

# Incidence of Genital Warts in Adolescents and Young Adults



## Prior to Human Papillomavirus Vaccination

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### BACKGROUND

- Few studies have examined the epidemiology of genital warts (GW) in general health care settings in the United States.
- There is no national reporting of GW. Existing surveillance systems use diagnostic codes (ICD-9) which are not specific for warts with a genital location.
- GW may be greatly reduced by widespread utilization of the quadrivalent HPV vaccine. Monitoring the impact of the vaccine requires a firm understanding of the epidemiology of GW prior to HPV vaccine availability.

### OBJECTIVES

**Primary:** To describe the incidence of GW among adolescents and young adults enrolled in an integrated healthcare delivery system prior to availability of HPV vaccine (2000-2005).

**Secondary:** To describe the anatomic location of incident GW.

### METHODS

**Population:** 11 through 29 year old members of Kaiser Permanente Northern California (KPNC) continuously enrolled between 2000 and 2005. (n=181,264)

#### Identification of Genital Warts Cases:

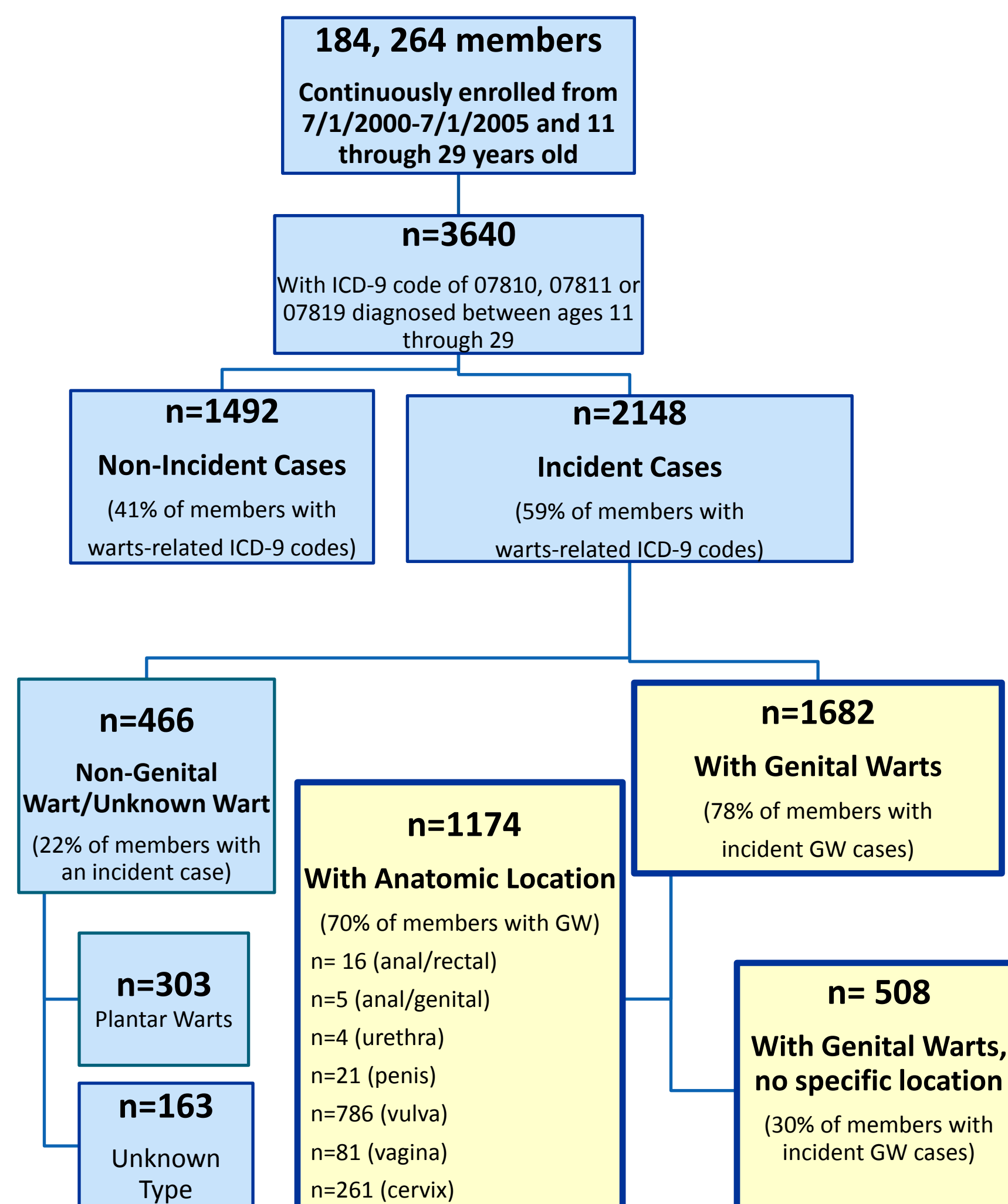
- ICD-9 code 078.19 (condyloma acuminatum) OR
- ICD-9 code 078.10 (viral warts, unspecified) OR 078.11 (other specified wart) AND:
  - A location qualifier OR write-in-text indicating a genital location of the wart.
  - The qualifier and write-in-text was recorded by physician and describes the anatomical location of the wart.
- Incident case was defined as a GW identified as above after 12 month disease-free interval.

### RESULTS

#### Baseline Demographics of KPNC Study Population (n=181,264)

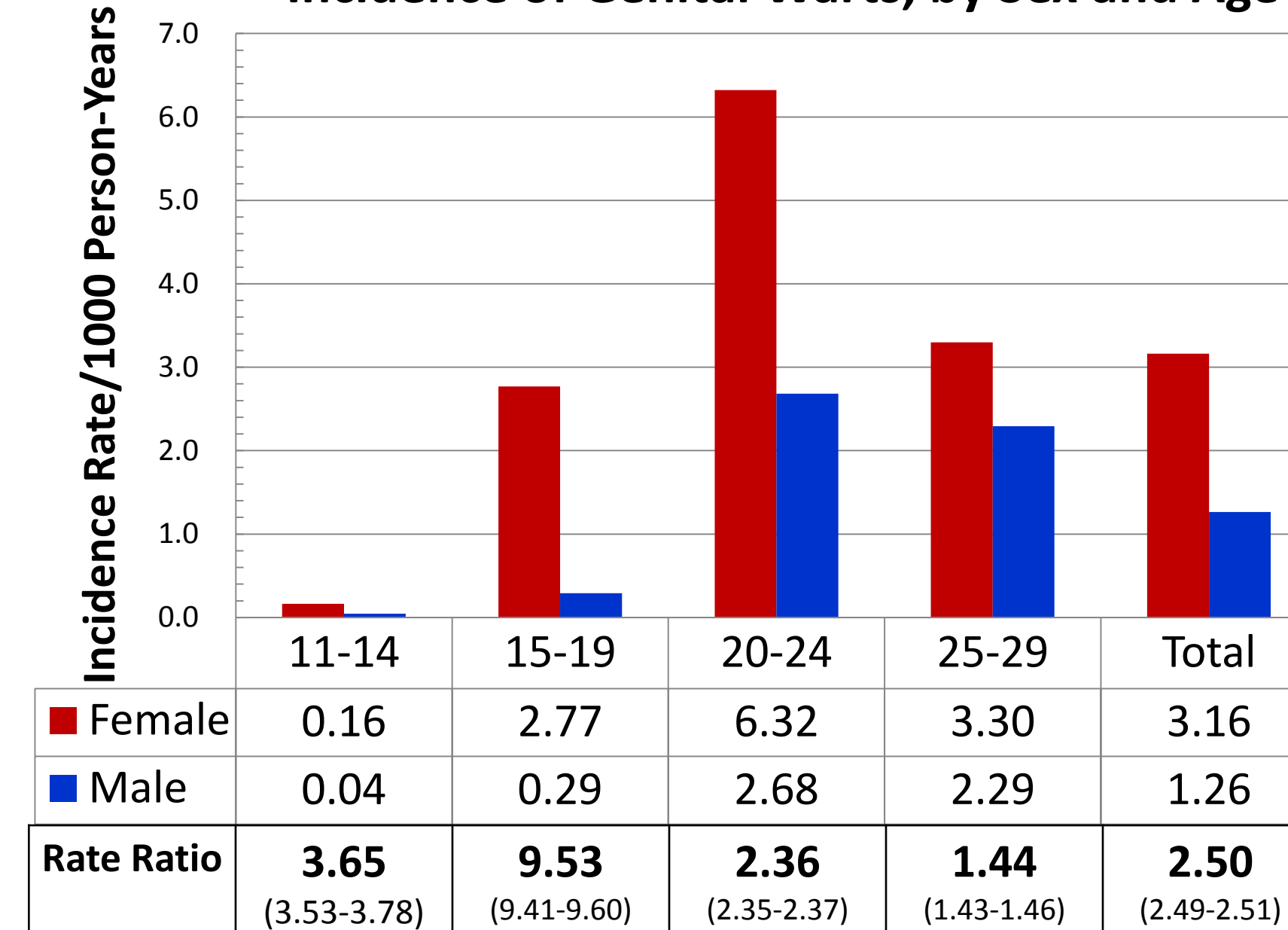
n (%)	Total	Female	Male
Age (Years)			
11-14	67,499 (37.2)	33,021 (34.1)	34,478 (40.8)
15-19	19,043 (10.5)	10,185 (10.5)	8,858 (10.5)
20-24	34,656 (19.1)	19,953 (20.6)	14,703 (17.4)
25-29	60,066 (33.1)	33,633 (34.8)	26,433 (31.3)
Total	181,264	96,792 (53.4)	84,472 (46.6)

#### Identification of Incident Genital Warts Cases



### RESULTS

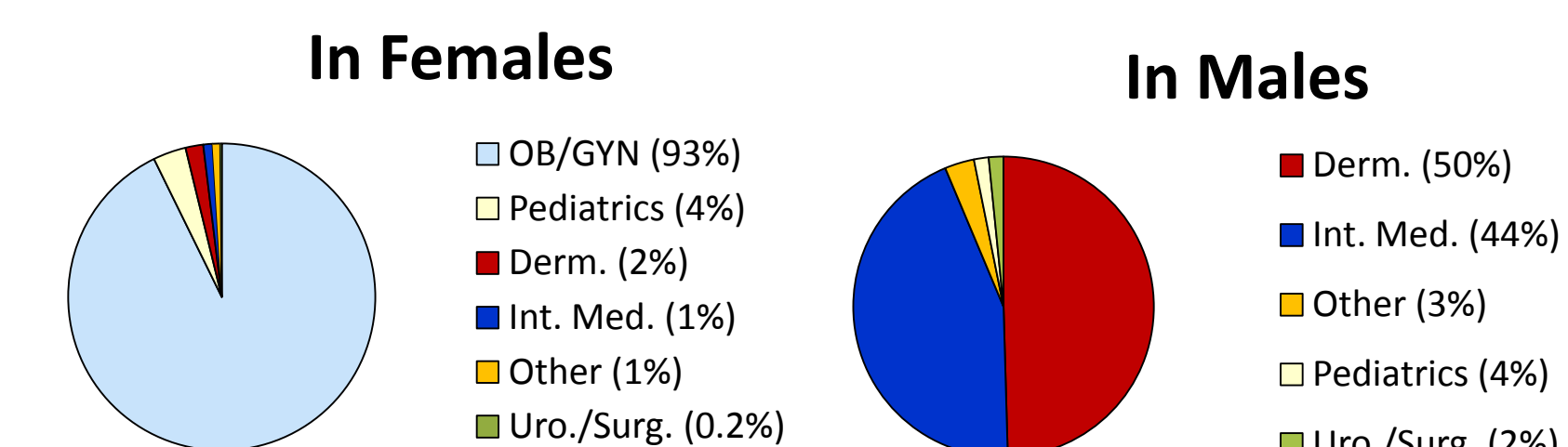
#### Incidence of Genital Warts, by Sex and Age



#### Anatomic Location of Incident Cases (n=1682)

n (%)	Total	Female	Male
Genital warts, Location NOS	508 (30.2)	103 (8.3)	405 (91.6)
Anal/genital	5 (0.3)	1 (0.1)	4 (0.9)
Anal/rectal	16 (1.0)	8 (0.6)	8 (1.8)
Urethra	4 (0.2)	0 (0)	4 (0.9)
Penis	21 (1.2)	0 (0)	21 (4.8)
Vulva	786 (46.7)	786 (63.4)	0 (0)
Vagina	81 (4.8)	81 (6.5)	0 (0)
Cervix	261 (15.5)	261 (21.0)	0 (0)
TOTAL	1,682	1,240	442

#### Specialty Diagnosing Incident Genital Warts



### SUMMARY

- Using a combination of ICD-9 codes, location qualifiers, and write-in-text, we were able to identify the exact anatomic location of 1174/1682 (70%) of GW cases.
- In this population, 20-24 year old women have the highest Incidence of GW (6.32 cases/1000 person-years).
- Almost half (46.7%) of the GW diagnoses in females were classified as being vulvar in location, while 91.6% of the cases in males did not code to a specific anatomic location.

### CONCLUSIONS

- Females consistently have a higher incidence rates of GW across age groups, and 15-19 year olds have the highest difference in sex-stratified rates.
  - May be due to differences in sexual risk behaviors, likelihood of developing warts after infection, or health care utilization.

- Using a combination of ICD-9 codes, qualifiers and write-in-text results in incidence rates similar to previously published estimates.<sup>1,2</sup>

### IMPLICATIONS

- This data can inform future assessments of cost and burden of this preventable disease.
- Clinicians should consider evaluating females age 15-24 for GW.

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*The findings and conclusions in this report represent those of the authors and do not necessarily represent those of the Centers for Disease Control and Prevention.*

1. Insigna RP. Clin Inf Disease. 36 (11): 1397-1403. 2. Koshiol JE. Sex Trans Dis. 31(12): 748-52.