Sexually Transmitted Infection (STI) in the Forgotten Age Group

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DEFINITIONS

Age Groups as Defined by WHO

Children – person with age between 0-9 yrs.

Adolescents – person with age between 10-19 yrs.

Youth – persons with age between 15-24 yrs.

Young people – person with age between 10-24 years

DEFINITIONS

Sexually Transmitted Infections

A group of infections, caused by different pathogens, spread through person to person sexual contact

Maybe transmitted from mother to child during pregnancy and childbirth through contact with blood and tissues.

Common Sexually Transmitted Pathogens

Bacteria	Diseased Caused
Neisseria gonorrheae	Gonorrheal Infection
Chlamydia trachomatis	Chlamydia infection
Triponema pallidum	Syphilis
Hemophilus Ducreiji	Chancroid
Klbesiella granulomatis	Granuloma inguinale

Common Sexually Transmitted Pathogens

Viruses	Disease Caused
Human Immunodeficiency virus	HIV
Herpes Simplex type 2	Anogenital herpes
Human Pappiloma Virus	Genital Warts, cervical ca
Hepatitis B Cytomegalovirus	Hepatitis
Others: Trichomonas Vaginalis Candida Albicans	 Vaginitis Vulvo vaginitis

Mode of Transmission of Sexually Transmitted Pathogens

Primarily sexual Intercourse

Mother to child

Blood body fluid and Tissues

Epidemiology of STI

Global Burden

- STI constitute a huge health and economic burden
- STI accounts for 17% of economic loss caused by illnesses
- More than 340 million new cases of curable STI occur every year in the 15-49 age group
- The largest proportion of cases are in South, Southeast asia followed by Subsaharan Africa then Latin America
- Socioeconomic conditions, sexual behavior increases vulnerability to STI

Epidemiology of STI

Global Burden (Adolescents)

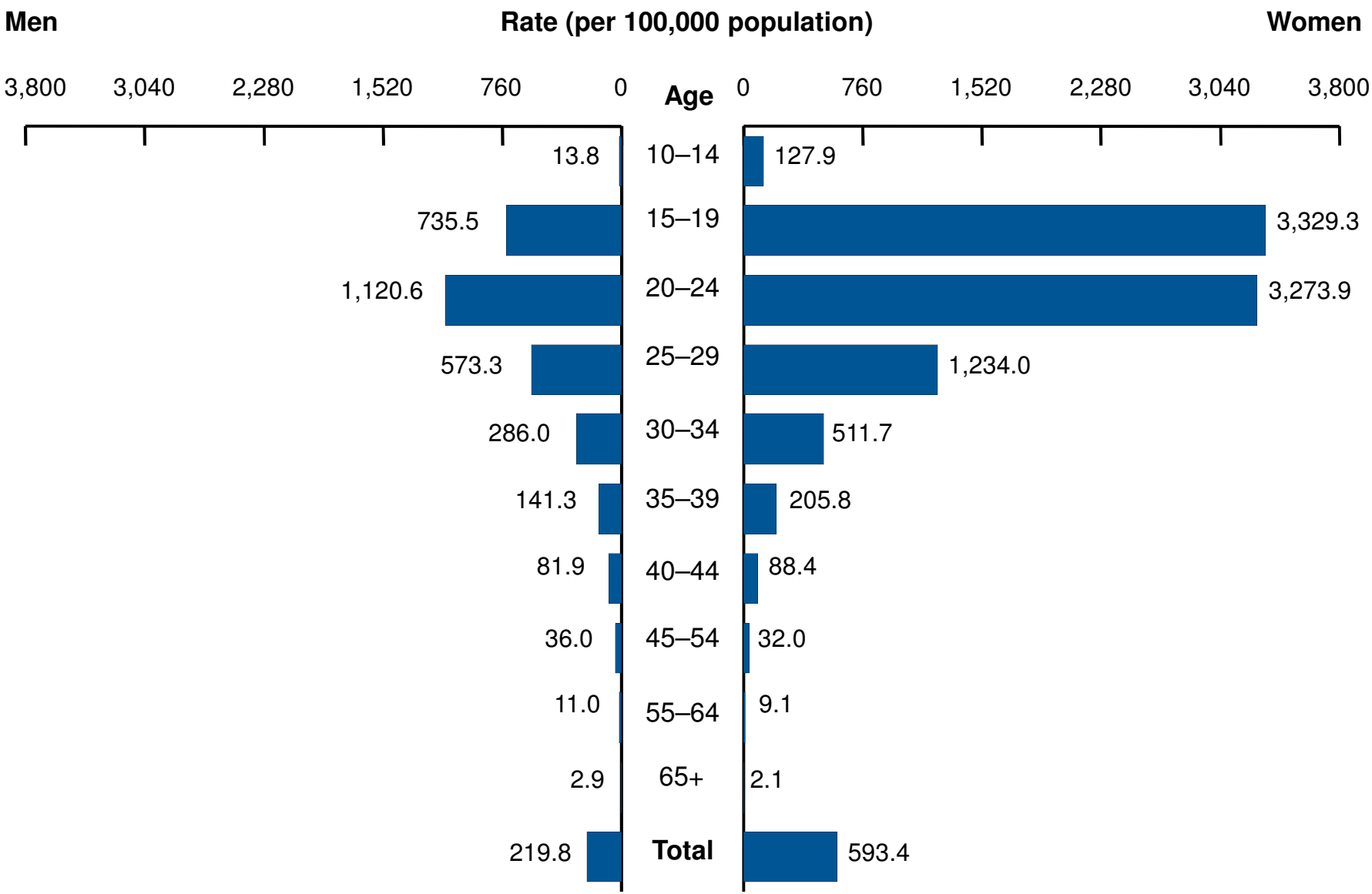
- Every year one (1) in 20 adolescents contract a bacterial STI
- STI disproportionally affect women and adolescents girls
- age of acquisition is becoming younger

Epidemiology of STI in US

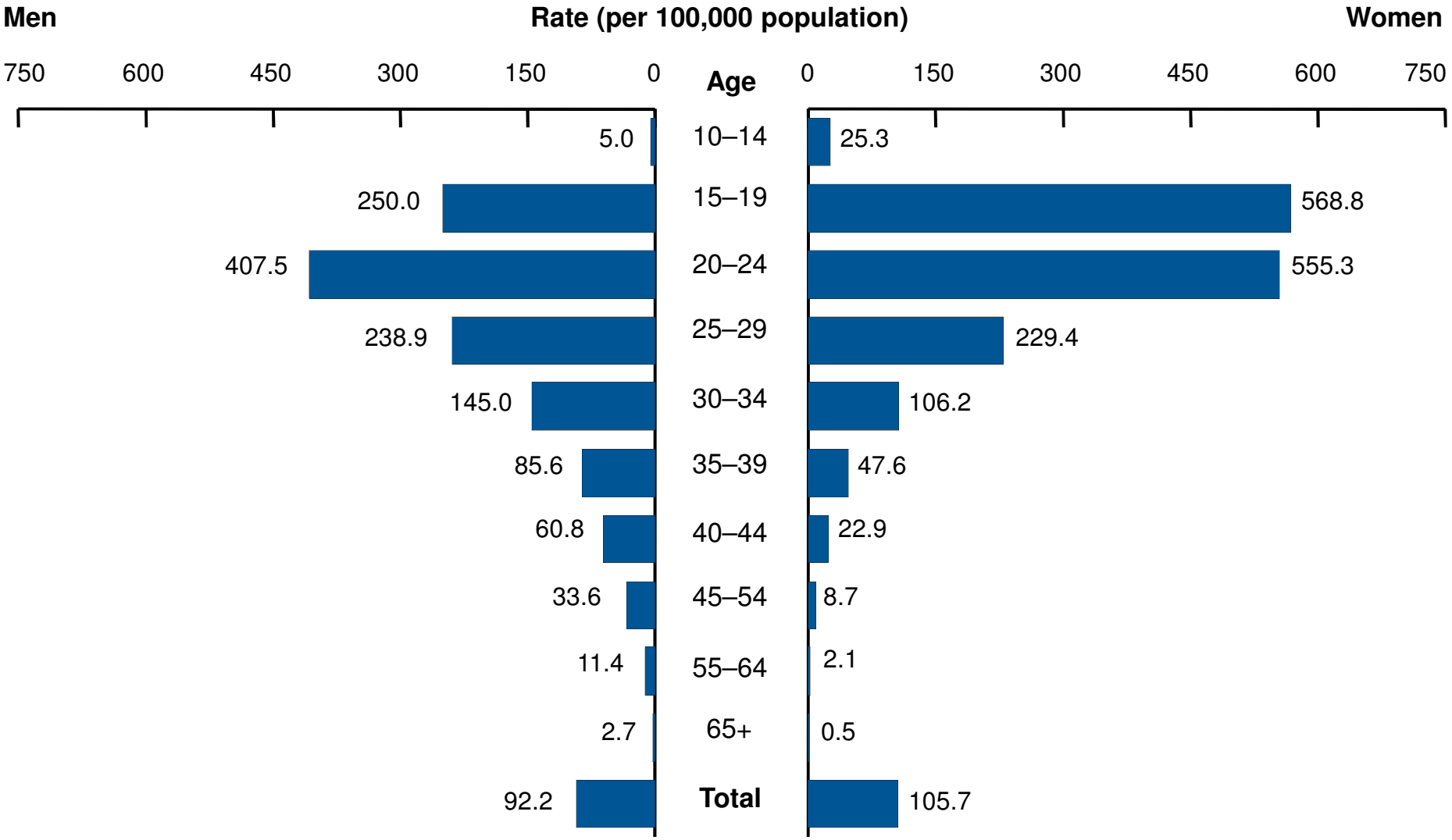
- Overall prevalence rate decreased in all age group
- Adolescents and young adults higher than any other group
- Prevalence rate highest among adolescents
- Reported rates of chlamydia and gonorrhea highest among females 15-19 years
- High AIDS prevalence in 25-39 age group presumably acquired over previous decade at age 15-29 years.
- Many HPV infection acquired during adolescent years.

(MMWR Dec. 2010)

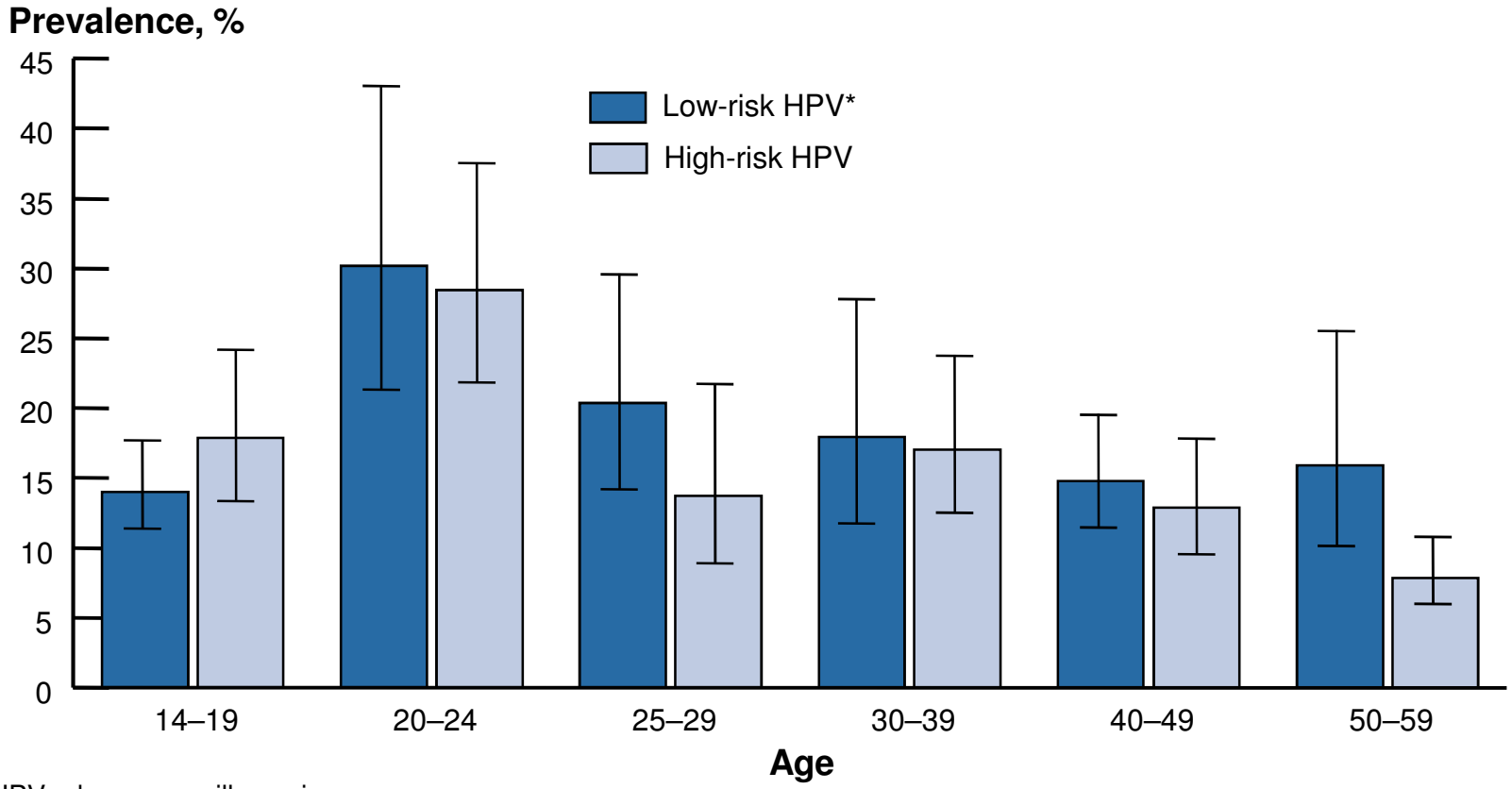
Chlamydia—Rates by Age and Sex, United States, 2009



Gonorrhea—Rates by Age and Sex, United States, 2009



Human Papillomavirus—Prevalence of High-risk and Low-risk Types Among Females Aged 14–59 Years, National Health and Nutrition Examination Survey, 2003–2004

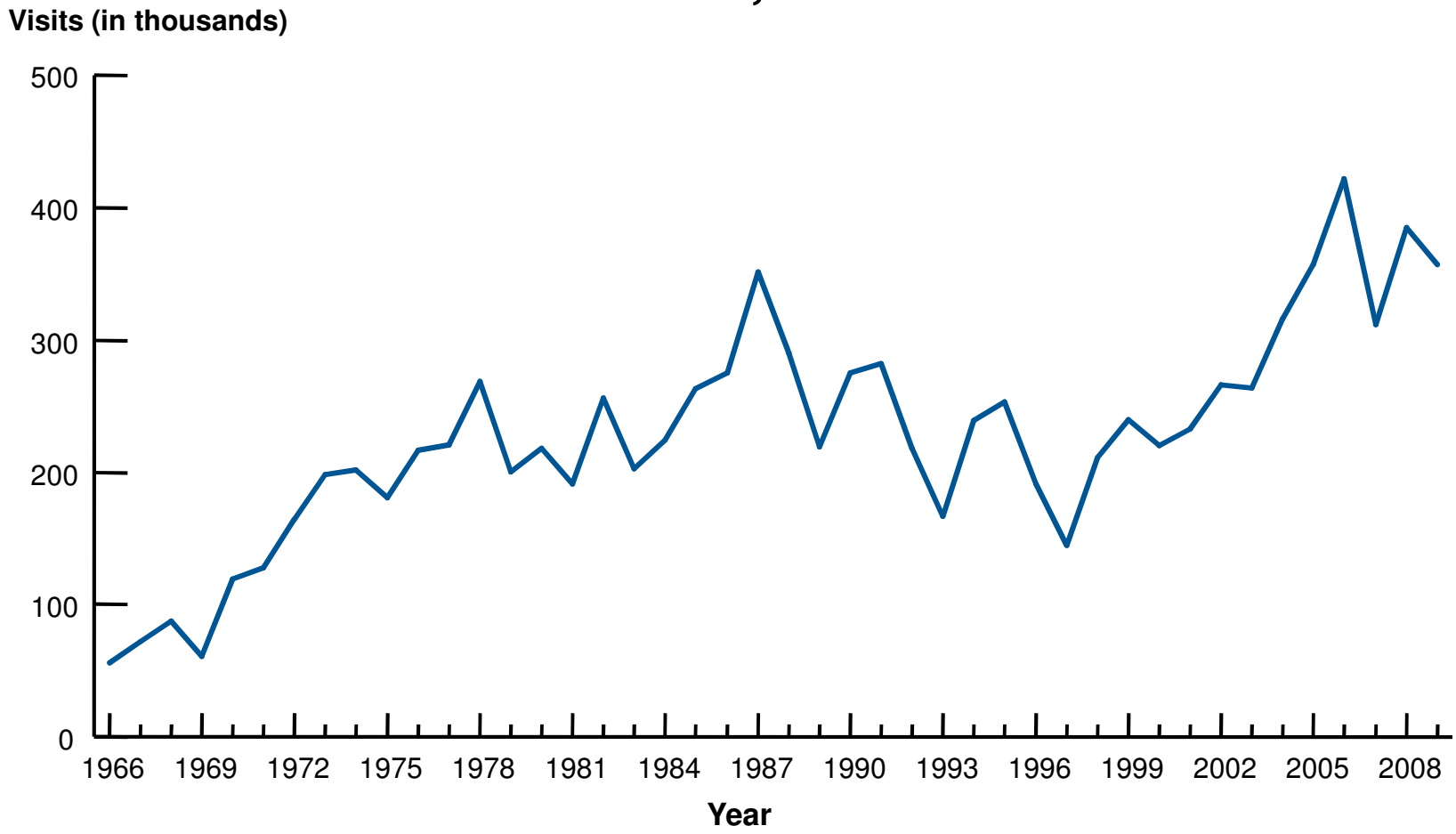


* HPV = human papillomavirus.

NOTE: Error bars indicate 95% confidence intervals. Both high-risk and low-risk HPV types were detected in some females.

SOURCE: Dunne EF, Unger ER, Sternberg M, McQuillan G, Swan DC, Patel SS, et al. Prevalence of HPV infection among females in the United States. JAMA. 2007;297(8):813-9.

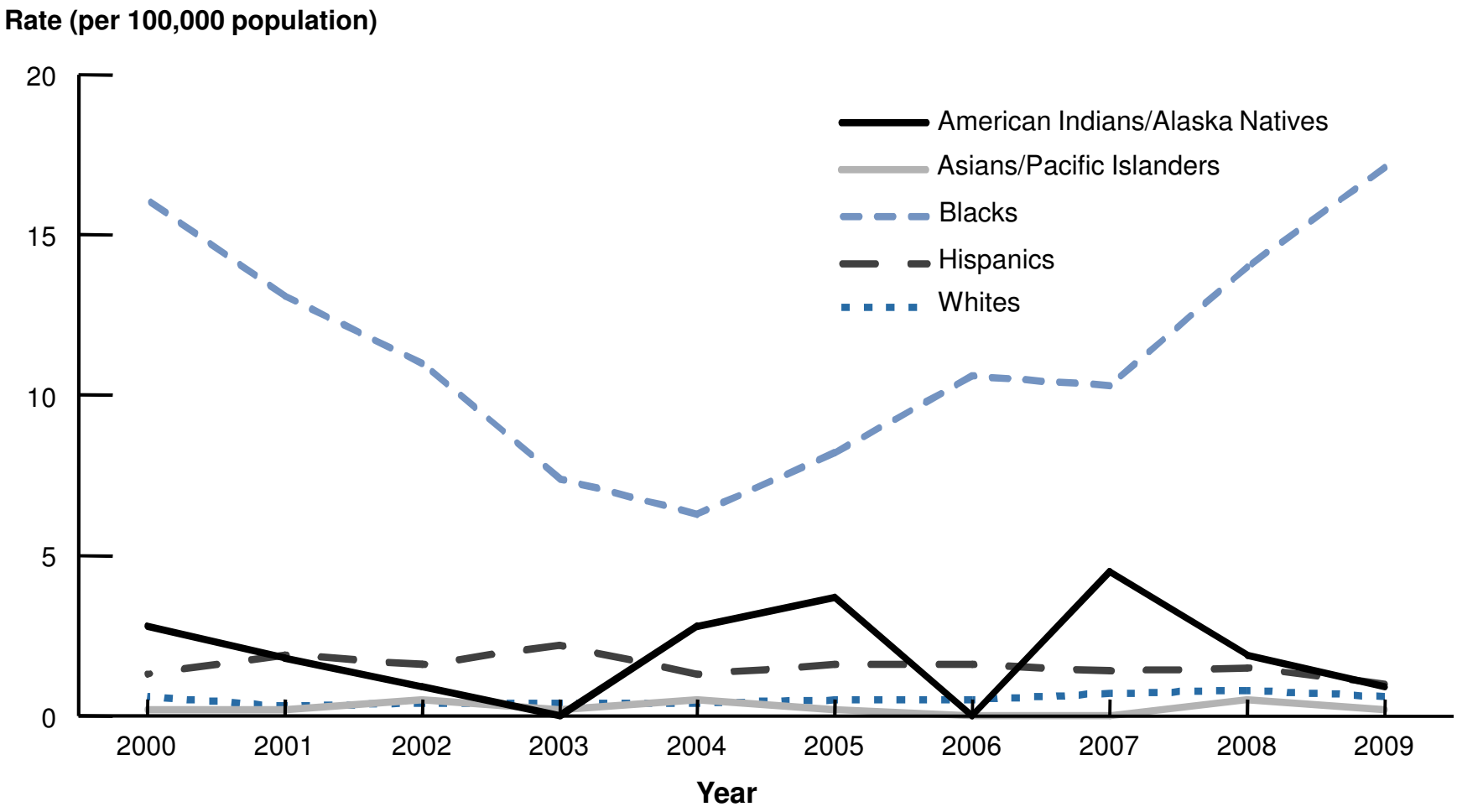
Genital Warts—Initial Visits to Physicians' Offices, United States, 1966–2009



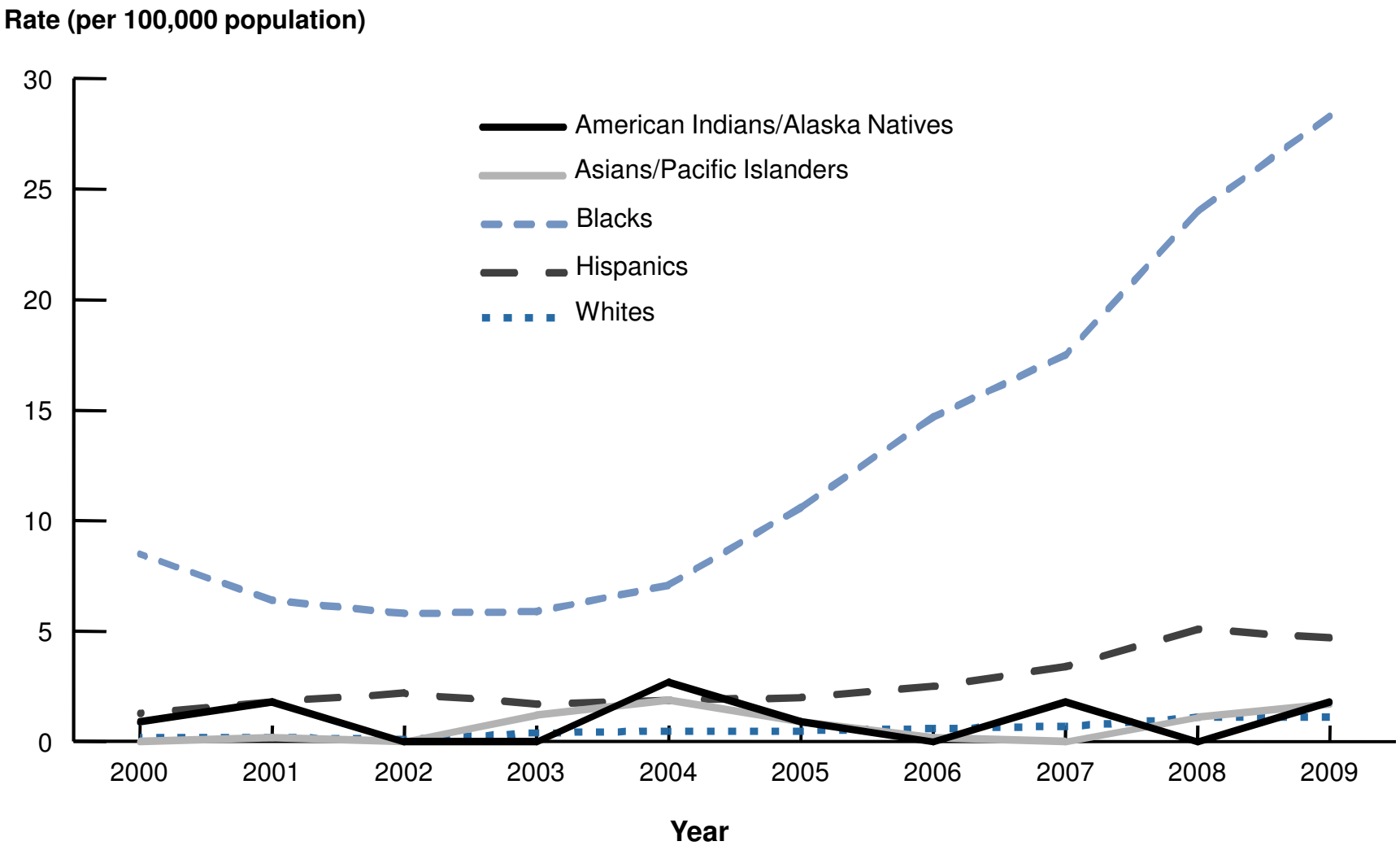
NOTE: The relative standard errors for genital warts estimates of more than 100,000 range from 18% to 30%.

SOURCE: IMS Health, Integrated Promotional Services™. IMS Health Report, 1966–2009.

Primary and Secondary Syphilis—Rates Among Females Aged 15–19 Years by Race/Ethnicity, United States, 2000–2009



Primary and Secondary Syphilis—Rates Among Males Aged 15–19 Years by Race/Ethnicity, United States, 2000–2009



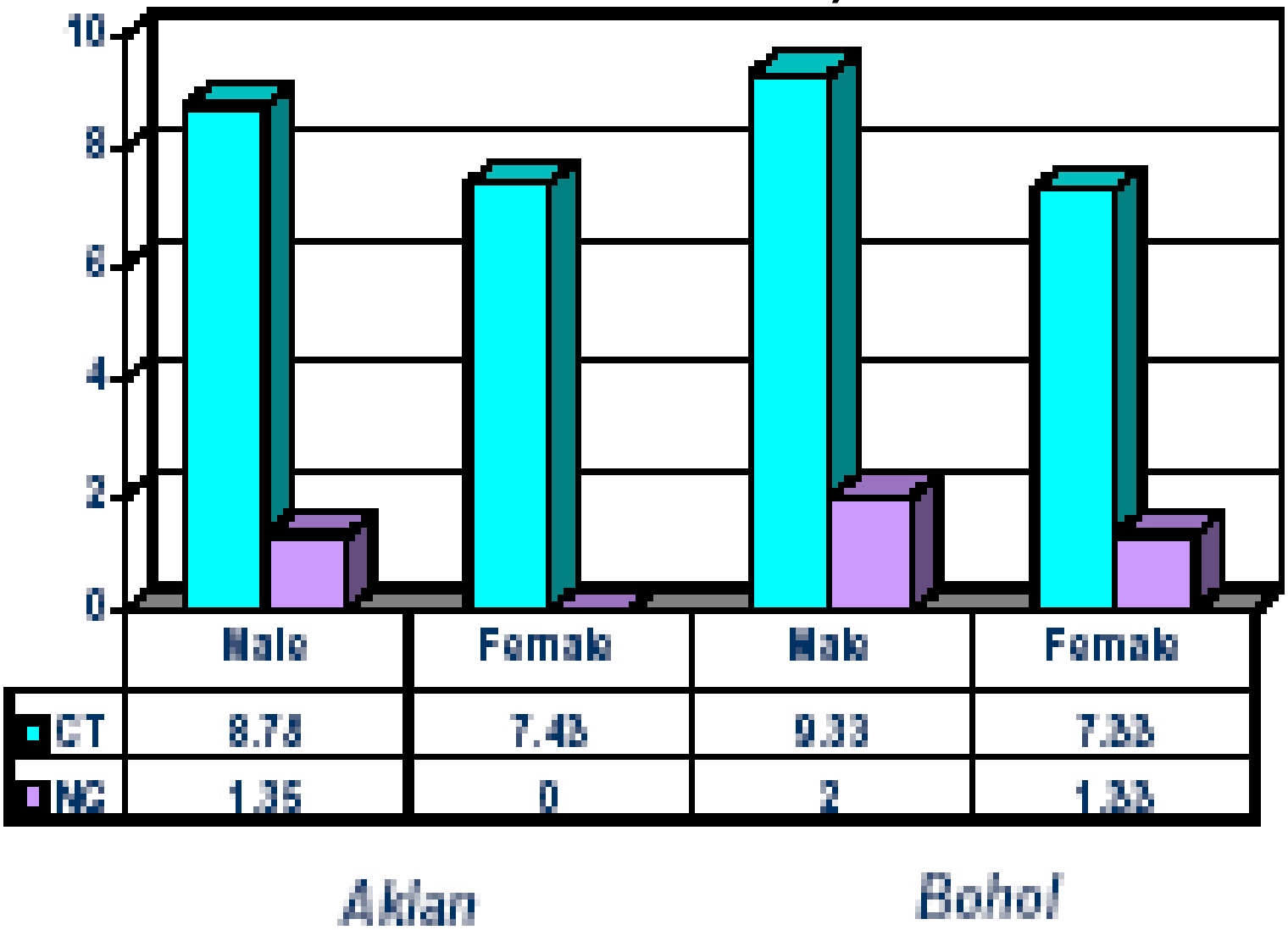
Epidemiology of STI/RTI in the Philippines

Prevalence of STI's Among the Different Groups
RTI/STI Prevalence Survey in Selected Sites in the Philippines
February to May 2002 (n=300)

STI	Female (Gen. Pop;n	Male (Gen. Pop;n	Female (Youth)	Male (Youth)
Chlamydial infection	5.75	4.4	7.7	9
Gonorrhea	0.75	1.1	0.7	1.7
Syphillis	0.17	0.2	N/D	N/A
Hepatitis B	3.2	9.6	N/D	N/A
Trichomonas	3.18	N/A	N/D	N/A
Bacterial vaginosis	28.56	N/A	N/D	N/A
Candidiasis	17.16	N/A	N/D	N/A

DOH/FHI 2002

RTI/STI Prevalence Among Youth (January to June 2001)



RTI/STI Prevalence in Selected Sites in the Philippines

Adolescent Pregnancy

Percent of Teenager 15-19 years who are mothers or pregnant with their first child

Age	%
15	0.5
16	1.3
17	3.6
18	10.3
19	19.0
ALL	29.7

(DHS 1993)

Reported Non Regular Sexual Partnerships in the last 12 months

Age group (yrs)	Male (%)	Female (%)
15-19	37.5	0
15-49	16.1	1.3
20-24	40.3	10
25-39	15.3	1.2
40-49	7.1	0
50+	41	0

KABP Behavioral Studies 1992

Epidemiology of HIV/AIDS in RP (Updates)

In UNAIDS 2010 global AIDS report, releases in late November, the Philippines was one of seven countries in which **HIV incidence increased by more than 25 percent** between 2001 and 2009. Among Asian countries, only **Philippines and Bangladesh** were reporting increases in HIV cases, with others either stable or decreasing.

DOH Updated HIV/AIDS Surveillance

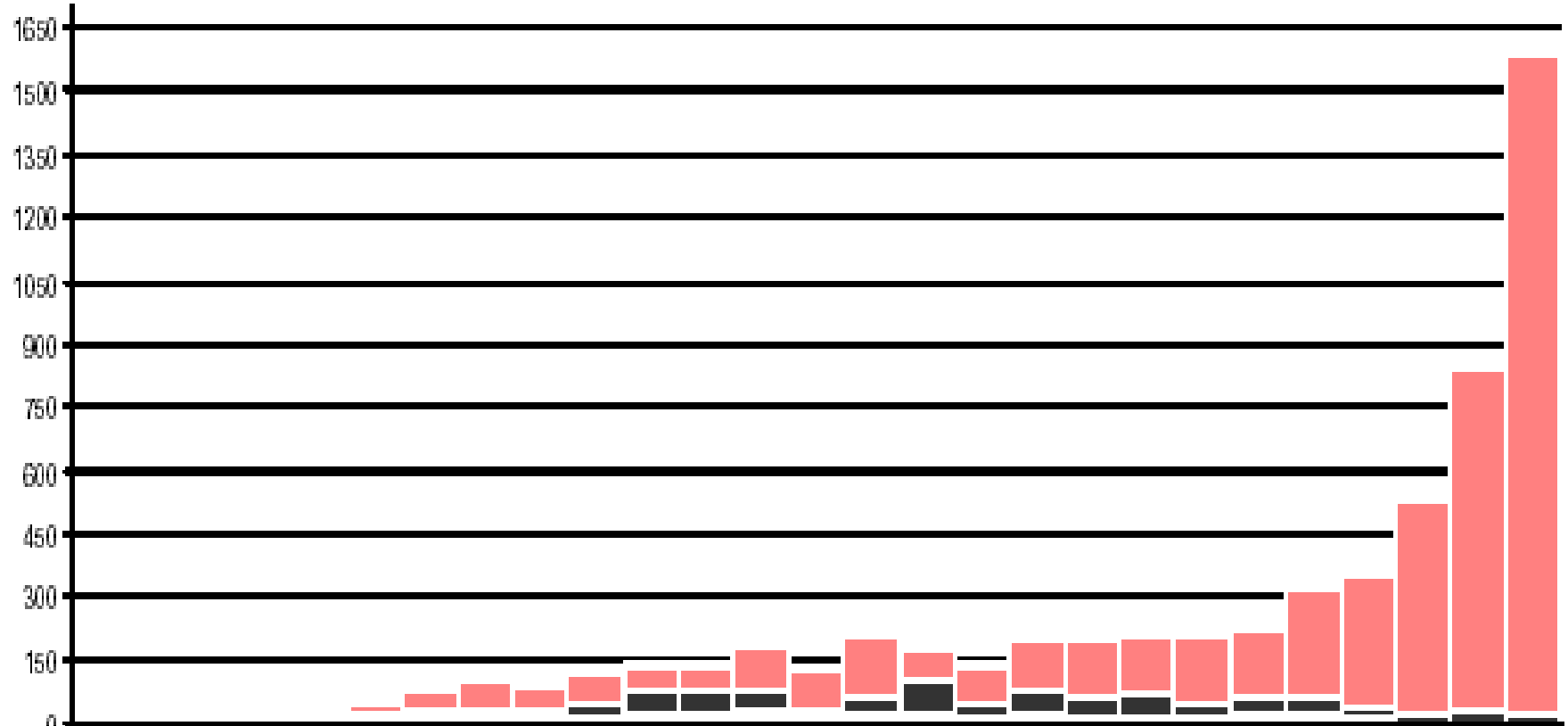
Newly Diagnosed HIV Cases in the Philippines (Jan. 1984 – December 2010

Table 1. Quick Facts

Demographic Data	Dec 2010	Jan-Dec 2010	Cumulative Data: 1984–2010
Total Reported Cases	174	1,591	6,015
Asymptomatic Cases	171	1,571	5,158
AIDS Cases	3	20	857
Males	167	1,467	4,699*
Females	7	124	1,305*
Youth 15-24yo	59	489	1,213
Children <15yo	0	3	55
Reported Deaths due to AIDS	0	2	323

**Note: No data available on sex for eleven (11) cases.*

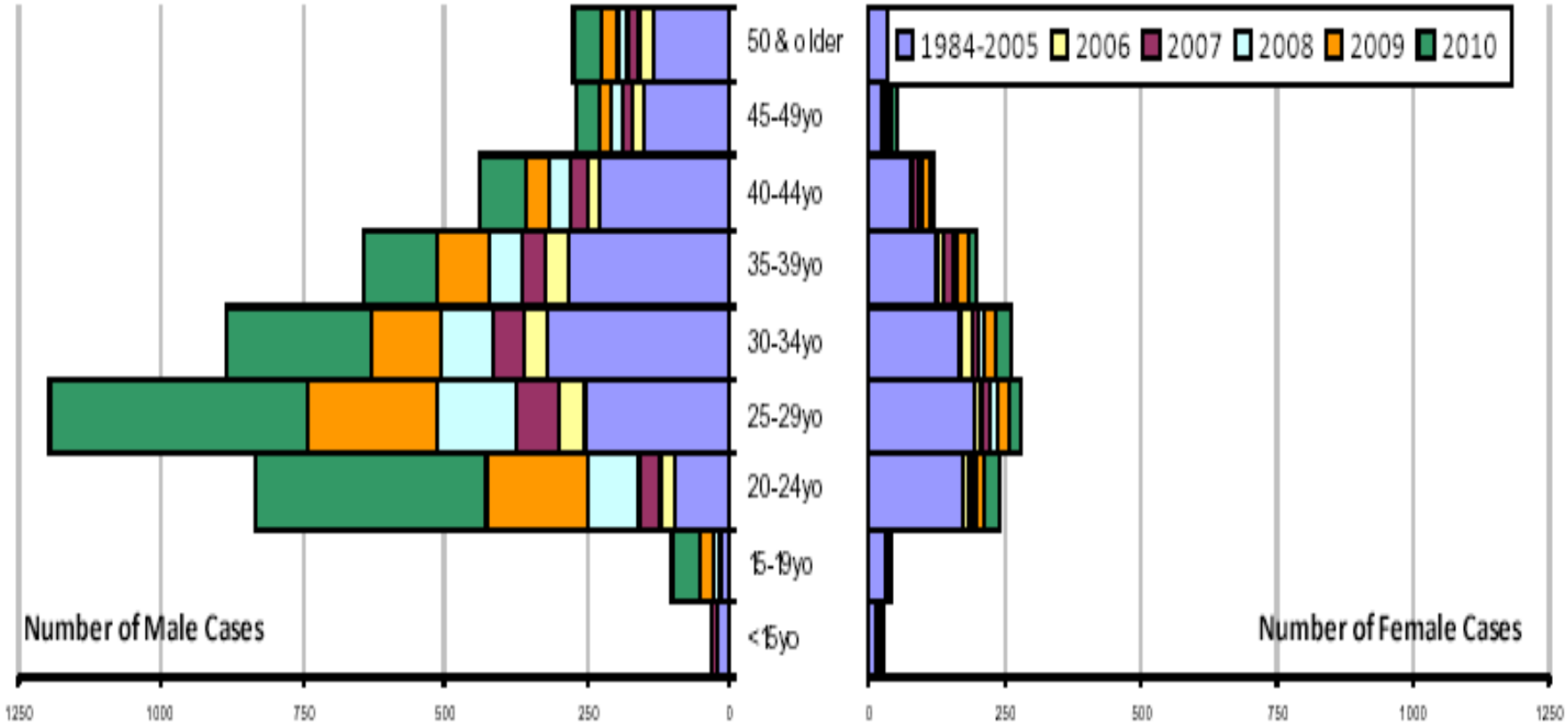
Number of HIV/AIDS Cases Reported in the Philippines by Year, January 1984 to December 2010



	'84	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10
TOTAL	2	10	29	38	32	39	66	85	72	102	118	116	154	117	189	158	123	174	184	193	199	210	309	342	528	835	1591
Asymptomatic	0	6	18	25	21	29	48	68	51	64	61	65	104	94	144	80	83	118	140	139	161	171	273	312	506	806	1571
AIDS	2	4	11	13	11	10	18	17	21	38	57	51	50	23	45	78	40	56	44	54	38	39	36	30	22	29	20
Death	2	4	10	12	9	8	15	13	13	11	19	24	27	10	16	17	9	20	11	11	8	16	18	10	*7	1	2

*Five initially asymptomatic cases reported in 2008, died due AIDS that same year.

Comparison of the Distribution of Male and Female HIV Cases by Age-Group and Certain Highlighted Years



	<15yo	15-19yo	20-24yo	25-29yo	30-34yo	35-39yo	40-44yo	45-49yo	50 & older
2010	1	50	406	454	256	128	81	43	48
2009	1	22	179	227	124	90	41	19	29
2008	2	11	91	141	90	59	36	23	20
2007	6	1	36	74	54	43	30	15	19
2006	1	2	26	48	40	38	20	21	23
1984-2005	20	12	95	252	320	283	229	149	134

	<15yo	15-19yo	20-24yo	25-29yo	30-34yo	35-39yo	40-44yo	45-49yo	50 & older
2010	2	5	28	21	34	15	9	6	4
2009	1	4	13	19	21	20	14	6	5
2008	0	0	8	14	8	10	9	3	3
2007	3	0	4	16	12	14	6	5	3
2006	3	3	13	13	22	16	8	4	8
1984-2005	15	30	174	196	168	124	76	26	33

Why Are Adolescents Vulnerable to STI

1. Decreasing age of sexual debut
2. Modern technology
3. Outmigration of parents (AIDS in RP 2010)
4. Low condom use
5. Increasing number of youth initiated into sex work with booth male and female sex partners

Why Are Adolescents Vulnerable to STI

6. Persistently high prevalence of drugs and other substances use
7. Lower education across different section of population
8. Survival sex (exchanging sex for money, drugs, shelter and food)
9. Multiple obstacles in accessing services
10. Increased susceptibility to infections due to anatomic, physiological and hormonal changes.

Consequences of Sexually Transmitted Infection

- Acute Infection
- Delayed Serious consequences
  - Pelvic inflammatory disease
  - Ectopic pregnancy
  - Infertility
  - Cervical cancer
  - Untimely death of infants and adults
- Increased risk of acquiring or transmitting HIV

Consequences of Sexually Transmitted Infection

- Untreated chlamydia infection
  - 10-40% of chlamydia infection in women leads to symptomatic pelvic inflammatory disease (PID) and 6 – 10x likely to develop ectopic pregnancy
- Untreated gonorrhea and chlamydia infection; 30-50% of infants born of infected mothers develop serious eye infections leading to blindness

Despite the high prevalence of STI among adolescents, healthcare professionals frequently fail to inquire about

- Sexual behavior
- Assess STI risks
- Counsel about risk reduction and screen for STI

STI Case Management

The care of a persons with STI related symptoms or positive test for one or more STI

- History taking
- Clinical examination
- Correct diagnosis
- Early and effective treatment
- Case reporting
- Clinical diagnosis appropriate

Screening for STI (History)

Features of Adolescents that Increase the Risk of Contracting STI

- Sexual contact with person(s) with known STI or history of STI
- Symptoms or signs of STI
- Multiple Sexual Partners
- Street involvement (eg., homelessness)
- Sexual intercourse with new partner during last 2 months
- More than 2 sexual partners during previous 12 months
- No or consistent use of barrier methods

Screening for STI (History)

Features of Adolescents that Increase the Risk of Contracting STI

- Survival sex (eg., exchanging sex for money, drugs, shelters or food
- Time spent in detention facilities
- Having been a patient in an STI Clinic
- Having been pregnant or having requested a pregnancy test
- Injection drug use
- Males who have sex with males

Screening For STI (Clinical Examination)

Female

- Vulvo vaginitis/itching
- Vaginal discharge
- Urethral discharge urethritis
- Lower abdominal pain
- genital lesions
- Inguinal swelling

Screening For STI (Clinical Examination)

Male

- Urethral discharge (dysuria)
- Anogenital lesions (ulcerations, warts)
- Scrotal/inguinal swelling

Asymptomatic STI

- Gonococcal — RP
  - 70-85% in females — 31%
  - 10% in males — 88%
- No gonococcal
  - 25% both

Diagnostic Tests for STI

1. Microscopic Examination
   - Grain stain of urethral discharge
   - Tzank smear of vesicles – ulcers
   - Wet mount of vaginal discharge
2. Culture Isolation
   - For N. gonorrhea
   - Tissue culture for herpes
3. NAATS (PCR)
   - C. Trachomatis
   - N. gonorrhea
4. Serologic Tests
   - T. pallidum
   - HIV

Syndromic Management of STI

Based on:

- Identification of consistent groups of symptoms and easily recognized signs (syndrome) and
- Provision of treatment that will deal with majority of or the most serious organism causing the syndrome.

Rationale:

- Problem of inavailability of equipments and supplies and trained personnel in low resource areas
- High lost of commercially available specific diagnostic tests.

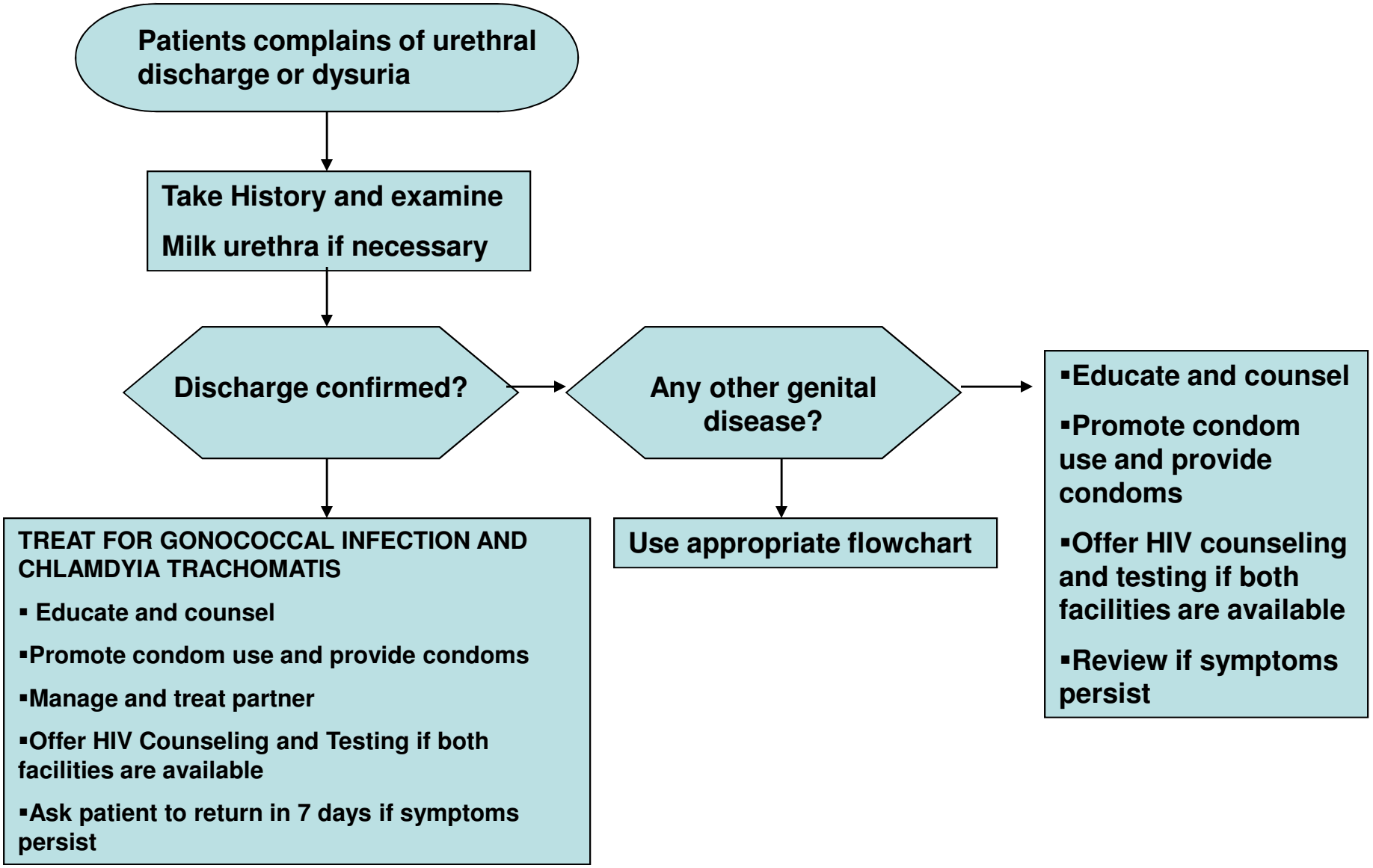
Main Syndromes of Common STI

Urethral Discharge
Genital Ulcers
Lower Abdominal pain

} satisfactory

Vaginal discharge – with limitations

Urethral Discharge



Recommended Syndromic Treatment for Urethral Discharge

The major pathogens causing urethral discharge are Neisseria gonorrhoeae (N. gonorrhoeae) and Chlamydia trachomatis (C. trachomatis). In the syndromic management, treatment of a patient with urethral discharge should adequately cover these two organisms. Where reliable laboratory facilities are available, a distinction can be made between the two organisms and specific treatment instituted.

Recommended Syndromic Treatment for Urethral Discharge

Treatment Options for Gonorrhea	Treatment Options for Chlamdyia
Ciprofloxacin Cefrtiaxone Cefixime Spectinomycin	Doxycycline Azithromycin
	Alternatives
	Amoxycillin Erythromycin (if Tetracycline contrainidcated Ofloxacin Tetracycline

Recommended Syndromic Treatment for Genital Ulcer Disease

Drug Options for Syphilis	Drug options for Chancroid	Drug Options for Granuloma inguinale	Drug Options for LGV	Drug Options for genital herpes
Benzathine benzylpenicillin	Ciprofloxacin Erythromycin Azithromycin	Azithromycin Doxycycline	Doxycycline Erythromycin	Acyclovir Valaciclovir Famciclovir
Alternatives	**Alternatives**	**Alternatives**	**Alternatives**	
Procaine	Ceftriaxone	Erythromycin Tetracycline Trimethoprim/ sulfamethoxazole	tetracycline	
benzylpenicillin				
Penicillin allergy and non-pregnant				
Doxycycline				
Tetracycline				

Recommended Syndromic Treatment for Genital Ulcer Disease

The decision to treat for chancroid, granuloma inguinale or LGV depends on the local epidemiology of the infections.

Specific treatment for herpes genitalis is recommended as it offers clinical benefits to most symptomatic patients. Health education and counseling regarding the recurrent nature of genital herpes lesions, the natural history, sexual transmission, probable perinatal transmission of the infection and available methods to reduce transmission, are an integral part of genital herpes management.

Management of STI

Effective control and prevention of STI can be achieved using a combination of approaches

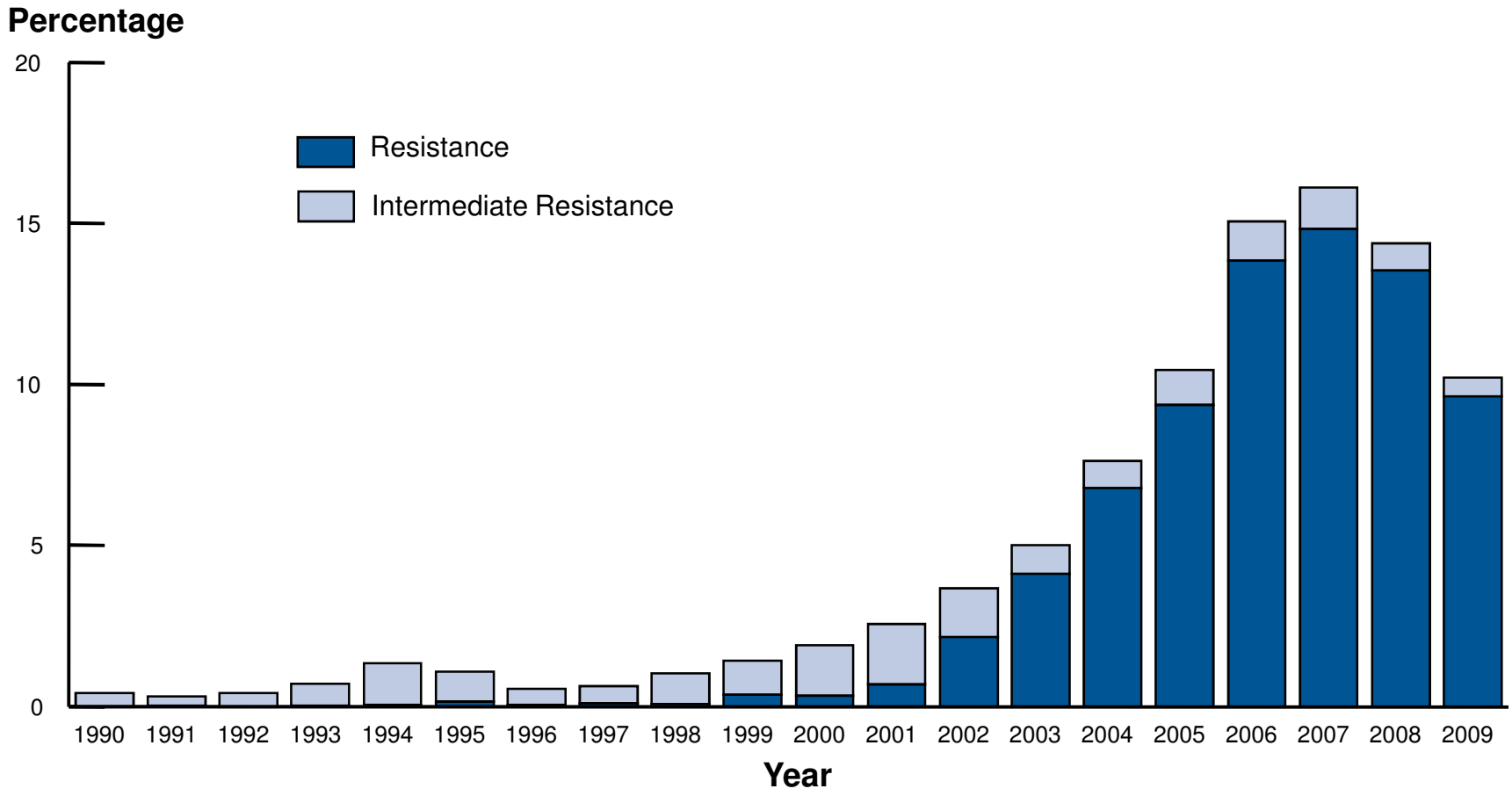
Major Components of STI Control

- Education of individual at risk, on modes of transmission and means of reducing the risk of transmission
- Detection of infection in asymptomatic subjects and symptomatic but unlikely to seek diagnostic and therapeutic services
- Effective management of individuals seeking care
- Treatment and education of sexual partners
- Primary prevention by vaccination.

Criteria for the Selection of STI Drugs

1. High efficiency (at least 95% effective)
2. Low cost
3. Safety – acceptable toxiety and tolerance
4. Organism resistance not likely to be delayed
5. Single dose if possible
6. Oral administration
7. Not contraindicated for pregnant or lactating women

Gonococcal Isolate Surveillance Project (GISP)—Percentage of *Neisseria gonorrhoeae* Isolates with Resistance or Intermediate Resistance to Ciprofloxacin, 1990–2009



NOTE: Resistant isolates have ciprofloxacin minimum inhibitory concentrations (MICs) >1 µg/ml. Isolates with intermediate resistance have ciprofloxacin MICs of 0.125–0.5 µg/ml. Susceptibility to ciprofloxacin was first measured in GISP in 1990.

Uncomplicated Gonococcal Infection; Treatment of Children Beyond the Newborn Period and Adolescents

Disease	Prepubertal Children Who Weigh <100 lb(<45kg)
Uncomplicated vulvovaginitis, cervicitis, urethritis, proctitis, or pharyngitis	Ceftriaxone, 125 mg, IM, in a single dose **OR** Spectinomycin, 40 mg/kg (maximum 2g), IM in a single dose **PLUS** Azithromycin, 20 mg/kg (maximum 1 g), orally, in a single dose **OR** Erythromycin, 50 mg/kg per day (maximum 2g/ day), orally, in 4 divided doses for 14 days

Uncomplicated Gonococcal Infection; Treatment of Children Beyond the Newborn Period and Adolescents

Disease	Patients Who Weigh <100 lb(<45kg) and Who are 8 Years or Older
Uncomplicated endocervicitis, urethritis, proctitis, or pharyngitis	Ceftriaxone, 125 mg, IM, in a single dose **OR** Cefixime, 400 mg, orally, in a single dose **PLUS** Azithromycin (1 g, orally, in a single dose) **OR** Doxycycline (100 mg, orally, twice a day for 7 days)

How Can We Help the Forgotten Age Group?

- Increase their awareness about STI/HIV
  - Risks
  - Signs and Symptoms
  - Prevention
  - Through IEC campaign and peer education
- Behavior Change
- Establish and strengthen innovative youth friendly health services to include RTI/STI
- Extend effective and appropriate intervention to adolescents and youth
- Strengthen surveillance of RTI/STI

THANK YOU!!