

# Genital Warts

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# Outline

- Background
- Clinical Presentation
- Transmission
- Burden of Disease
- Cost considerations

# Background: Genital warts

- HPV types 6 and 11 are the primary cause of genital warts
  - HPV 6/11 detected in 97% of 65 specimens\*
    - HPV 6 in ~70%, HPV 11 in ~40%
    - Both HPV 6/11 in ~20%

Lacey CJN, Vaccine 2006, Greer, J Clin Micro 1995

\*Brown, J Clin Micro 1999

# Genital warts: Clinical

- Clinical presentation varies: flat, papules, pedunculated, grouped, condylomas
- Various locations:
  - Men - corona, glans, prepuce, meatus,
  - women - vagina, vulva, labia
- Many cases go unreported
- Frequent recurrences, even with treatment
- HIV: larger, more numerous, more difficult to treat  
Pregnancy: more likely to proliferate

# Genital warts

## Psychosocial

- Diagnosis associated with anxiety, discomfort, embarrassment, anger, shame— impact intimate relationships
  - Distress associated with recurrence and treatment
  - Delay in seeking treatment is common

# Genital Warts: Treatment

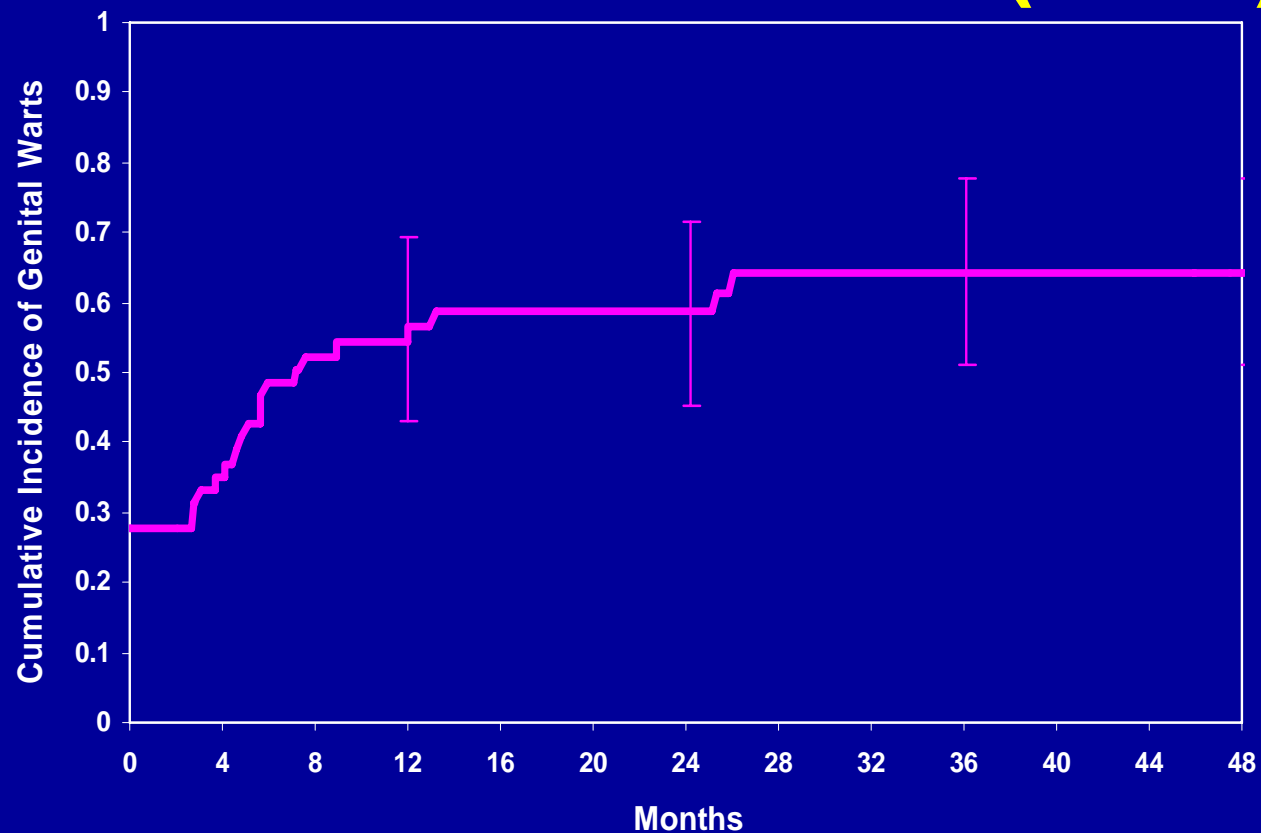
- Treatments:
  - Patient-applied/Provider administered
  - Types: antiproliferative, destructive/excisional, immunomodulating
  - Treatments can result in side effects including burning, itching, pain, and rarely fistulas, ulcers
- Clinic Visits:
  - 3 clinic visits—70% of cases concluded within 10 week period

# Transmission

- Transmission by sexual contact
  - Primarily by sexual intercourse
- 64% of sexual partners of patients with genital warts subsequently acquired genital warts 3 weeks to 8 months after contact (average 2.8 months)

Burchell, A J Epi 2006, Oriel, Br J Vener Dis 1971

# Cumulative incidence of developing genital warts among women with incident HPV 6/11 (n=54)



Winer RL, JID 2005;191:731



# Genital warts after incident HPV 6/11

- Median time between detection of incident HPV-6 or HPV-11 infection and detection of genital warts was 2.9 months (IQR, 0–5.7 months)
- Median time to clearance with treatment was 5.9 months (IQR, 3.9–8.0 months)

Winer RL, et al. JID 2005

# Burden of Disease: Genital warts

- Imprecise estimates
  - No national representative data
  - Not nationally reportable
- Estimates by experts: 1% sexually active adults have genital warts in U.S.

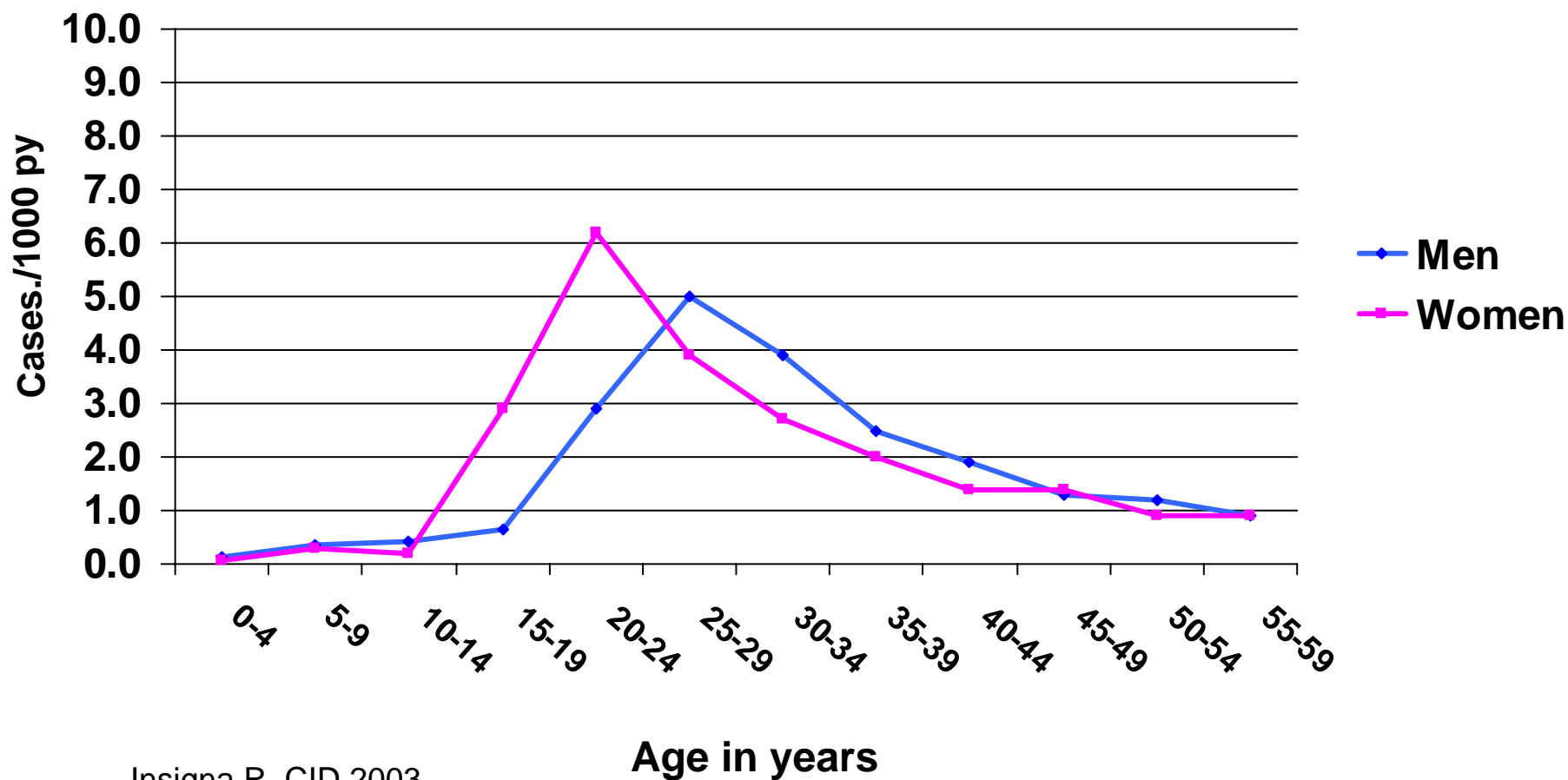
Koutsky L, Am J Med 1997

# Burden of disease genital warts

## U.S. Data available:

- Administrative data-Medstat, IHCIS
- Nationally representative sample-National Health and Nutrition Examination Survey (NHANES)
- STD clinic population-STD Surveillance Network (SSuN)
  
- Physician Reporting-NDTI

# Rate of genital wart diagnoses by age group, Medstat, 2000



Insigna R, CID 2003

# Incidence of Genital Warts

- Integrated Health Care Information Services (IHCIS)
  - health claims database
- 17 million members from 30 health plans
- Rate of new genital warts claims as proxy for incidence of genital warts
  - 157 genital warts/100,000 py
  - Age specific differences

# Limitations of Administrative Data

- Reported prevalence in insured population, based on claims
- ICD-9 codes—non-specific

# Genital warts

## NHANES

- Nationally representative sample of 18-59 year olds, 1999-2004
- Sexually active men and women asked, “Has a doctor or health care provider ever told you that you had genital warts?”
- Prevalence
  - Women -7.2%
  - Men - 4%
  - Highest in 25-34 yr old women and 35-44 yr old men

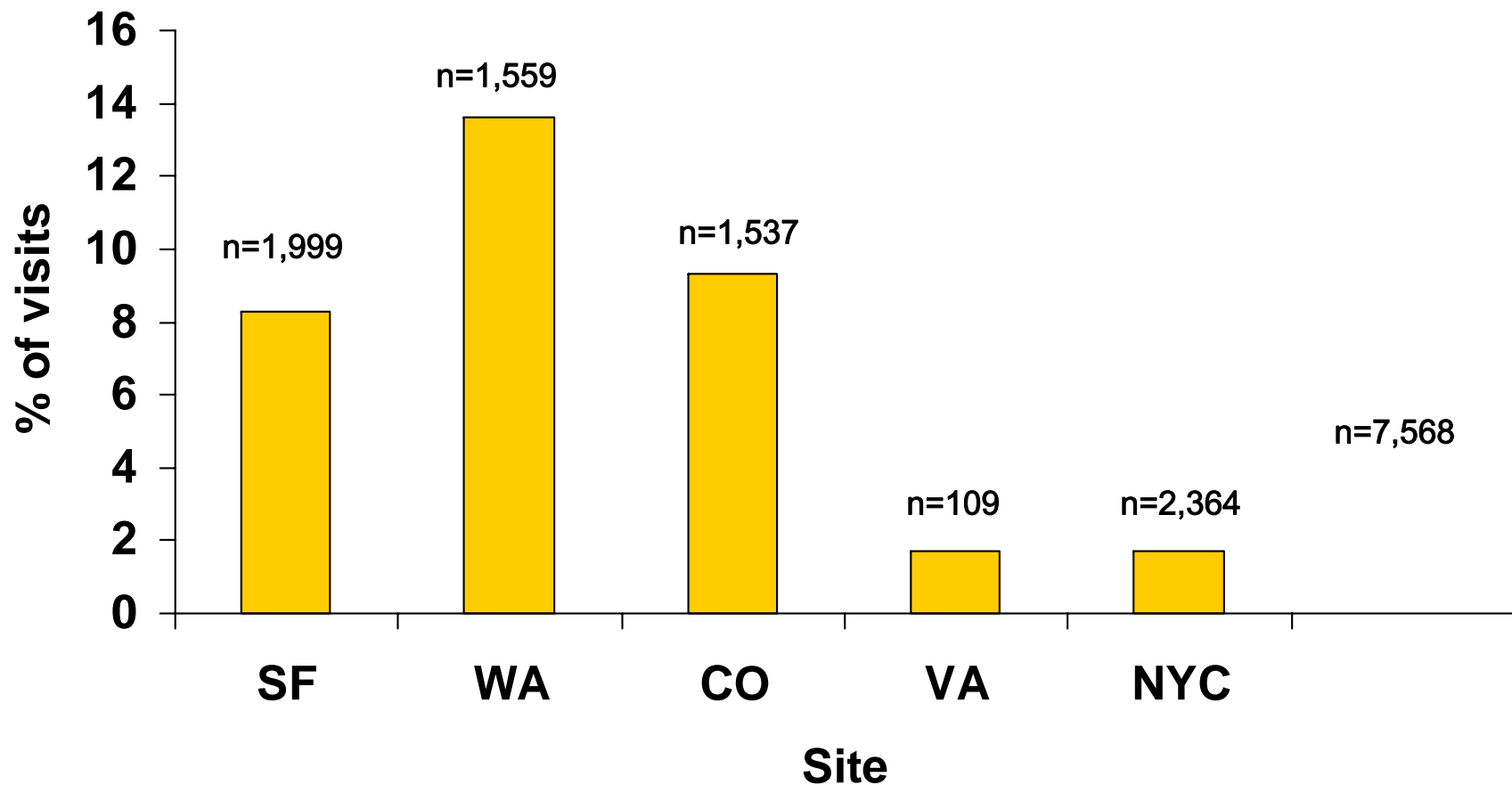
# Genital warts STD Clinics

- STD clinic data suggests genital warts are the most common STD diagnosis
- SSuN: 17 STD clinics in 5 geographic areas (CO, NYC, SF, VA, WA)





# Proportion (and number) of STD clinic visits related to genital warts



# Genital warts

## Issues for cost effectiveness

- HPV vaccination could reduce the costs associated with genital warts
  - Direct medical costs: cost of treatment, repeat visits for treatment
  - Quality of life: Quality adjusted life years (QALY)
    - Short term reduction in quality of life of ~10%
    - Limited studies, expert opinion
  - Impact will be seen earlier than for cervical cancer and cancer precursor outcomes

# Genital warts

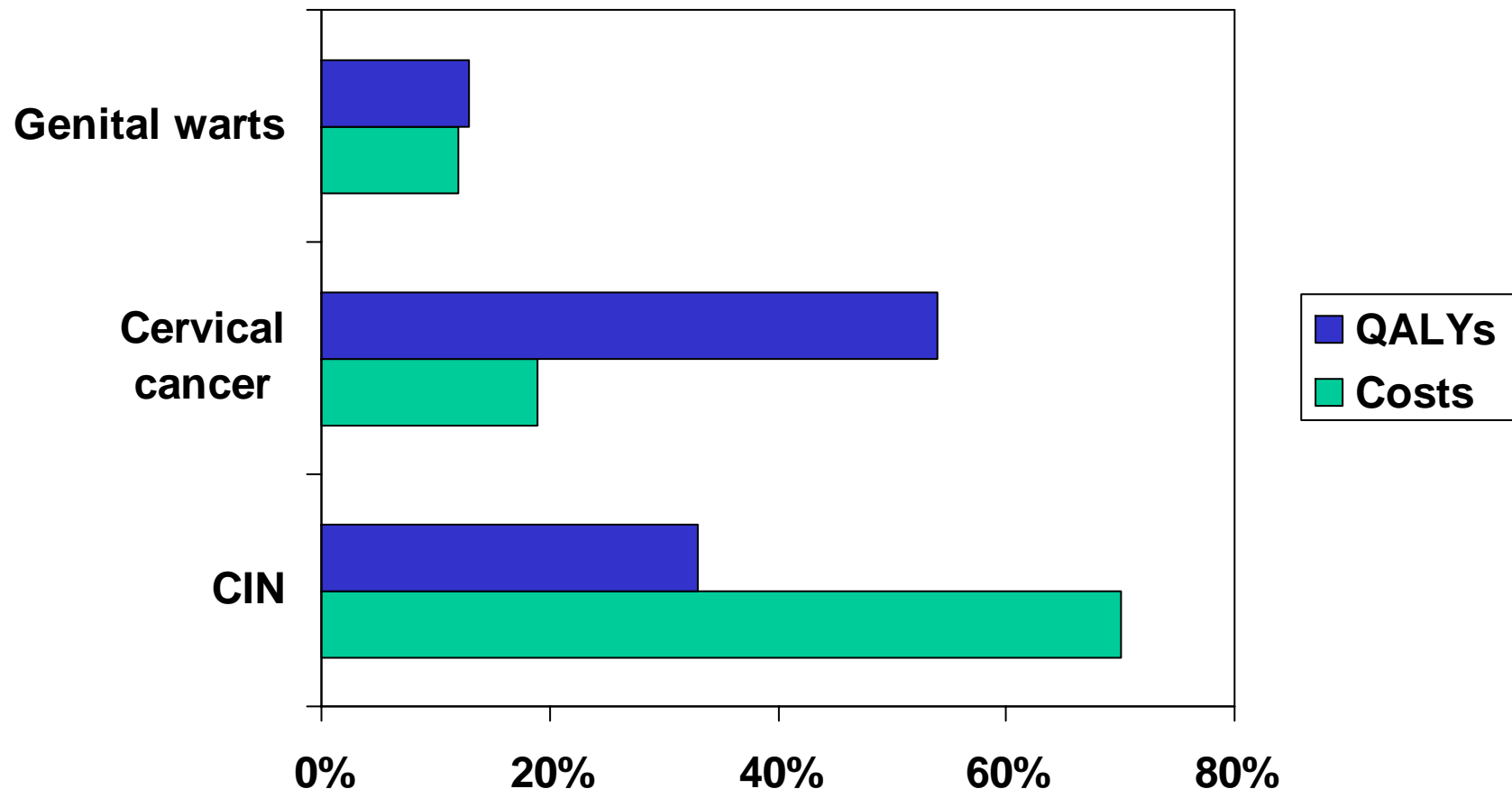
## Economic burden

- Annual direct healthcare costs of genital warts in the U.S. are estimated to be \$200-225 million
- Cost per treated case: \$567
  - Treatment costs using commonly prescribed therapies: ~\$150-2400
  - Repeat visits for office treatments--average of 3 visits

Chesson H, Perspect Reprod Health 2004, Insigna R, Pharmacoec 2005,  
Chesson H, ISSTD 2007

# Averted costs and quality-adjusted life years (QALYs) saved by HPV vaccination

Assumes vaccination of 12-year-old girls only, 70% coverage, 100% efficacy, 100-year time horizon (3% discount rate). Excludes indirect benefits (herd immunity)



Source: Chesson et al, "The cost-effectiveness of HPV vaccination in the United States: Estimates from a simplified model." 2007 ISSTD Conference.

# Summary

- Imprecise estimates of prevalence and incidence of genital warts in the U.S.
  - Incidence ~500,000 cases/year
- Genital warts are common in young women and men
  - Peak prevalence in the 20-30s
- Substantial health and economic burden due to genital warts

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