

# **Sexually Transmitted Infections and Risk Behaviors in Young Adolescents at Mary's Center**

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# Background

Adolescents in US disproportionately burdened by STIs

- Nearly half ever sexually active<sup>1</sup>
- 6.2% had first intercourse before 13 years old<sup>1</sup>
- 60% condom use at last intercourse<sup>1</sup>
- Highest prevalence chlamydia and gonorrhea in adolescent females<sup>2</sup>
  - Chlamydia: 1852.1 per 100,000 in 15-19yo males & females<sup>2</sup>
- Adolescents fastest growing group of new HIV diagnoses<sup>3</sup>
  - DC: Diagnosis rate 177.9 per 100,000 (highest in country)<sup>4</sup>
  - Maryland: Third highest diagnosis rate<sup>4</sup>

# Background

Numerous **risk factors** associated with STIs

- **Substance use** and certain **sexual behaviors** (age at first intercourse, # lifetime partners, use of barrier protection, etc.) often cited<sup>2,6</sup>
- **Blacks** disproportionately affected followed by other racial/ethnic **minorities**<sup>2,4,5</sup>
- Common risk behaviors more prevalent in **sexual minorities**, particularly MSM<sup>6</sup>

# Scope of Study

## Purpose:

To collect retrospective data on sexually transmitted infection (STI) **risk factors** in the 13-16 year old Well Child Check (WCC) patient population at Mary's Center and compare to actual **prevalence** of STI diagnoses in this population.

Mary's Center currently practices universal screening for certain STIs (including chlamydia, gonorrhea, and HIV) in adolescents. Is this **best practice**?

# Specific Aims

**Specific Aim #1:** To assess the prevalence of STI risk factors identified from literature review among the 13-16 year old Mary's Center WCC population and compare this to the actual prevalence of STI diagnoses at well visits to determine if a significant association exists.

**Specific Aim #2:** To characterize the relative burden of STI risk factors as well as STI diagnosis on the 13-16 year old Mary's Center WCC population.

# Study Design

## Inclusion Criteria

1. Routine well exam occurred in 2013
2. Age of patient was 13-16 years old at time of WCC

### Retrospective Chart Abstraction

Demographics	Risk Factors	STIs
Age	Sexual activity	Chlamydia
Sex	Substance use	Gonorrhea
Race	Sexual identity	HIV
Ethnicity		Syphilis
Language		

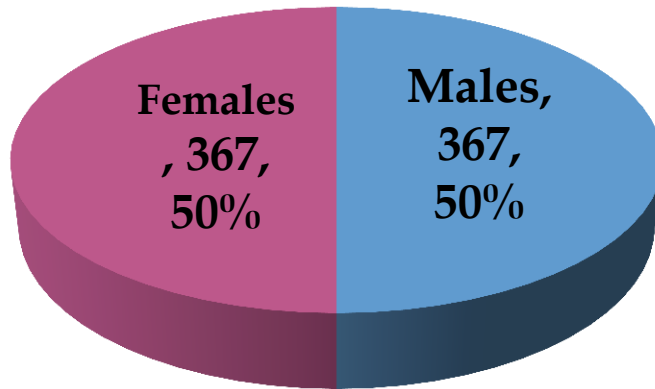
# Analysis



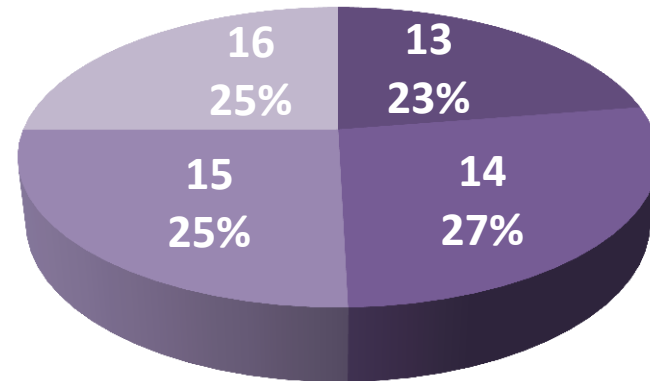
- Data collected with Microsoft Excel
- SAS analyses
- Primarily descriptive statistics
- Chi Square and Fisher's Exact tests

# Study Population

## Sex Distribution

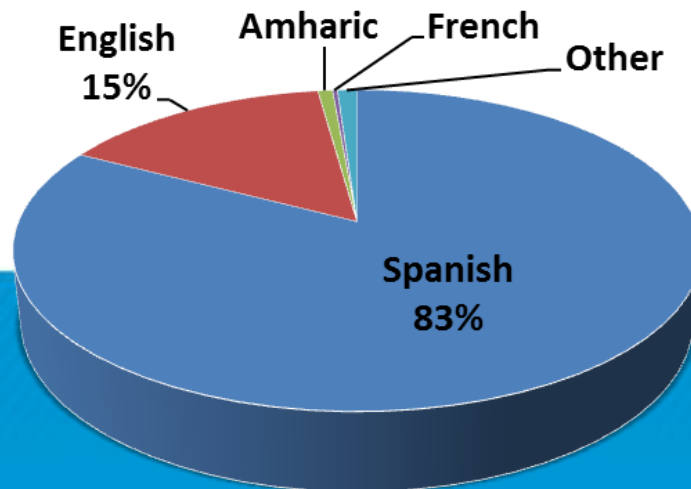


## Age Distribution



n = 734

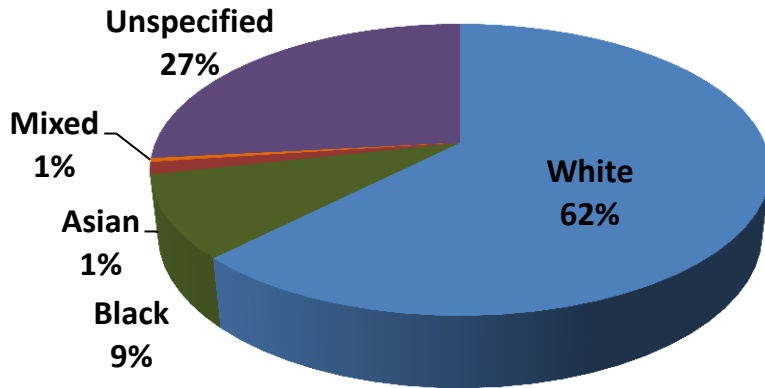
## Primary Language Spoken



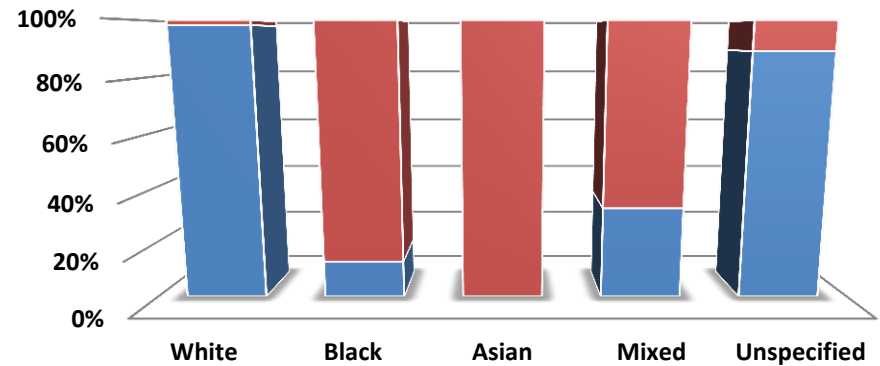


# Study Population

## Race Distribution



## Ethnicity Distribution by Race

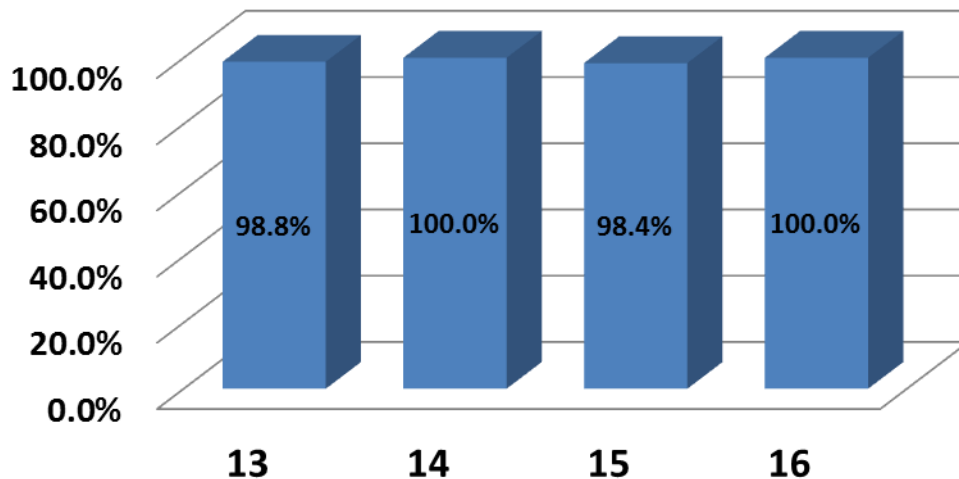


■ Hispanic ■ Nonhispanic

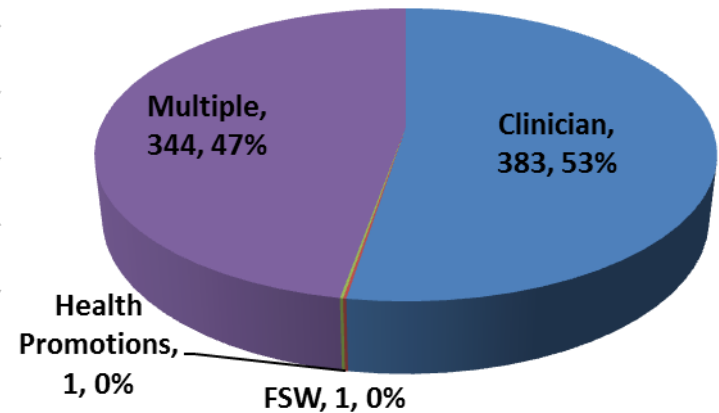
Total Hispanic = 87%

# Well Visit Assessments: *Sexual Activity*

Patient Sexual Activity Evaluated (by Age)

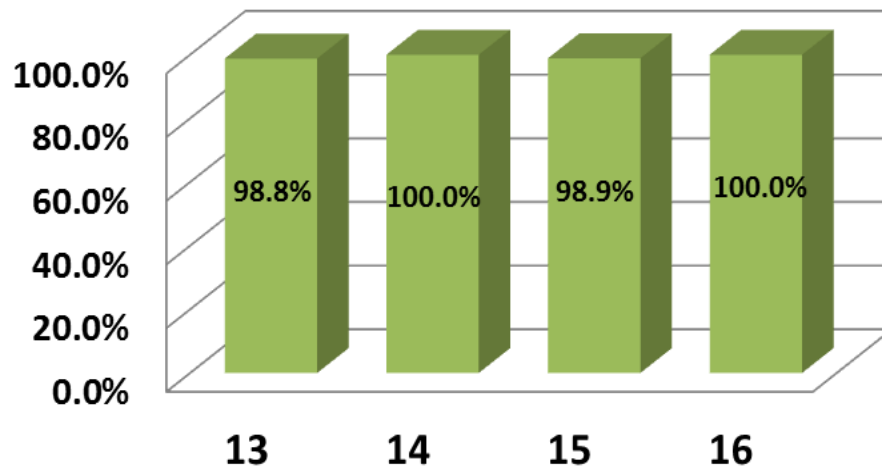


Who was sexual activity evaluated by?

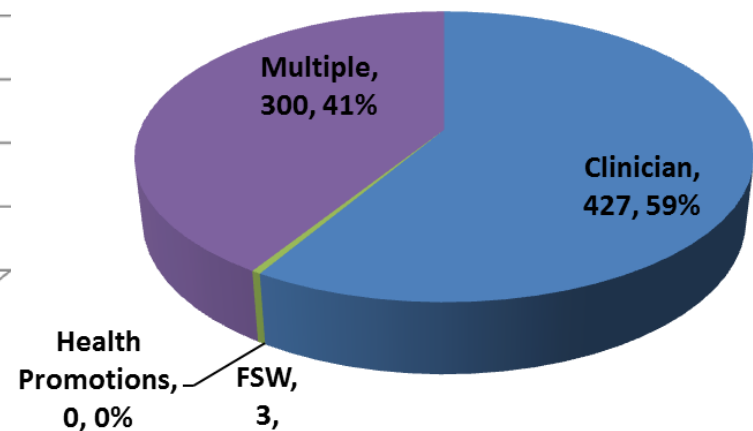


# Well Visit Assessments: *Substance Use*

## Substance Use Evaluated (by Age)

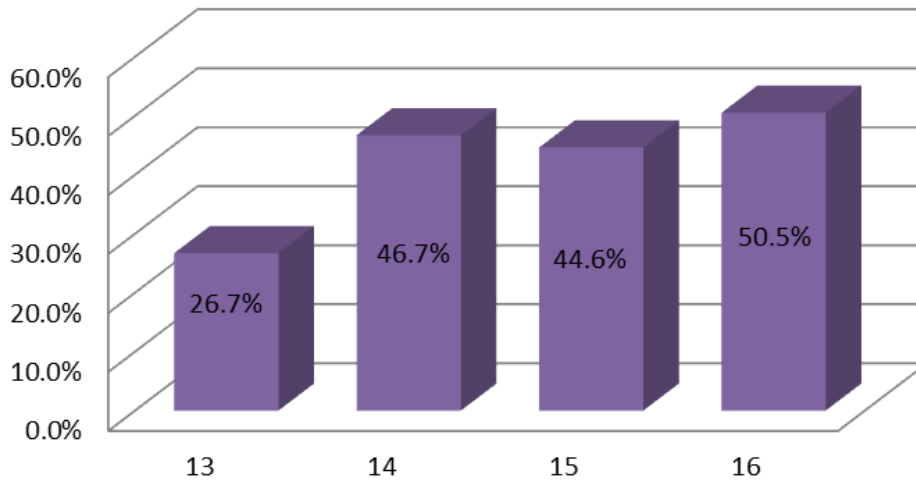


## Who was substance use evaluated by?

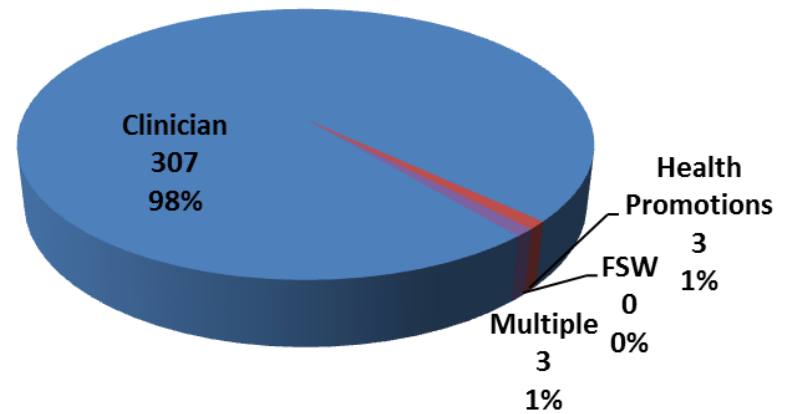


# Well Visit Assessments: *Sexual Identity*

## Sexual Identity Evaluated (by Age)



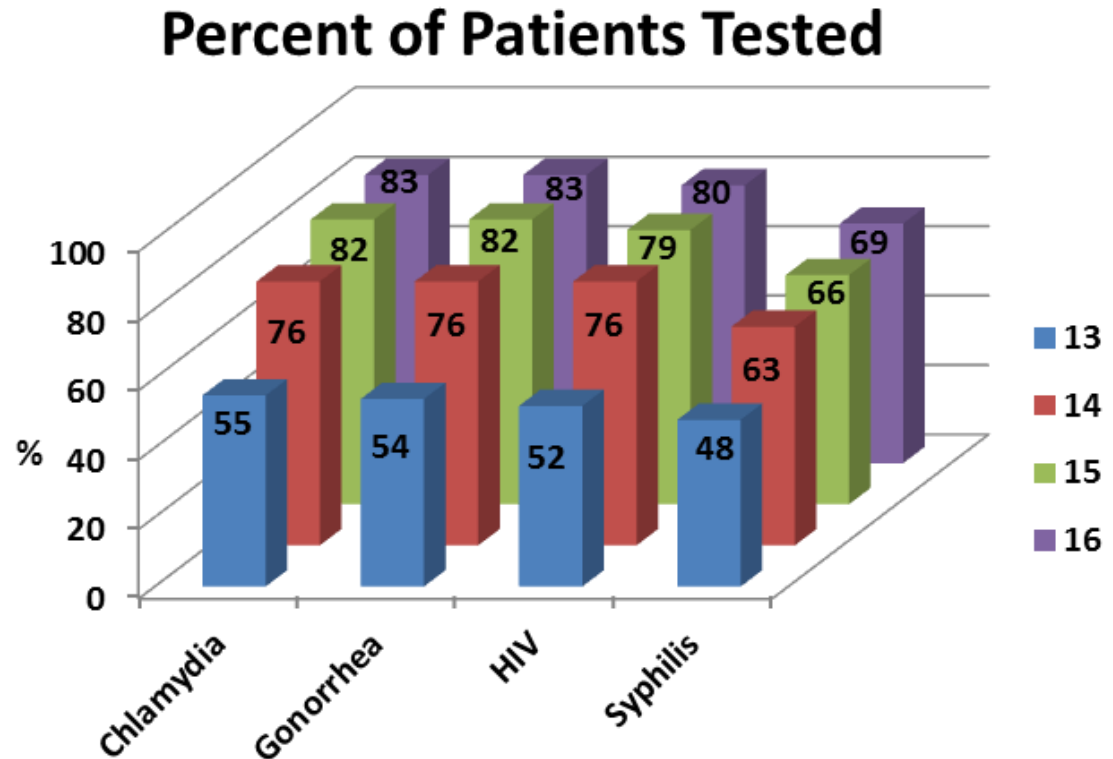
## Who was sexual identity evaluated by?



\*Significant increase in likelihood over age 13

# Well Visit Assessments: *STIs*

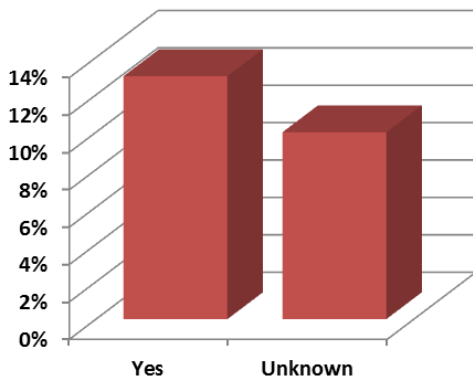
\*Significant increase in testing rates from 13 to 14 years old for all STIs



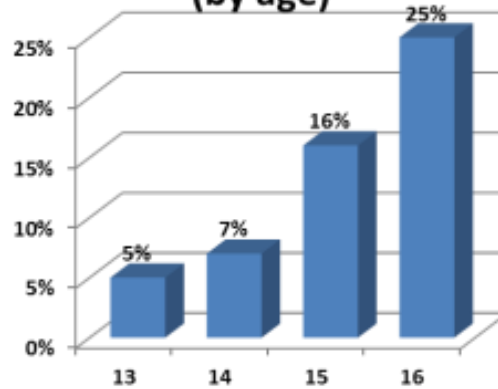
# Risk Behaviors

## *Sexual Activity*

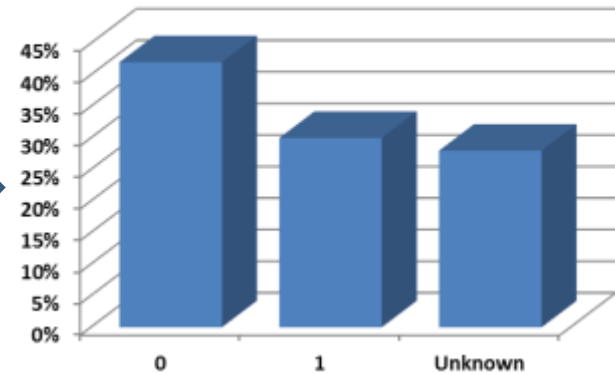
Ever Sexually Active



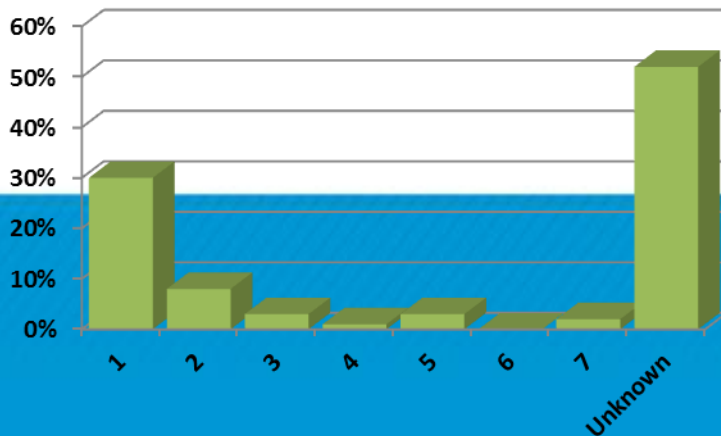
Ever Sexually Active (by age)



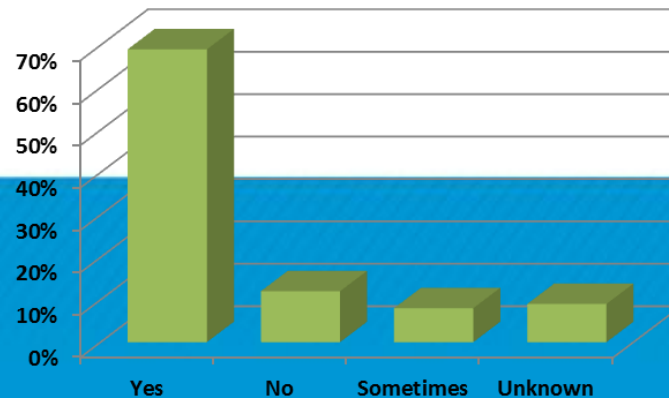
# Current Partners



# Lifetime Partners



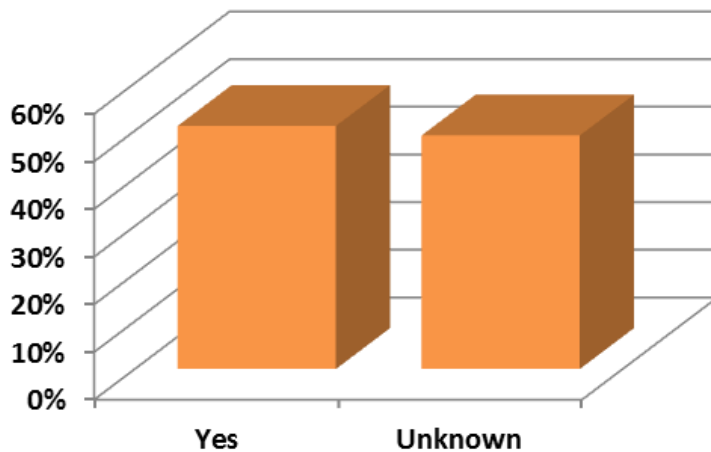
Uses Barrier Protection



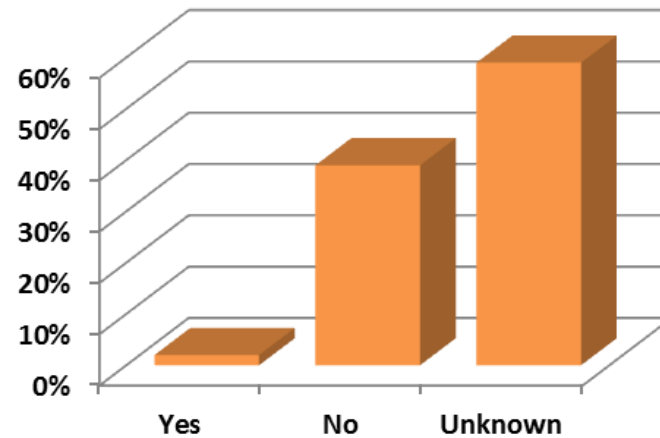
# Risk Behaviors

## *Sexual Activity*

**Ever Had Pregnancy Test  
(females)**

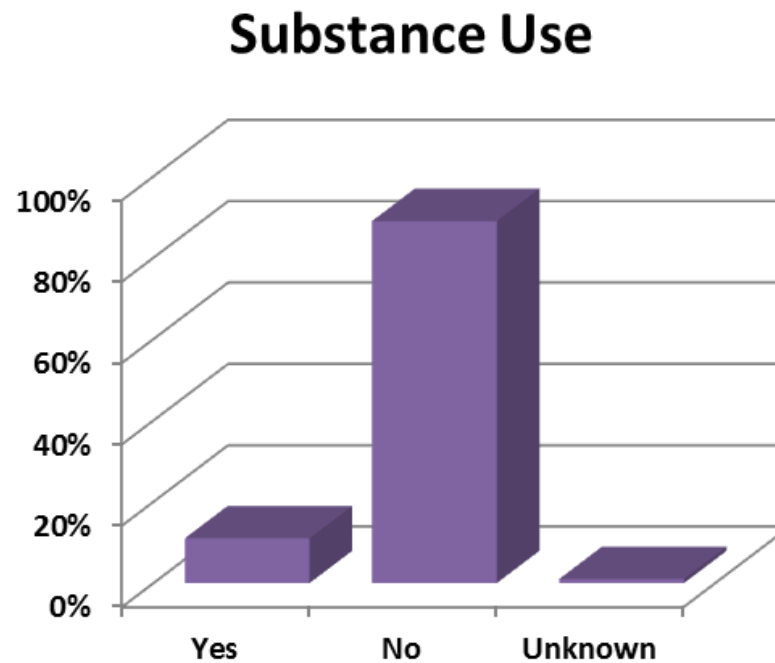


**Ever Pregnant in the Last  
Year (females)**



# Risk Behaviors

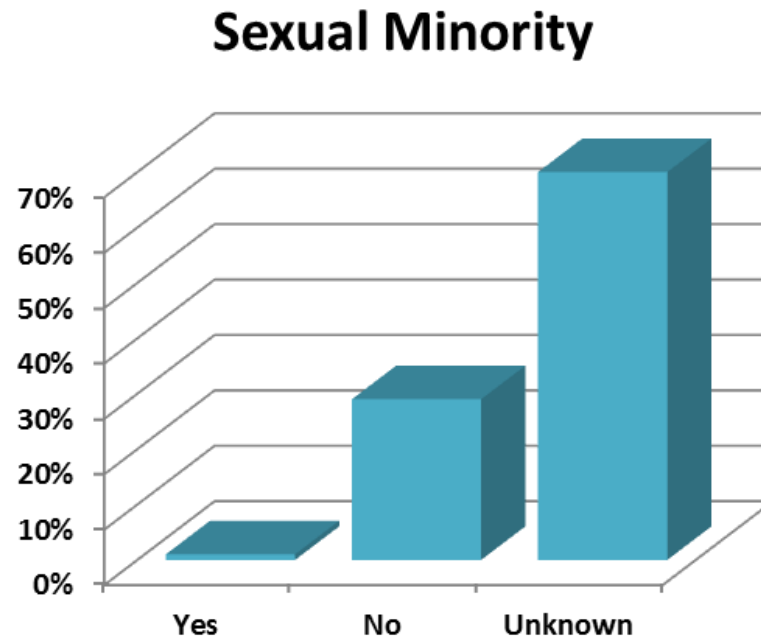
## *Substance Use*





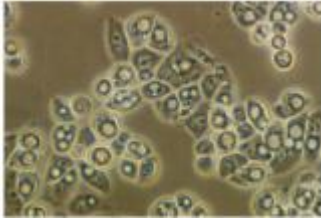
# Risk Behaviors

## *Sexual Identity*



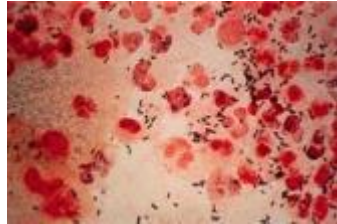
# STIs

Chlamydia



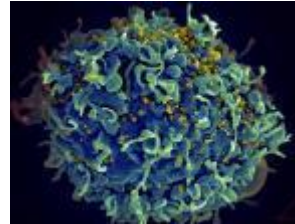
<http://medicalpicturesinfo.com/chlamydia-trachomatis/>

Gonorrhea



<http://home.lcusd.net/lchs/mewoldsen/zlord.html>

HIV



<http://www.forbes.com/sites/paulrogers/2014/12/03/hiv-is-evolving-to-be-less-deadly/>

Syphilis



<https://en.wikipedia.org/wiki/Treponema>

## 7 total positive STI Tests

- 6 Chlamydia
- 1 Syphilis

1.23% Prevalence

# Findings

## Risk Behaviors and Demographics

- No significant associations

## STIs and Demographics

- All positive STI diagnoses were in females

# Findings

## Risk Behaviors and STI Diagnosis

- Adolescents with  $\geq 3$  lifetime partners or history of substance use more likely to be diagnosed

# Limitations

- Chart data based on patient report
  - Not always reliable or accurate in adolescents
- Charts/clinician notes often lack specificity
  - Ex) “sexual identity/behavior/activity” discussed
- Parental presence during WCC not accounted for
- Method of data collection did not account for discrepancies in patient reports
- Few positive STI results

# Conclusions & Recommendations

- Of the 13-16 yo WCC population, a significant association between the risk factors of female sex and substance use and the outcome variable of STI diagnosis
- Low rates of STI screening and discussion of sexual identity in younger teens
- Lack of correlation between STI diagnosis and most identified risk factors

Universal screening may be best practice

# Future Research

- Compare data from well visits to general 13-16 year old patient population
- Look at all positive diagnoses over one calendar year and compare demographics & risk factors
- Explore discrepancies in patient reports about sexual behavior & risk factors
- Differences between males and females in STI testing and symptom reporting

# Acknowledgements

- Alis Marachelian, Bethlehem Muleta, and the Mary's Center Health Promotions Team
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- Dr. Manya Magnus, Dr. Daniel Hoffman, Matt Levy, Department of Epidemiology & Biostatistics, Milken Institute School of Public Health, GWU



# References

1. Eaton DK, Kann L, Kinchen S, Shanklin S, Ross J, Hawkins J, et al. (2008). Youth risk behavior surveillance-United States, 2007. *Morbidity and Mortality Weekly Report. Surveillance Summaries*. 2008;57(4):1-131.
2. Centers for Disease Control and Prevention. (2014). *Sexually transmitted disease surveillance 2013*. Atlanta: U.S.: Department of Health and Human Services.
3. Morrison-Beedy D, Nelson LE, Volpe E. HIV risk behaviors and testing rates in adolescent girls: Evidence to guide clinical practice. *Pediatric Nursing*. 2005;31(6):508-512.
4. Centers for Disease Control and Prevention. *HIV surveillance report*. 2011;23.
5. Halpern CT, Hallfors D, Bauer DJ, Iritani B, Waller MW, Cho H. Implications of racial and gender differences in patterns of adolescent risk behavior for HIV and other sexually transmitted diseases. *Perspectives on Sexual and Reproductive Health*. 2004;36(6):239-247.
6. Kann L, Olsen EO, McManus T, Kinchen S, Chyen D, Harris WA, Wechsler H. Sexual identity, sex of sexual contacts, and health-risk behaviors among students in grades 9-12 - Youth risk behavior surveillance, selected sites, United States, 2001-2009. *Morbidity and Mortality Weekly Report*. 2011;60(SS-7):1-134.