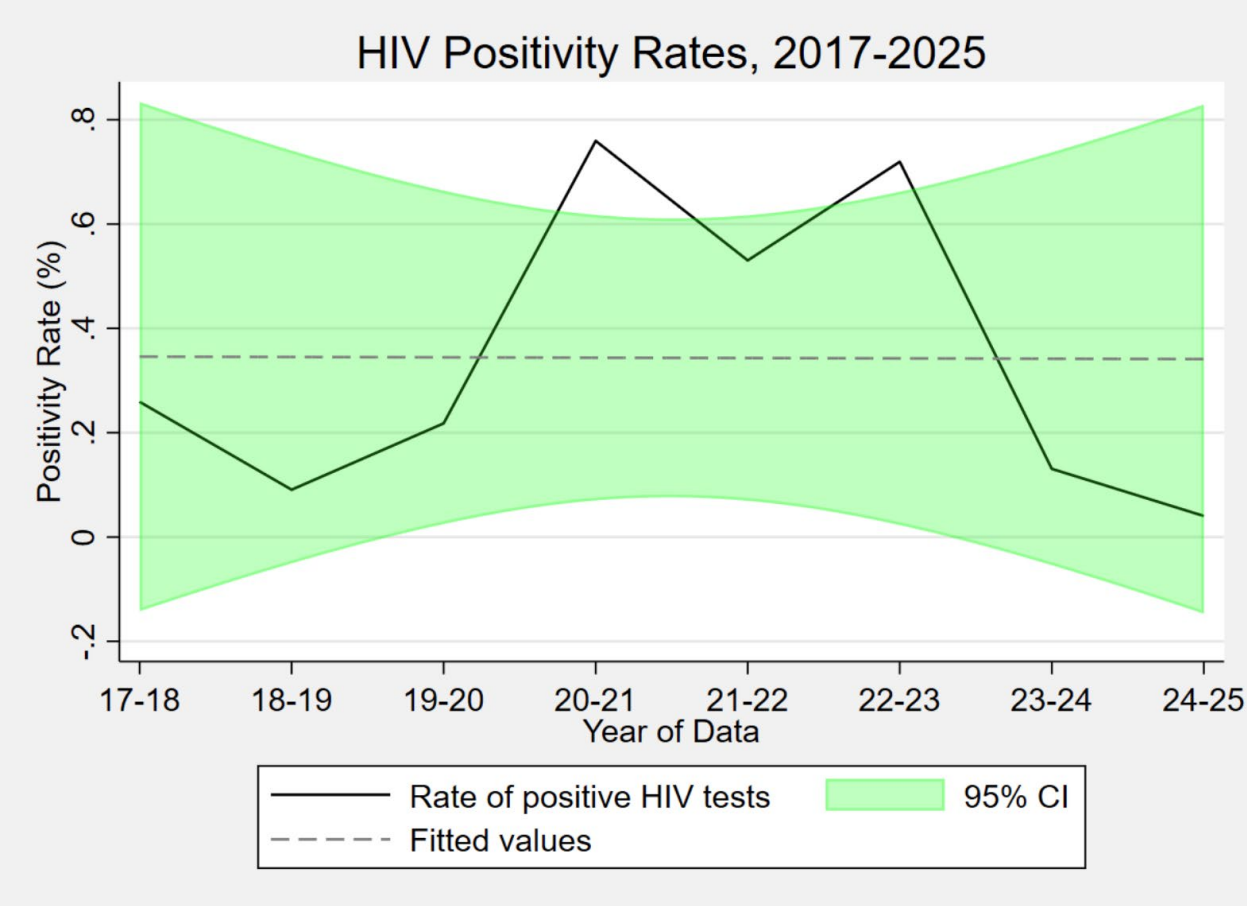

Figure 6: Positivity rates of total HIV, by students at the University of Oregon AY 2017-18 to 2024-25

Note: UO data is AY

A regression analysis was run between the positivity rates and number of tests for each type of STI test. Significance was not found between the positivity rates and number of tests for syphilis tests (Table 3, b=-0.002, 95% CI=[-0.0047, 0.0016], p=0.262). In addition, there was no significance found between the positivity rates and number of tests for HIV tests (Table 3, b=-0.0002, 95% CI=[-0.0007, 0.0002], p=0.205). Similarly, significance was not found between the positivity rates and number of tests for CTNG tests (Table 3, b=-0.000, 95% CI=[-0.0004, 0.0003], p=0.778).

	Regression Coefficient (b)	95% Confidence Interval (CI)	p-value (p)	R-squared
Syphilis	-0.002	[-0.0047, 0.0016]	0.262	0.3551
HIV	-0.0002	[-0.0007, 0.0002]	0.205	0.2976
CTNG	-0.000	[-0.0004, 0.0003]	0.778	0.1071

Table 3: Regression values for comparison of positivity rates and number of tests, by students at the University of Oregon AY 2017-18 to 2024-25

UHS Data and ACHA Data

The results indicate that University of Oregon had significantly lower syphilis, HIV, chlamydia, and gonorrhea positivity rates than the American College Health Association's national average positivity rates. There was a spike in chlamydia, gonorrhea, and HIV positivity rates in the ACHA data in CY 2021. However, there was no spike in chlamydia, gonorrhea, and HIV positivity rates at the University of Oregon in AY 2020-21 (Fig. 7 & 8).

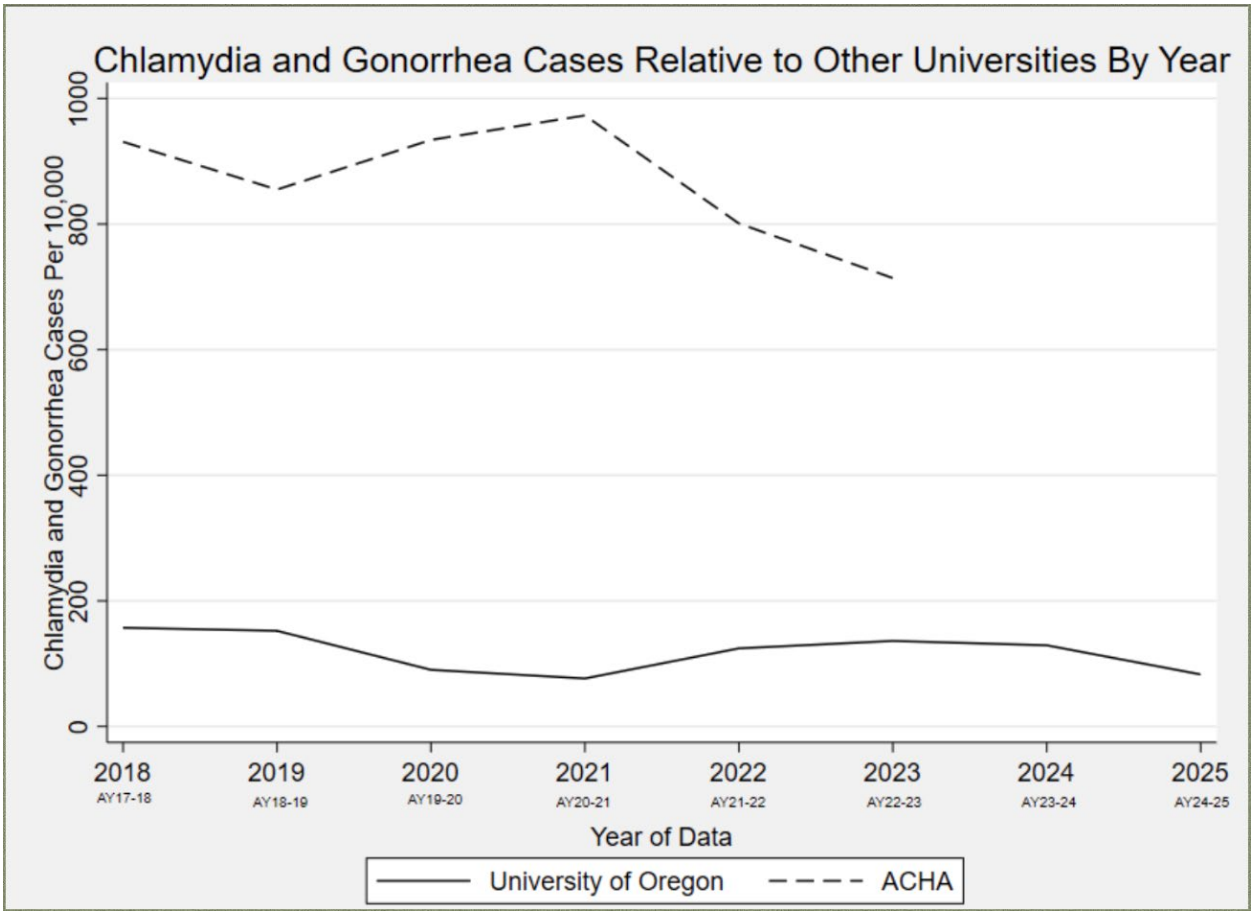

Figure 7: Chlamydia and gonorrhea cases at the University of Oregon relative to other Universities 2018 to 2025.

*Other Universities' STI rates are taken from the American College Health Association's (ACHA) annual STI survey. ACHA data is in CY, UO data is in AY

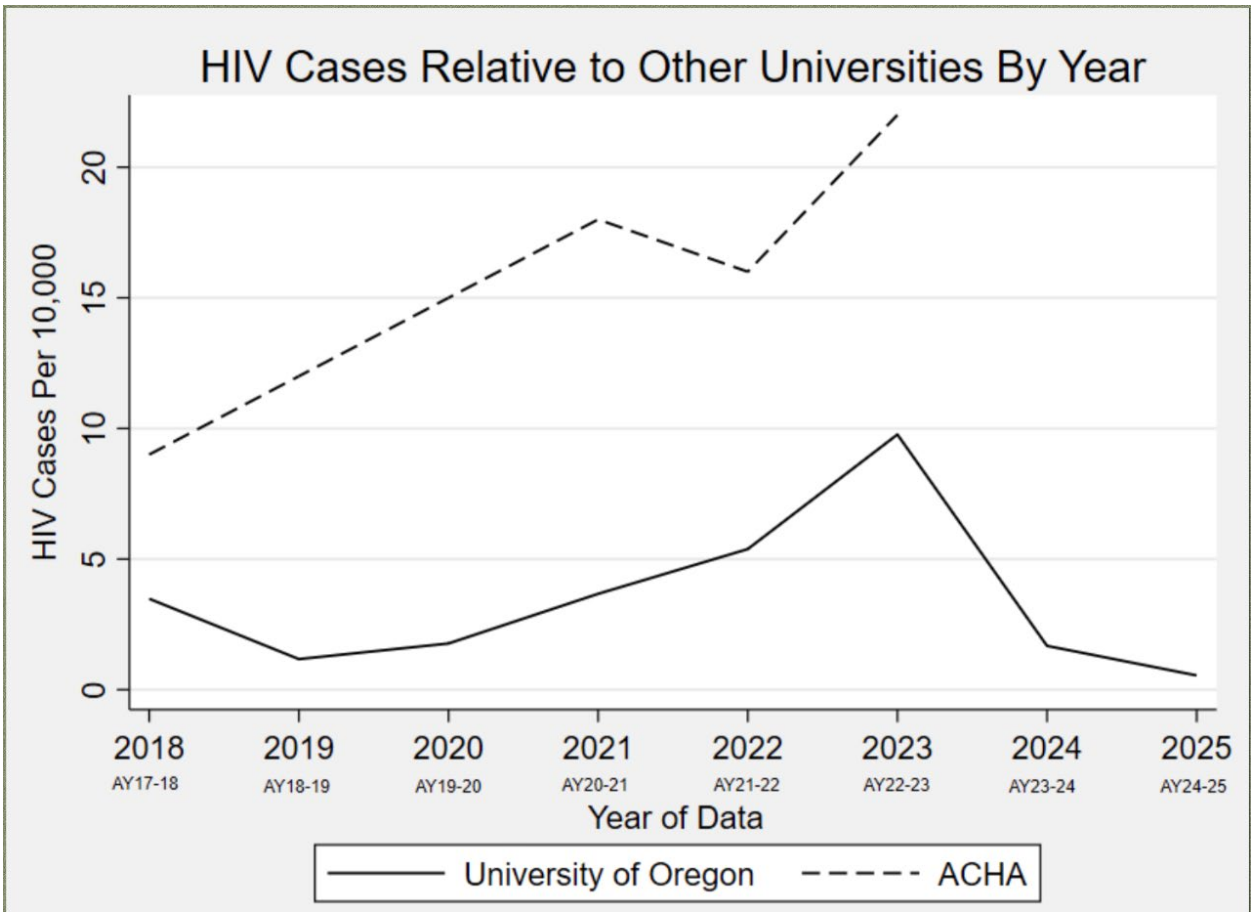

Figure 8: HIV cases at the university of Oregon relative to other universities 2018 to 2025.

*Other Universities' STI rates are taken from the American College Health Association's (ACHA) annual STI survey. ACHA data is in CY, UO data is in AY

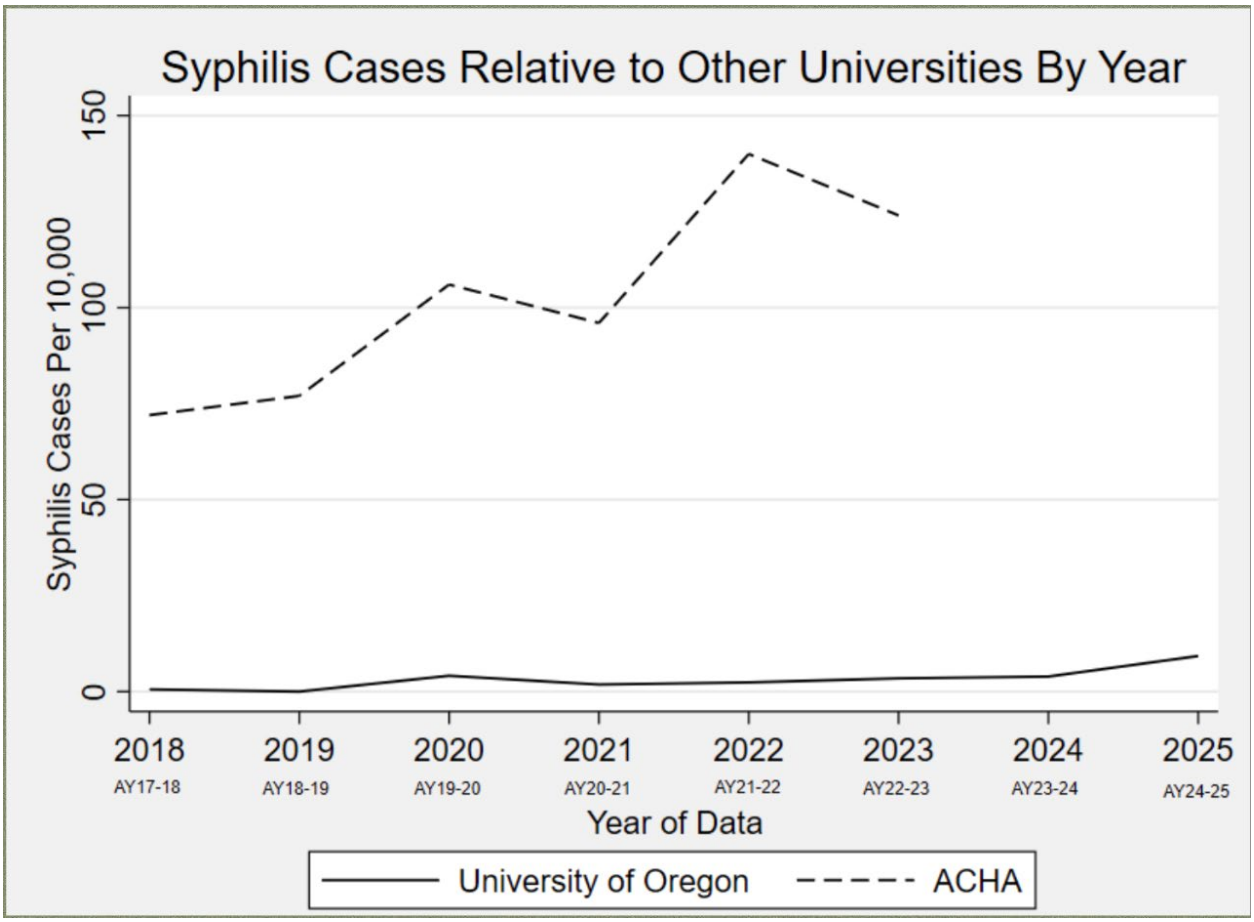

Figure 9: Syphilis cases at the University of Oregon relative to other universities 2018 to 2025.

*Other Universities' STI rates are taken from the American College Health Association's (ACHA) annual STI survey. ACHA data is in CY, UO data is in AY

Survey results

The survey was created on Qualtrics and was advertised to students at the University of Oregon through text, email, and announcements at university club meetings. The survey was open from October 2, 2025, to November 2, 2025. There were 54 survey responses. All respondents were current students at the University of Oregon and between the ages of 18 and 25. 33% of respondents identified as male, 63% of students identified as female, and 4% of

students identified as non-binary. Results indicate that the results of a survey of the entire student population would be useful for guiding policy at University of Oregon.

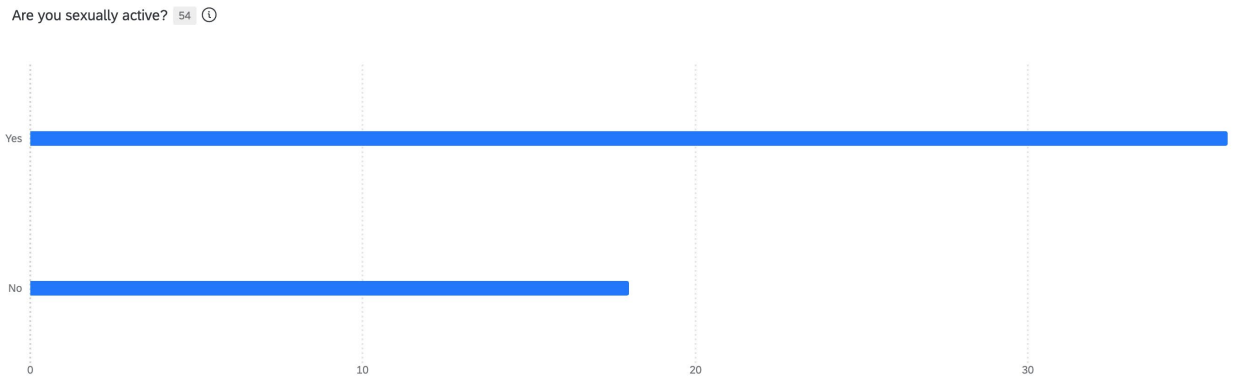

Figure 10: Number of sexually active students among respondents at UO

N=54, 36 (66.67%) students responded yes, 18 (33.33%) students responded no

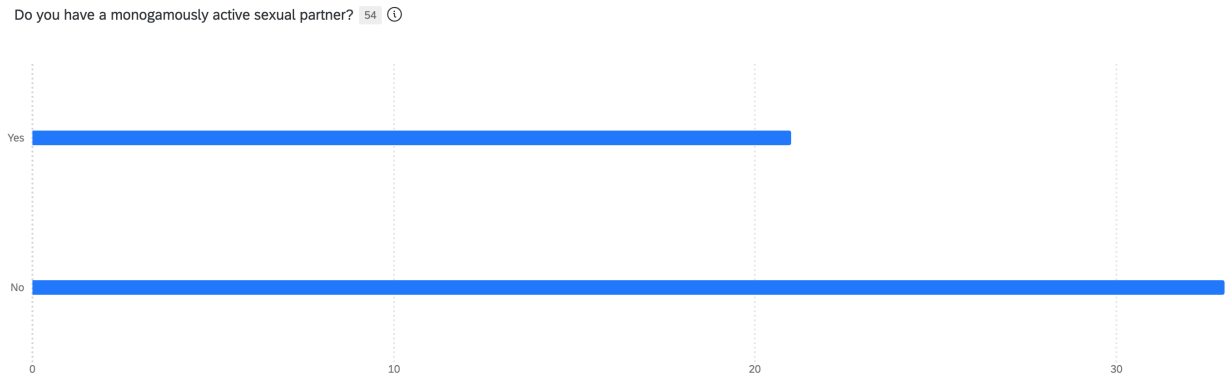

Figure 11: Number of respondents with a monogamously active sexual partner at UO

N=54, 21 (38.89%) students responded yes, 33 (61.11%) students responded no

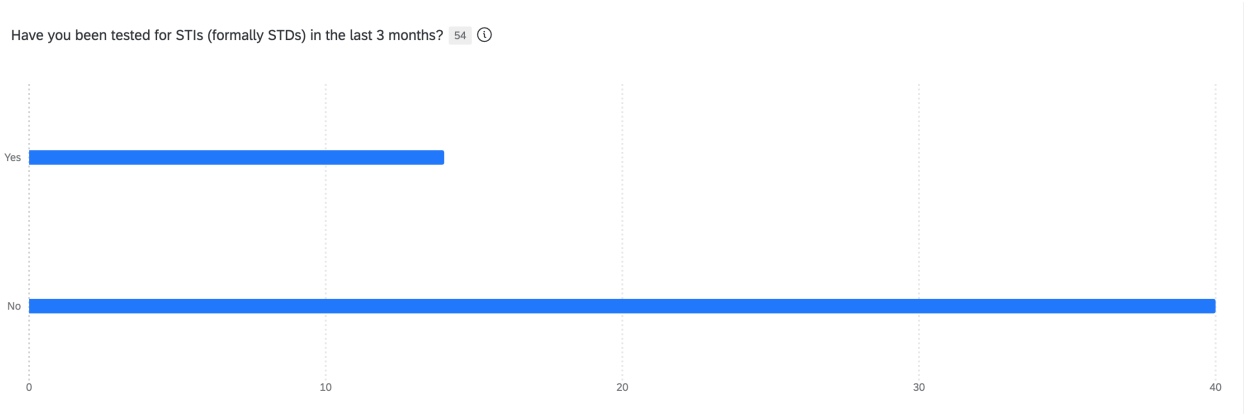

Figure 12: Respondents who have been tested for STIs in the last 3 months of the survey taken

N=54, Yes=14 (25.93%), No=40 (74.07%)

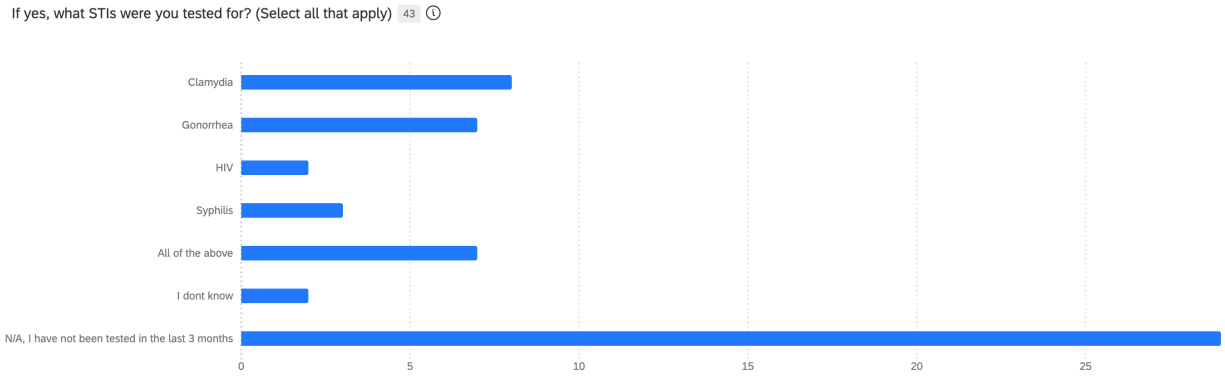

Figure 13: STIs respondent students were tested for

N=54, chlamydia=8 (14.81%), gonorrhea=7 (12.96%), HIV=2 (3.70%), syphilis=3 (5.56%), all of the above=7 (12.96%), I don't know=2 (3.70%), have not been tested in the last 3 months=29 (53.70%)

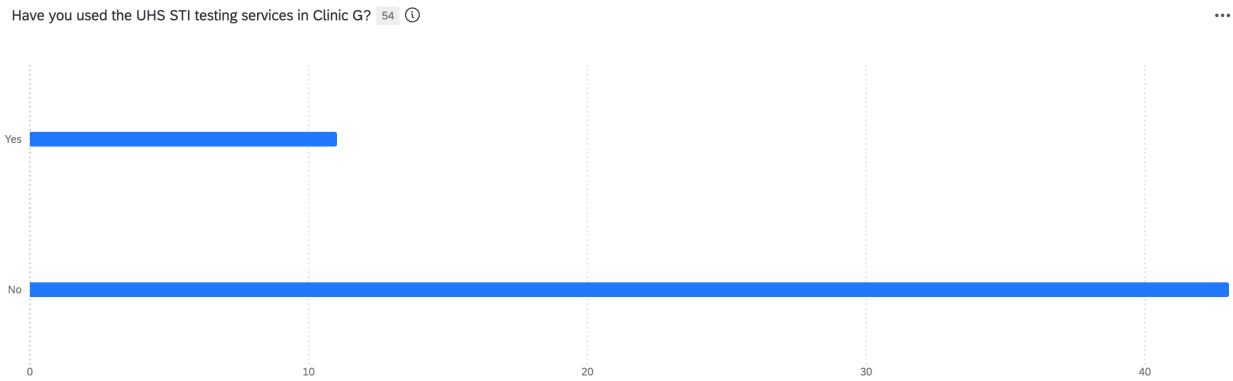

Figure 14: Respondent students who have used STI services in Clinic G

N=54, Yes=11 (20.37%), No=43 (79.63%) *Clinic G is the testing clinic at the University of Oregon UHS Clinic

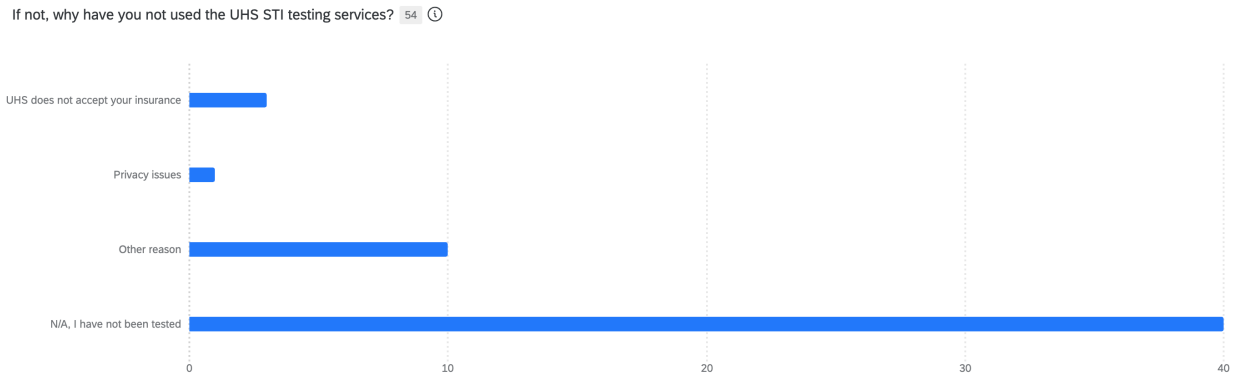

Figure 15: Reasons for not using UHS STI testing services

N=54, UHS does not accept your insurance=3 (5.56%), privacy issues=1 (1.85%), other reason=10 (18.52), I have not been tested=40 (74.07%)

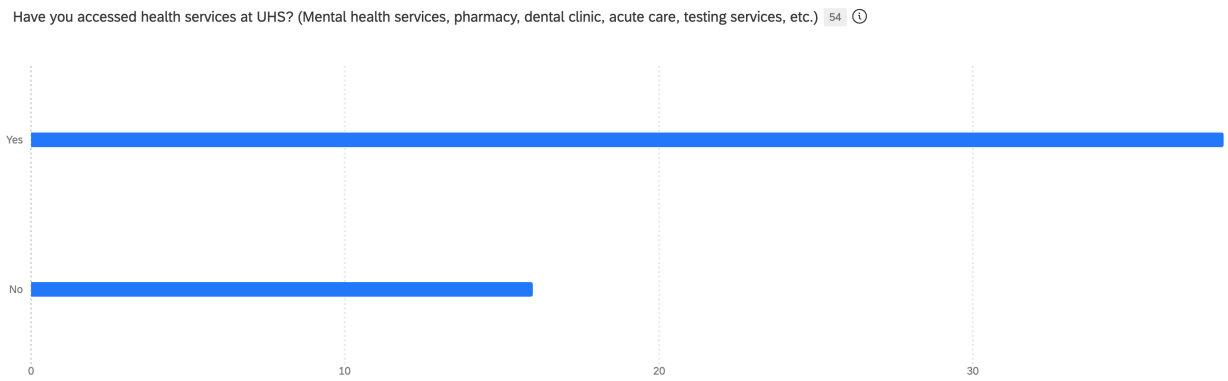

Figure 16: Respondents who have accessed health services at UHS

N=54, Yes=38 (70.37%), No=16 (29.63%)

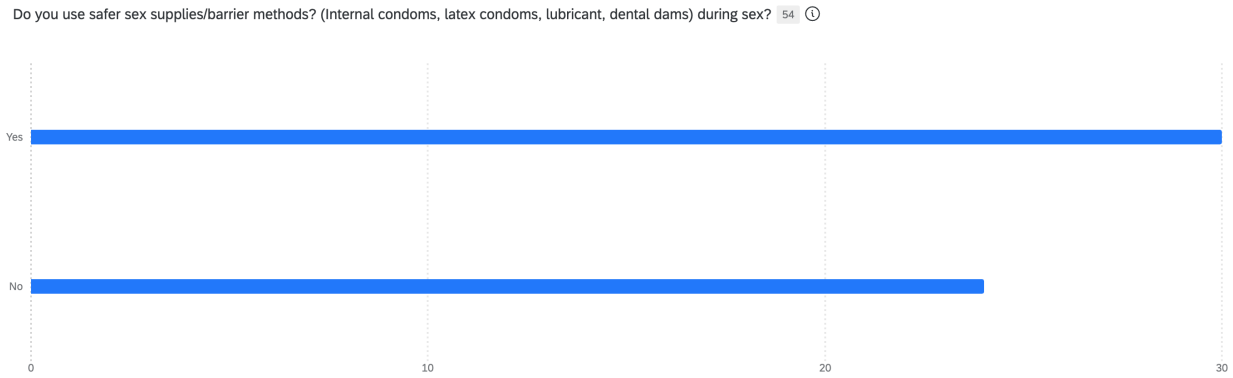

Figure 17: Number of respondents who use sexual barrier methods

N=54, Yes=30 (55.56%), No=24 (44.44%)

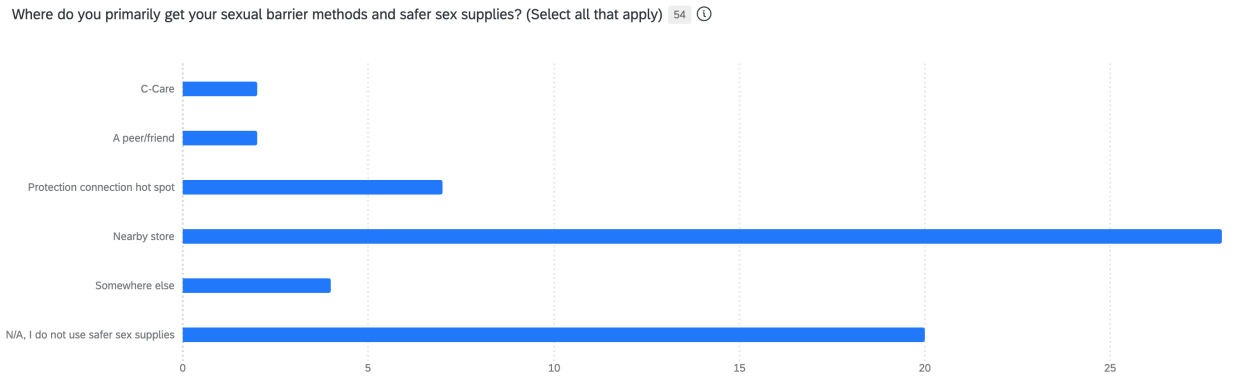

Figure 18: Where respondents get sexual barrier methods

N=54, C-Care=2 (3.70%), a friend=2 (3.70%), protection connection hot spot=7 (12.96%), nearby store=28 (51.85%), somewhere else=4 (7.41%), I do not use barrier methods=20 (37.04%)

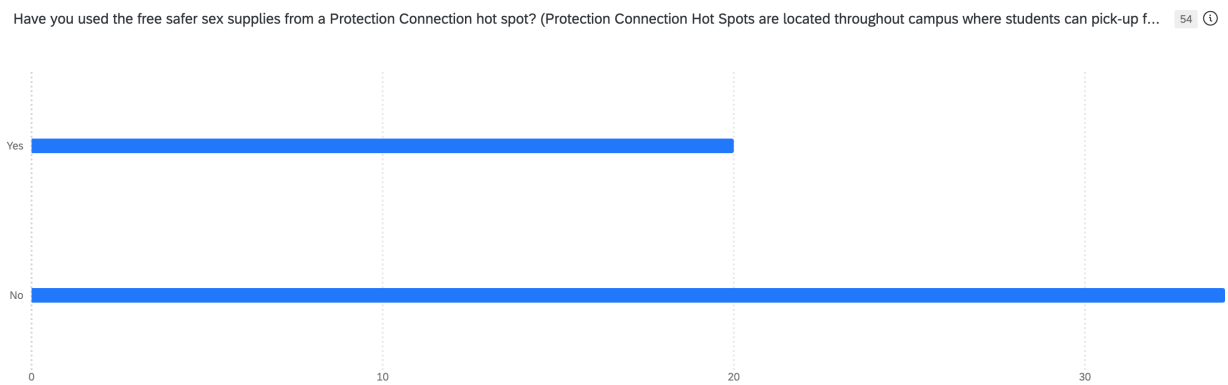

Figure 19: Number of respondents who have used Protection Connection hot spots

N=54, Yes=20 (37.04%), No=34 (62.96%)

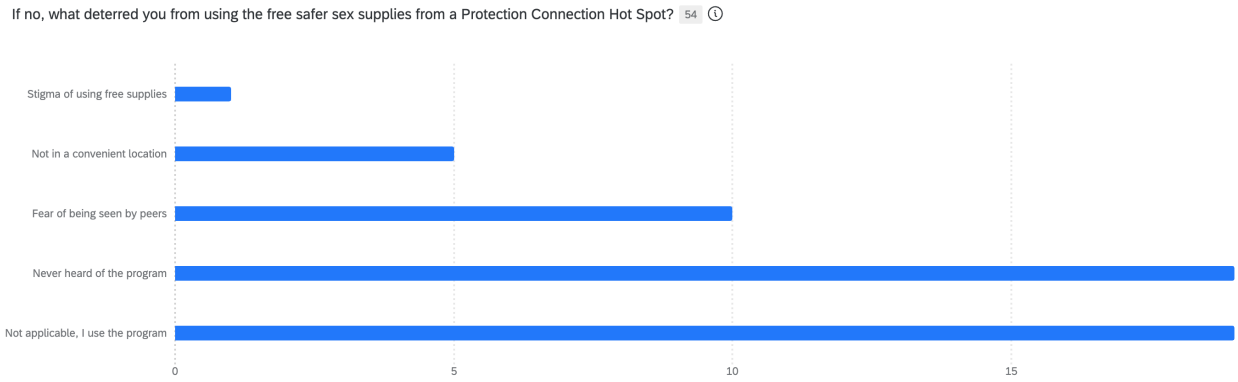

Figure 20: What deterred respondents from using Hot Spots

N=54, stigma=1 (1.85%), poor location=5 (9.26%), fear of being seen by peers=10 (18.52%), never heard of program=19 (35.16%), N/A I use the program=19 (35.16%)

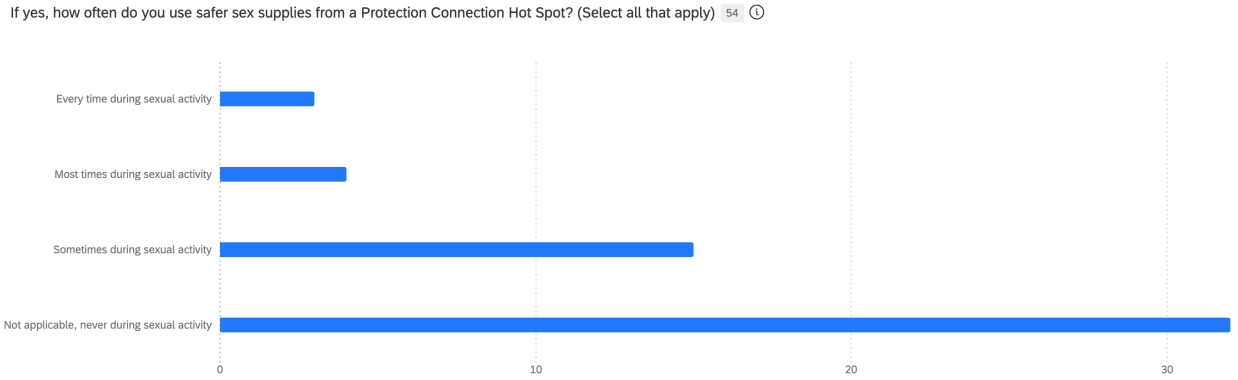

Figure 21: How often respondents use safer sex supplies from a Hot Spot

N=54, every time during sexual activity=3 (5.56%), most times=4 (7.41%), sometimes=15 (27.78%), N/A never=32 (59.26%)

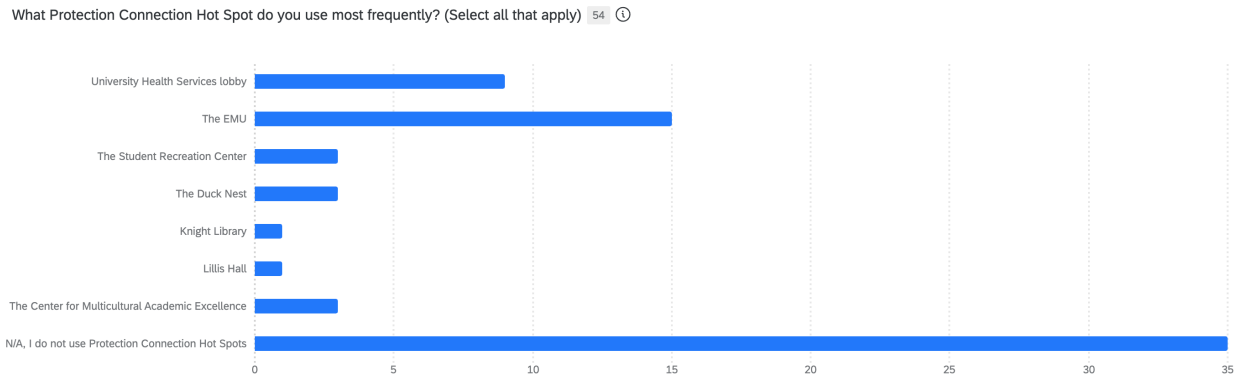

Figure 22: Protection Connection Hot Spots used the most

N=54, UHS lobby=9 (16.67%), EMU=15 (27.78%), Rec Center=3 (5.56%), Duck Nest=3 (5.56%), Knight Library=1 (1.85%), Lillis=1 (1.85%), Center for Multicultural Academic Excellence=3 (5.56%), I do not use Hot Spots=35 (64.81%)

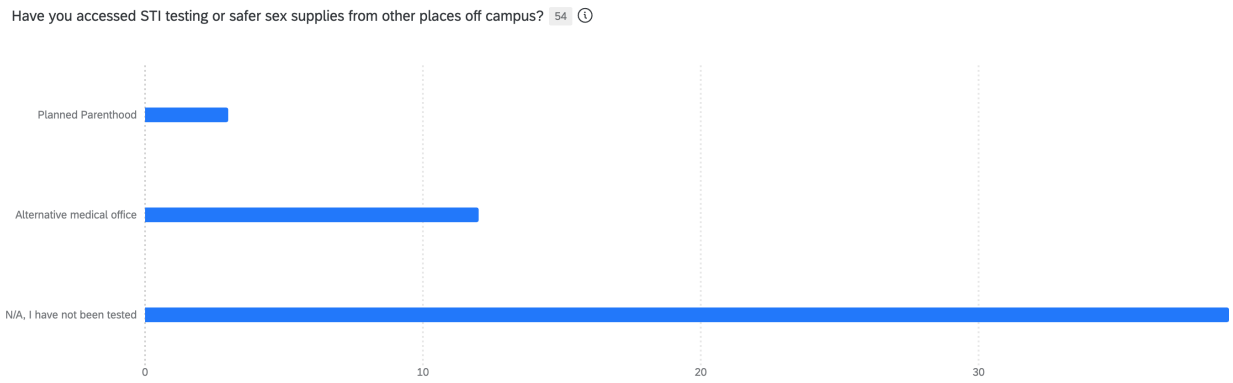

Figure 23: Where respondents access STI testing and barrier methods off campus

N=54, Planned Parenthood=3 (5.56%), alternative medical office=12 (22.22%), N/A I have not been tested=39 (72.22%)

Discussion

This study explored the possible effects the UHS's implementation of sexual wellbeing clinics had on student STI testing numbers and STI positivity rates at the University of Oregon through statistical analyses and an anonymous student survey.

My first hypothesis, that an increase in STI testing would result in a decrease in STI positivity rate among students at UO was not supported by my findings. Significant correlation was not found between an increase in testing and a decrease in positivity rate. Thus, it cannot be assumed that STI testing and STI positivity rates among students at UO have a linear relationship.

My second hypothesis, the implementation of on-campus sexual wellbeing programs would correlate with a decrease in STI positivity rates among students at UO, was not supported by my findings. A significant decrease was not found in the STI data for syphilis, HIV, or CTNG

positivity rates after 2018. So, it cannot be determined that the implementation of the Protection Connection in 2018 led to a decrease in positivity rates of STIs among students at UO.

My third hypothesis, the implementation of on-campus sexual wellbeing programs would correlate with a decrease in STI positivity rates among students at UO, was disproven for CTNG and HIV testing numbers but was supported for syphilis testing numbers. There was no significant decrease found among positivity rates of CNTG, HIV, and syphilis tests with the implementation of the UHS's sexual wellbeing program, the Protection Connection, in 2018. Similarly, there was no significant increase found in the number of CTNG and HIV tests. However, a significant increase in syphilis tests was found (Table 1, b=110.583, CI=95%, p=0.013). The increase in testing is likely due to UHS's policy change in 2023 which made syphilis testing part of a general STI screen. Considering the likely correlation between the UHS policy and testing, the implementation of UHS sexual wellbeing programs likely did not cause an increase in STI testing among students.

I recommend the UHS begin implementing an "opt-out" model for STI testing. An opt-out model would require all medical providers at the UHS to offer their patient the option to either opt-out or opt-into STI at that appointment. According to my survey, roughly 70% of the responding UO students received medical services from UHS while 35% of respondents recorded that they were unaware of the Protection Connection (Fig. 13, Fig. 18). Discussing STI testing and other UHS sexual wellbeing programs ensures more students are learning about these programs. In addition, college students have busy schedules and may be more likely to get STI tested if they are already at the clinic.

While the UHS's sexual wellbeing programs are used by many students, there is still a large portion of students that do not interact with these programs. The survey found that only

13% of responding students used barrier methods from the Protection Connection and only 3.7% of responding students used sexual barrier methods from C-Care (Fig. 15). In the same survey, 44% of students said they do not use sexual barrier methods during sex. By increasing awareness of the Protection Connection, students may be more likely to use sexual barrier methods during sex.

University of Oregon had significantly lower STI rates than the ACHA rates for chlamydia, gonorrhea, syphilis, and HIV. As of 2020, only 33 US states required public schools teach students about HIV, 42 states required and three states recommended public schools teach students abstinence education, and contraception education was only required in 27 states and recommended in 3 states (Garg, 2021). The state of Oregon required all public schools teach students abstinence education, contraception education, and HIV education (Garg, 2021). According to the CDC, abstaining from vaginal, oral, or anal sex, using contraception during sex, and understanding how STIs are spread are critical steps to preventing STIs (CDC, 2024). Considering that University of Oregon has a high population of Oregonian students, it is likely that many students at UO were well educated regarding sexual health in school which may attribute to UO's low STI rates.

Specifically, the ACHA data had a spike in chlamydia, gonorrhea, and HIV during CY 2021. However, UO had a decrease in chlamydia, gonorrhea, and HIV during AY 2020-2021. This is likely because the COVID pandemic was raging during CY 2021 and AY 2020-2021. Since there was no federal COVID restrictions in the US, state governments were able to implement their own COVID restrictions with varying strictness. During the pandemic, Oregon persisted as one of the states with the strictest COVID restrictions. While by early 2021 most states began easing restrictions such as limiting gatherings, Oregon remained one of the only

eight jurisdictions to limit gatherings to fewer than 10 people (BSG, 2021). The University of Oregon had to enforce strict COVID protocol that reflected the state's policy. As a result, during 2020 and 2021, UO students had very limited opportunity to meet other students in the dorms and class likely leading to a decrease in sexual activity among UO students. In addition, students' health priorities shifted towards COVID instead of sexual health. So, according to UHS Medical Director, Dr. Anna Hejinian, UHS saw far fewer students for sexual health concerns during the COVID pandemic likely contributing to lower STI rates and testing (Hejinian personal communication, 2025).

In contrast, by 2021, most universities began lifting strict COVID protocols leading to an increase in in-person communication and gatherings among students at those universities. As a result, it can be assumed that students began using their university's health center more regularly for non-COVID related health concerns, like STI testing, which likely led to the spike in ACHA STI positivity rates.

Limitations

There are several important limitations of this study. First, I do not have data available from before 2018, when the Protection Connection started. So, I cannot compare the STI rates and testing numbers from before the implementation of the Protection Connection to after the implementation of the program in 2018. In addition, the growing study body at UO may have contributed to the increase in syphilis tests considering the study body was only 22,980 students in AY 2017-2018 and grew to 23,834 students by AY 2023-2024 (University of Oregon, Office of Institutional Research). Another limitation is that due to the nature of HIV testing, it is likely that HIV data set may have multiple tests results from the same person. In addition, it is important to note that one of the tests recorded, oral HIV, result in many false positives and may

have skewed the data. Finally, the survey only had 54 respondents and is by no means a full representation of the University of Oregon student population.

Conclusion

This study investigated the relationship between sexual wellbeing programs, testing numbers, and positivity rates of chlamydia, gonorrhea, HIV, and syphilis at the University of Oregon. These results suggest that more in-clinic sexual wellbeing initiatives, such as opt-out STI testing, may increase STI testing among students. Initiatives should prioritize HIV testing since the AY 2022-2023 HIV positivity rates were above the national college average. In general, students frequently interact with UHS's sexual wellbeing program however, changes must be made to these initiatives to attract a larger portion of the study body.

Citations

"About Congenital Syphilis." *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention (CDCb), 31 Jan. 2025, www.cdc.gov/syphilis/about/about-congenital-syphilis.html.

"About HIV." *Centers for Disease Control and Prevention (CDCc)*, Centers for Disease Control and Prevention, 14 Jan. 2025, www.cdc.gov/hiv/about/index.html.

"About Syphilis." *Centers for Disease Control and Prevention (CDC)*, Centers for Disease Control and Prevention, 30 Jan. 2025, www.cdc.gov/syphilis/about/index.html.

American College Health Association. (Revised 2025, March 13). *ACHA 2023 Sexual Health Services Survey Report*. https://www.acha.org/wpcontent/uploads/CY2023_SHSS_FINAL_REPORT.pdf

Angela Long, Director of Public Health Practices and Health Outcomes Improvement, 17 Oct. 2025

Bull, Brian. "Report: Lane County Has High Rate of Sexually-Transmitted Infections." *KLCC*, 16 Mar. 2018, www.klcc.org/health-medicine/2018-03-16/report-lane-county-has-high-rate-of-sexually-transmitted-infections.

"Chlamydia." *National Health Service in the UK*, NHS, 24 Oct. 2024, www.nhs.uk/conditions/chlamydia/.

"Chlamydial Infections - STI Treatment Guidelines." *Centers for Disease Control and Prevention (CDC)*, Centers for Disease Control and Prevention, 22 July 2021, www.cdc.gov/std/treatment-guidelines/chlamydia.htm.

Garg, N., & Volerman, A. (2021). A national analysis of state policies on lesbian, gay, bisexual, transgender, and questioning/queer inclusive sex education. *Journal of School Health*, *91*(2), 164-175.

"Gonorrhea." *Iowa Health & Human Services*, 24 May 2024, hhs.iowa.gov/health-prevention/providers-professionals/center-acute-disease-epidemiology/epi-manual/reportable-diseases/gonorrhea.

Hallas, L., Hatibie, A., Koch, R., Majumdar, S., Pyarali, M., Wood, A., & Hale, T. (2021, May 7). *Variation in US states' COVID-19 policy responses* (BSG-WP-2020/034, Version 3.0). Blavatnik School of Government, University of Oxford. https://www.bsg.ox.ac.uk/sites/default/files/2021-05/BSG-WP-2020-034-v3.pdf

"Historical Enrollment." *Office of Institutional Research-University of Oregon*, 2025, ir.uoregon.edu/enrollment-degrees/historical-enrollment.

"How to Prevent STIs." *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention (CDC), 9 Apr. 2024, www.cdc.gov/sti/prevention/index.html.

Oregon Health Authority. (2022). *Oregon Family Planning Medicaid Waiver Section 1115 quarterly report: 3rd quarter report, July 1, 2022 – September 30, 2022 (Demonstration Year 24)*

"Sexually Transmitted Diseases (Stds)." *Mayo Clinic*, Mayo Foundation for Medical Education and Research, 8 Sept. 2023, www.mayoclinic.org/diseases-conditions/sexually-transmitted-diseases-stds/symptoms-causes/syc-20351240.

"Sexually Transmitted Infections Surveillance, 2024 (Provisional)." *Centers for Disease Control and Prevention (CDCa)*, Centers for Disease Control and Prevention, 24 Sept. 2025, www.cdc.gov/sti-statistics/annual/index.html.

Shannon, Chelsea L, and Jeffrey D Klausner. "The growing epidemic of sexually transmitted infections in adolescents: a neglected population." *Current opinion in pediatrics* vol. 30,1 (2018): 137-143. doi:10.1097/MOP.0000000000000578

Steiner, M., Piedrahita, C., Glover, L., & Joanis, C. (1993). Can Condom Users Likely to Experience Condom Failure Be Identified? *Family Planning Perspectives*, *25*(5), 220–226. https://doi.org/10.2307/2136075

Tudor ME, Al Aboud AM, Leslie SW, et al. Syphilis. [Updated 2024 Aug 17]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-.