



It's not **what** you know,
but **who** you know:

Risk factors for re-infection in the Philadelphia High School STD Screening Program

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Outline

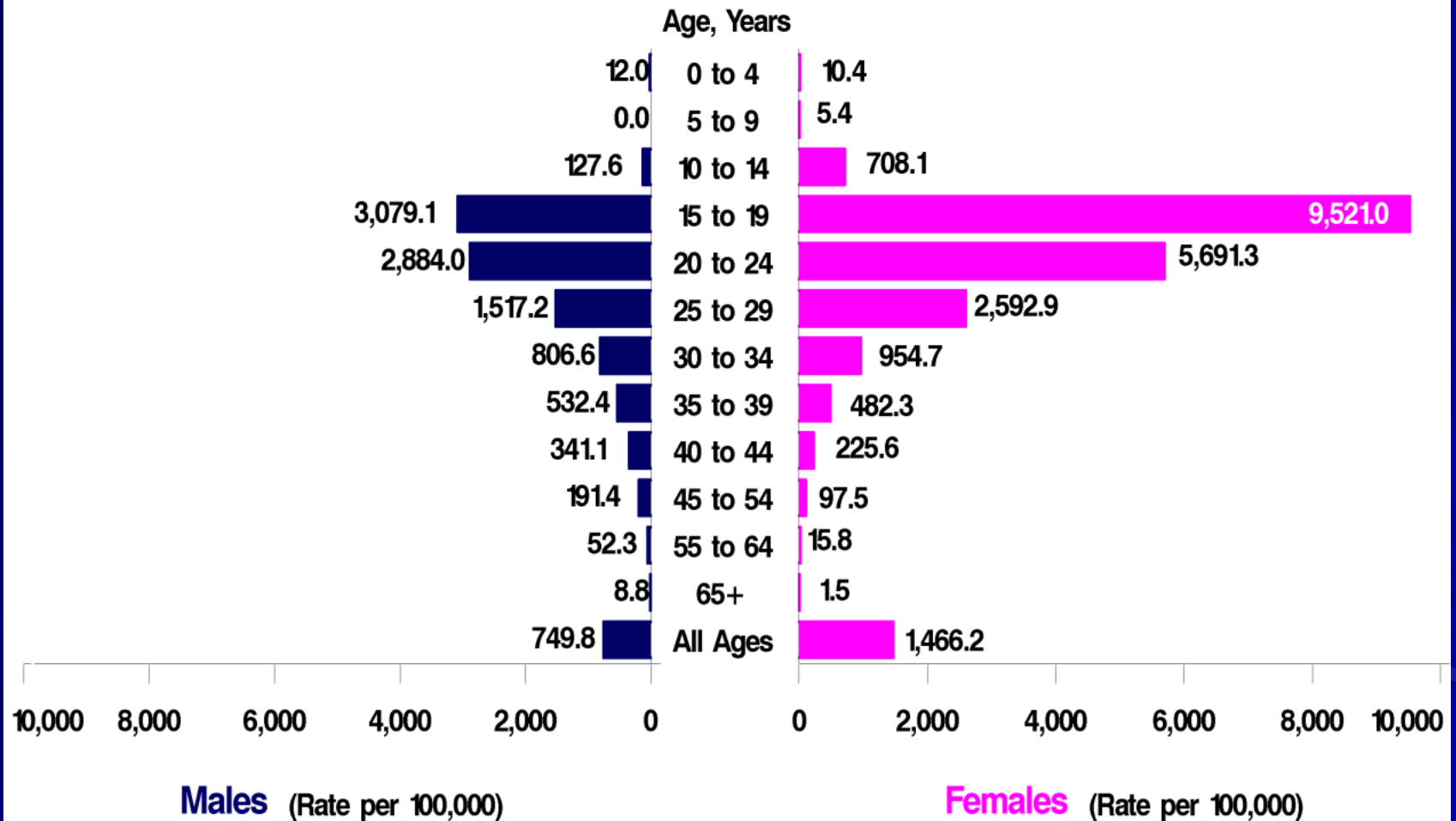
- Scope of the Problem: (Chlamydia) CT and (Gonorrhea) GC
- Philadelphia High School STD Screening Program (PHSSSP) Introduction
- Research Design and Methods
- Results and Discussion
- Conclusions and Recommendations

Study Objective

- Identify and analyze risk factors associated with CT or GC re-infection within the same school year among high school students screened by the Philadelphia Department of Public Health (PDPH) STD Control Program

Scope of the Problem

Figure 1: Chlamydia Rates per 100,000 Population by Age and Gender
Philadelphia, 2006



Source: PDPH 2007

Adolescent Re-infection Risk

- 35%-60% of re-infection occurs within the first four months
- Re-infection rates are highest in adolescent females and CT rates can range between 20% - 58%
- Researchers speculate why these rates are so high in this population
 - Anatomy
 - Immaturity (behavioral)
 - Risky behavior

(Schillinger et al, 2003; Niccolai et al, 2007)

Introduction to PHSSSP

- Philadelphia High School STD Screening Program (PHSSSP)
 - Began in 2002-2003 school year to address high rates of GC and CT among adolescents.
 - Educational session followed by voluntary screening

Introduction to PHSSSP, Con.

- In the second year of PHSSSP:
 - **Re-screening program initiated:** Active follow-up for students with an initial positive test 3-6 months after treatment to detect re-infections in the same school year
 - **Disease Intervention Specialist (DIS) partner follow-up initiated:** DIS interview those who are treated in the school or in the STD clinic to elicit the names and locating information of sex partners for follow-up

PHSSSP – The First 4 Years

Table 1. Summary of the first 4 years

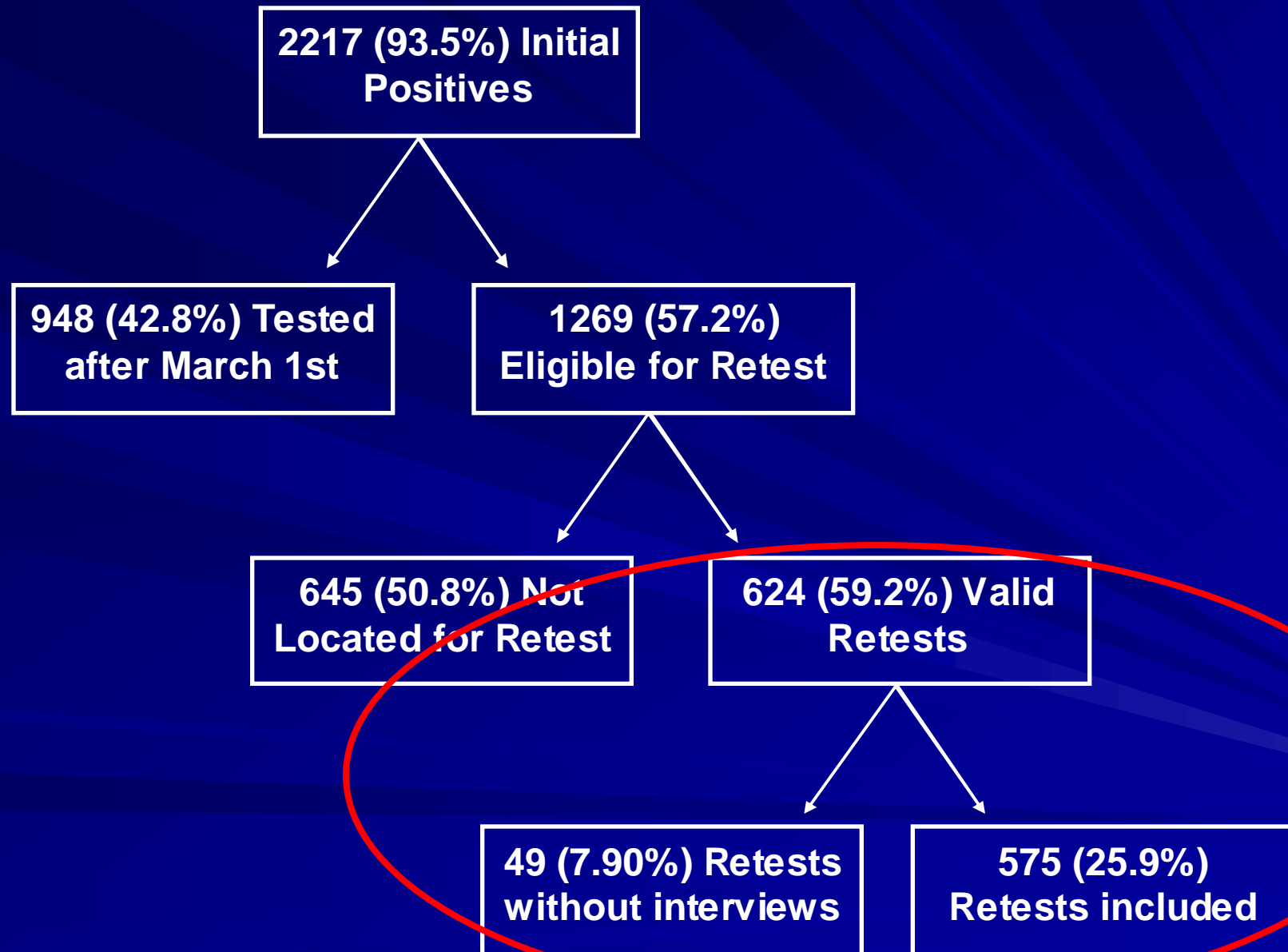
No. of Students	School Year 2002-2006
Screened	69,035
Positive	3308 (4.80%)
Treated	3289 (99.4%)

- For the following analyses, year 1 data was excluded because no partner treatment, no retesting, no interviews

Research Methods and Design

- All secondary data from PHSSSP
- Microsoft Access 2003 and SAS version 9.1 were used
- Univariate analyses and multi-variable analyses
- P-value of ≤ 0.05 as a significant value
- 95% Confidence Limits

Total included with a retest by eligibility



Candidate Risk Factors

- Gender
- Self-reported race/ethnicity
- Dual infection at first test
- Partner(s) treatment status
- School year
- School type
- Grade
- Age at initial test (continuous)
- Age group (categorical)
- Time to retest
- Residential ZIP code reported incidence

Main Study Variable: Partners' Treatment Status

Table 2. Variable Categories

Did students with an initial positive screen name partners?	Were these partners treated by PDPH?	Group #
No	N/A	1
Yes	Yes, all were treated	1
Yes	Yes, but only some were treated	1
Yes	No, none were treated	2

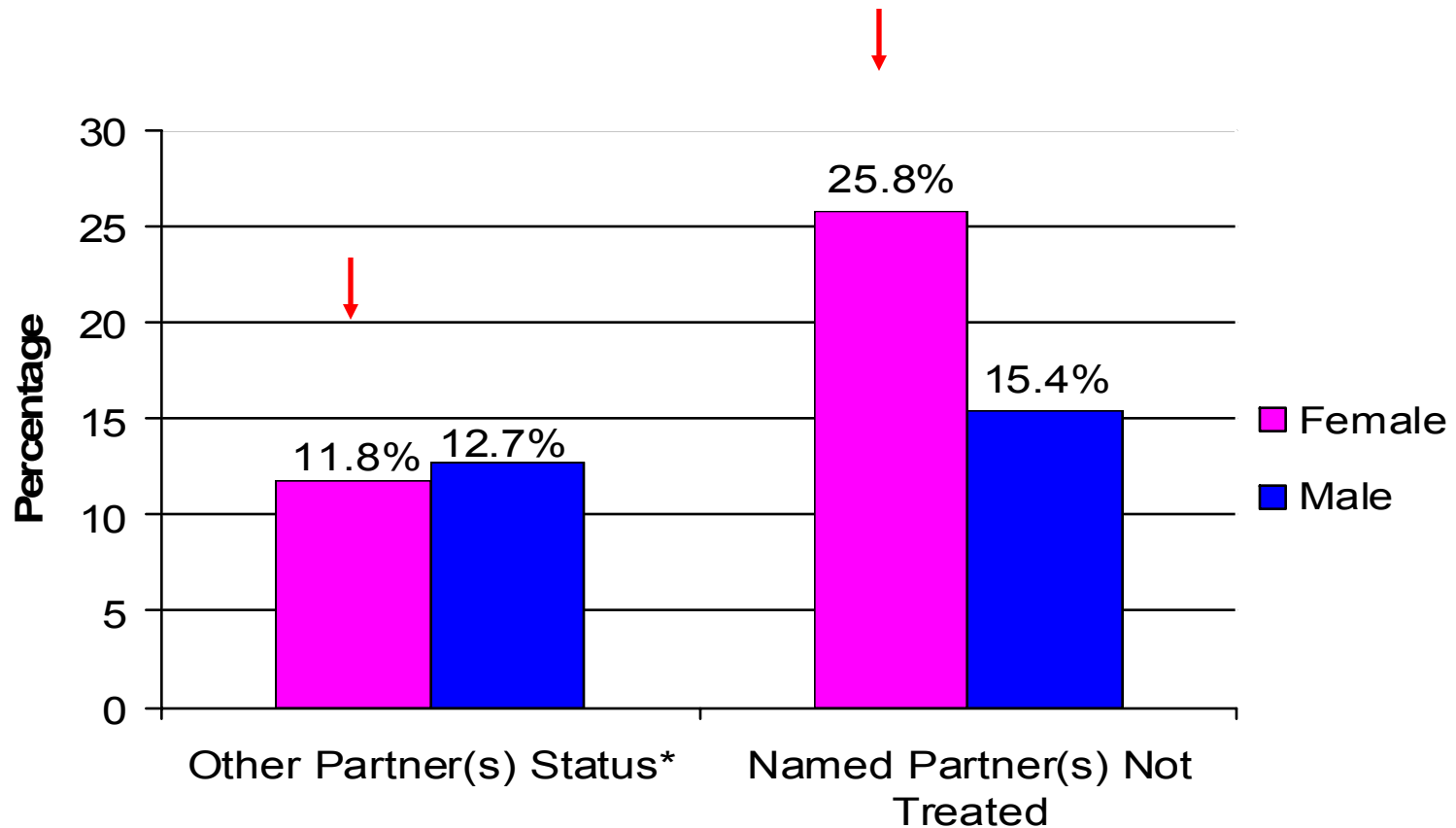
Results

- ~ 49,322 students were screened in years 2,3, and 4
- 2269 (4.6%) students with an initial positive test
 - 52 exclusions
- 624 Retests
 - 575 met inclusion criteria (49 missing interview files)
- The re-infection rate within the same school year was 13.6% (78 out of 575)

Results, Con.

Risk of re-infection: Positive retests by gender and partner(s) treatment status

Figure 3.



Results

Table 3. Retest positives by gender and partner(s) treatment status

	Female RR (95% C.L.)	Male RR (95% C.L.)
Other	1.00 (ref)	1.08 (0.638, 1.83)
None treated	2.20 (1.32, 3.65)	1.31 (0.355, 4.83)

*Other includes at least some or all partners treated and no partners named

Conclusions and Recommendations

- Naming sexual partners and having them treated by the PDPH is key to reducing re-infection rates among the students in PHSSSP, especially among females
 - Males are most likely infecting females and should be retested as well.
- Recommendations include adding an educational component on re-infection to the existing educational presentation



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