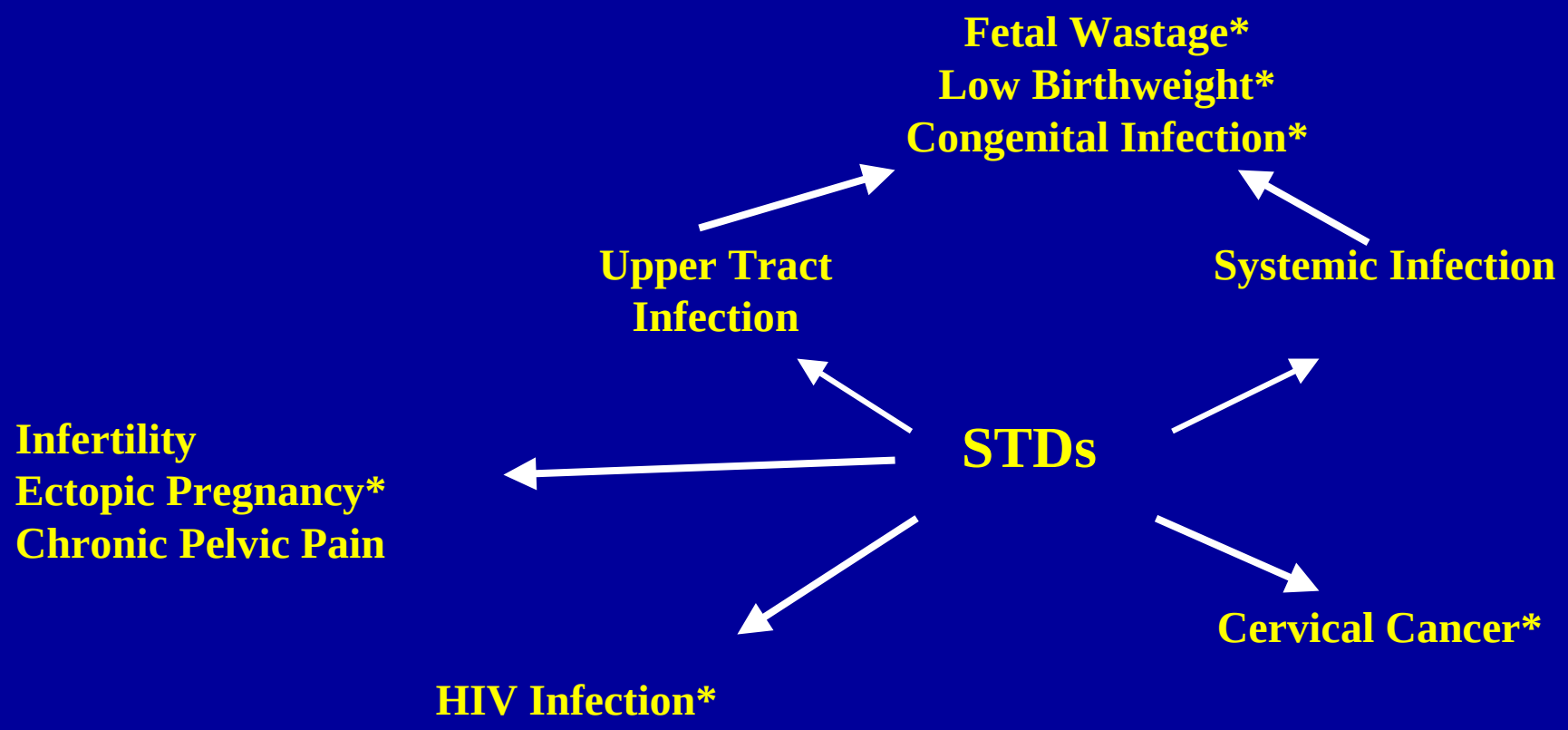
Emerging and Reemerging STDs: Challenges for STD Prevention Programs

Gail Bolan MD
Chief, STD Control Branch
CA Department of Health Services
Assistant Clinical Professor
Department of Medicine, UCSF

STD Morbidity United States 2001

	US reported cases	US estimated incidence (millions)	US estimated prevalence (millions)
CT	710,690	3	NA
GC	326,346	0.65	NA
Syphilis	5,790	0.07	NA
Congenital syphilis	240	NA	NA
HPV	NA	5.5	20
HSV	NA	1	45
Trichomoniasis	NA	5	NA
AIDS	42,008	0.02	.56
HIV	NA	NA	1
Hepatitis B	6,565	0.077	.75
Total	1,085,074	15.3	

Overview of Complications of Sexually Transmitted Diseases



* Potentially Fatal

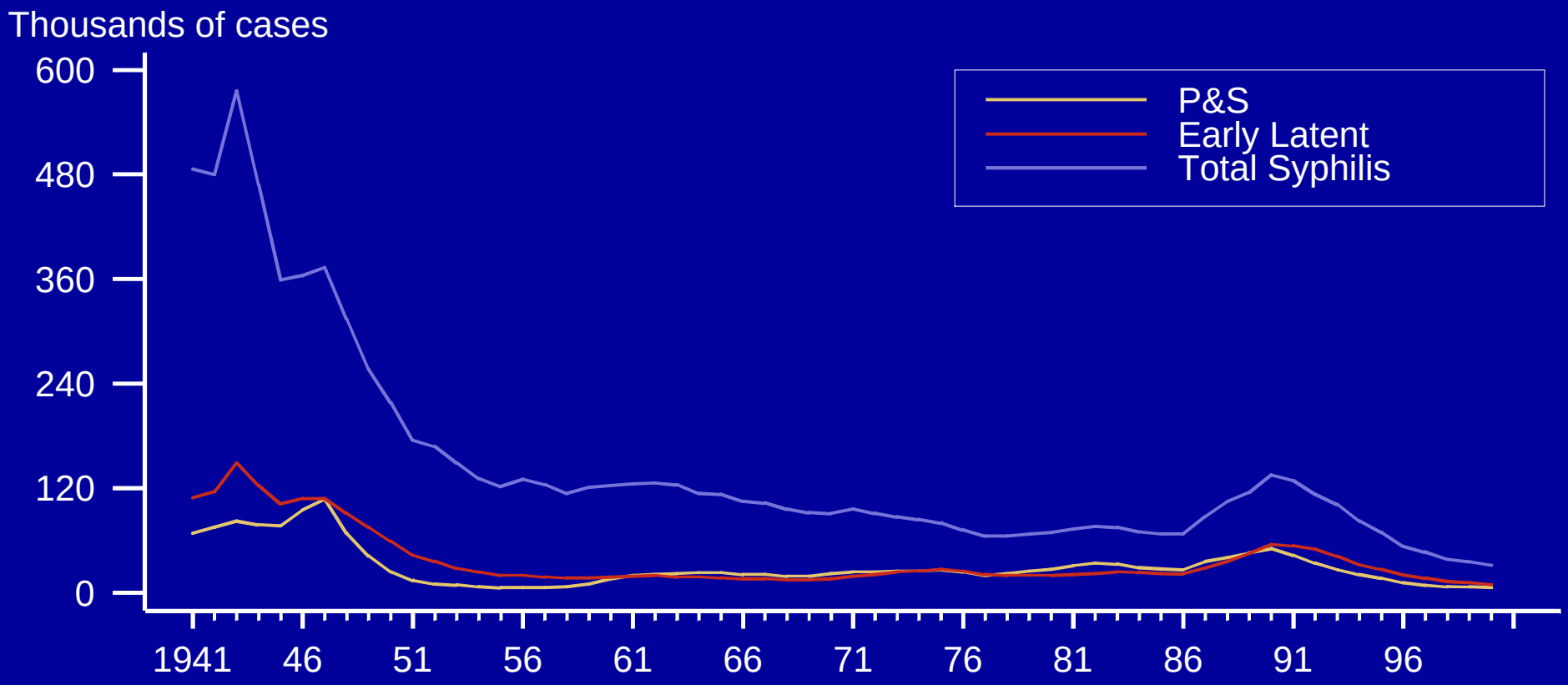
Increased Transmission of HIV in the Presence of other STDs

- By Increasing Susceptibility
  - Mucosal breakdown due to genital ulcer may facilitate HIV entry
  - Recruitment of WBCs to the site of active infection may act as an area of increased HIV receptors
- By Increasing Infectiousness
  - Increase of HIV viral load in semen, genital secretions and genital ulcers

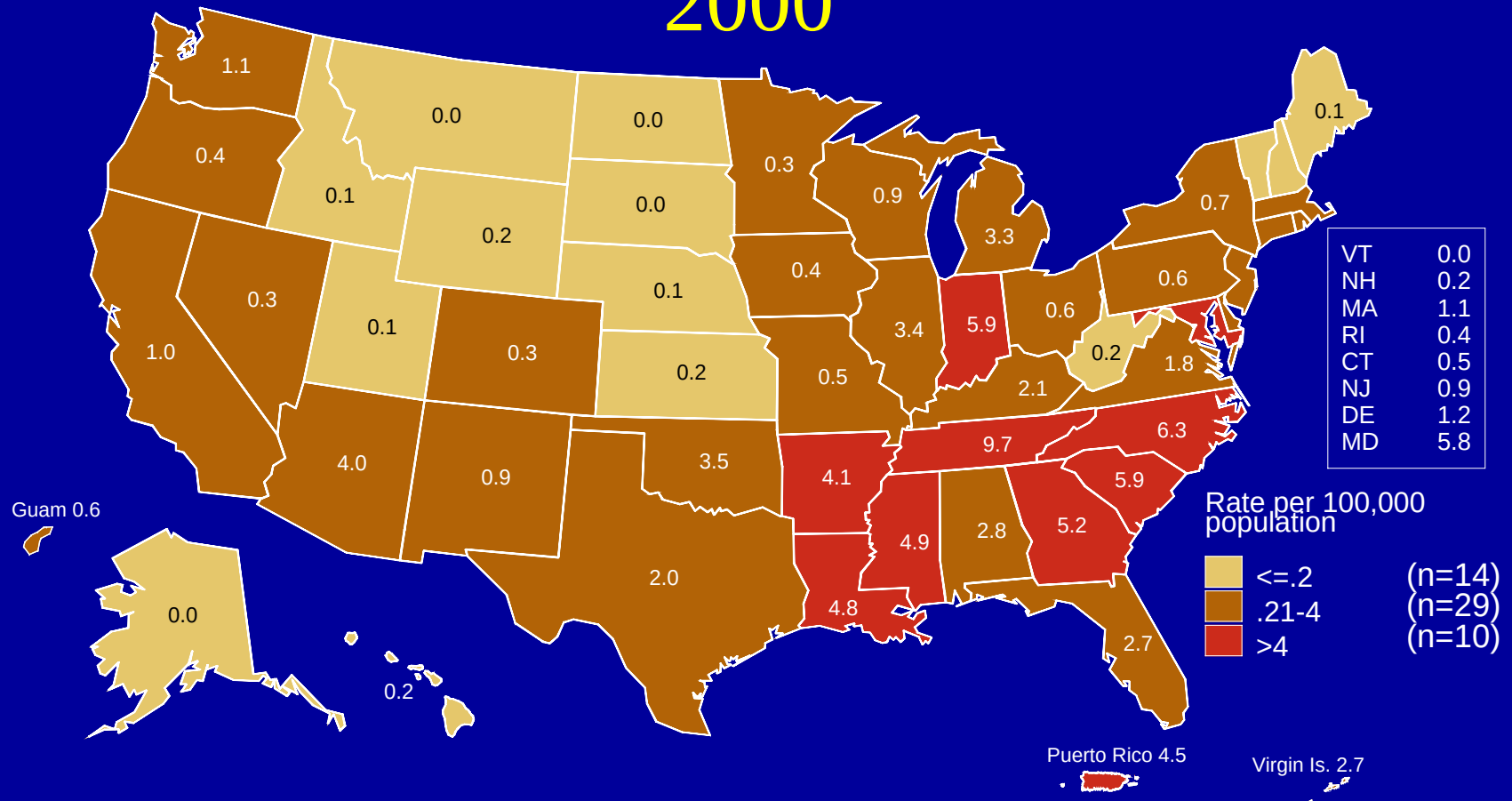
Increased Transmission of HIV in the Presence of other STDs

- Being infected with a STD may make it 2 to 23 times easier to transmit HIV, depending on the specific STD
- Identifying those with both HIV and other STDs and then treating their STDs, may be able to reduce new HIV infections by 23%
- Detection and treatment of STDs is an important HIV prevention strategy

Syphilis Reported cases by stage of illness: United States, 1941–2000



Primary and secondary syphilis Rates by state: United States and outlying areas, 2000



Note: The total rate of primary and secondary syphilis for the United States and outlying areas (including Guam, Puerto Rico and Virgin Islands) was 2.2 per 100,000 population. The Healthy People year 2010 objective is 0.2 per 100,000 population.

Epidemiologic Vulnerability of Syphilis

- No animal reservoir
- Long incubation period
- Limited infectiousness
- Low cost and widely available diagnostic tests
- Single dose therapy
- No antimicrobial resistance

Syphilis Elimination: Public Health Importance

- Important, measurable health outcomes
- Substantial cost savings
  - Annual cost savings of ~1 billion
- Supports multiple public health goals
  - Reduction of racial disparities
  - Infectious disease control, including HIV prevention
  - Bio-terrorism preparedness
  - Reproductive health and infant health
  - Identifies opportunities to improve public health infrastructure
- Focus for critical collaboration between communities & health departments
- Addresses unfinished history & broken trust

Key Steps Necessary to Eliminate Syphilis

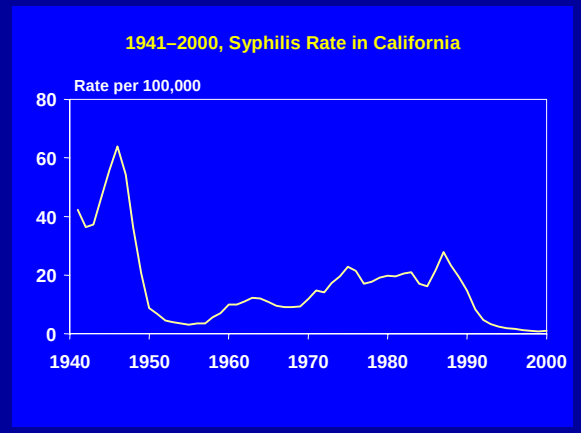
- Improve surveillance capacity and use CD models
- Develop regional and local rapid outbreak response teams
- Design health care infrastructure for testing, treatment and prevention of at-risk persons, especially sexual and social networks
- Create partnerships and linkages with organizations serving at-risk populations

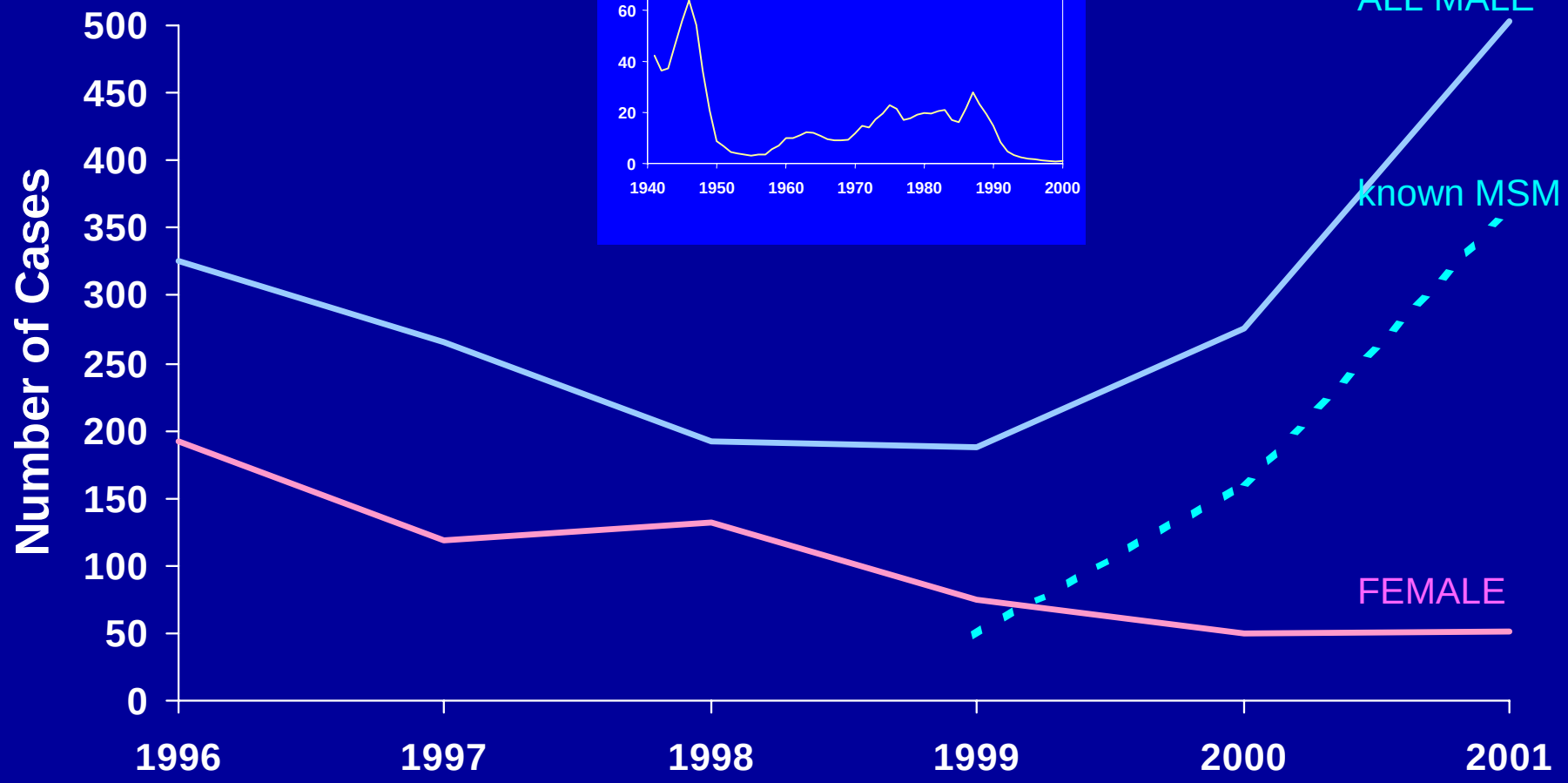
Progress Toward the Elimination of Syphilis from California

Morbidity	1998	1999	2000	2001
P&S Cases	325	284	327	534
Reported P&S Syphilis Rate (per 100,000)	0.99	0.85	0.96	1.54
% of syphilis-free health jurisdictions	60.7%	57.4%	57.4%	52.5%
# of counties accounting for at least 75% of cases	7	7	5	5
African-American:White rate ratio	13:1	9:1	4:1	3:1
Male:Female rate ratio	1.5:1	3:1	5:1	9:1
%MSM[1]	n/a	25.4%	56.3%	74.7%

[1] Among those with known gender of sex partners

Primary & Secondary Syphilis Rates by Gender, California, 1996–2001*

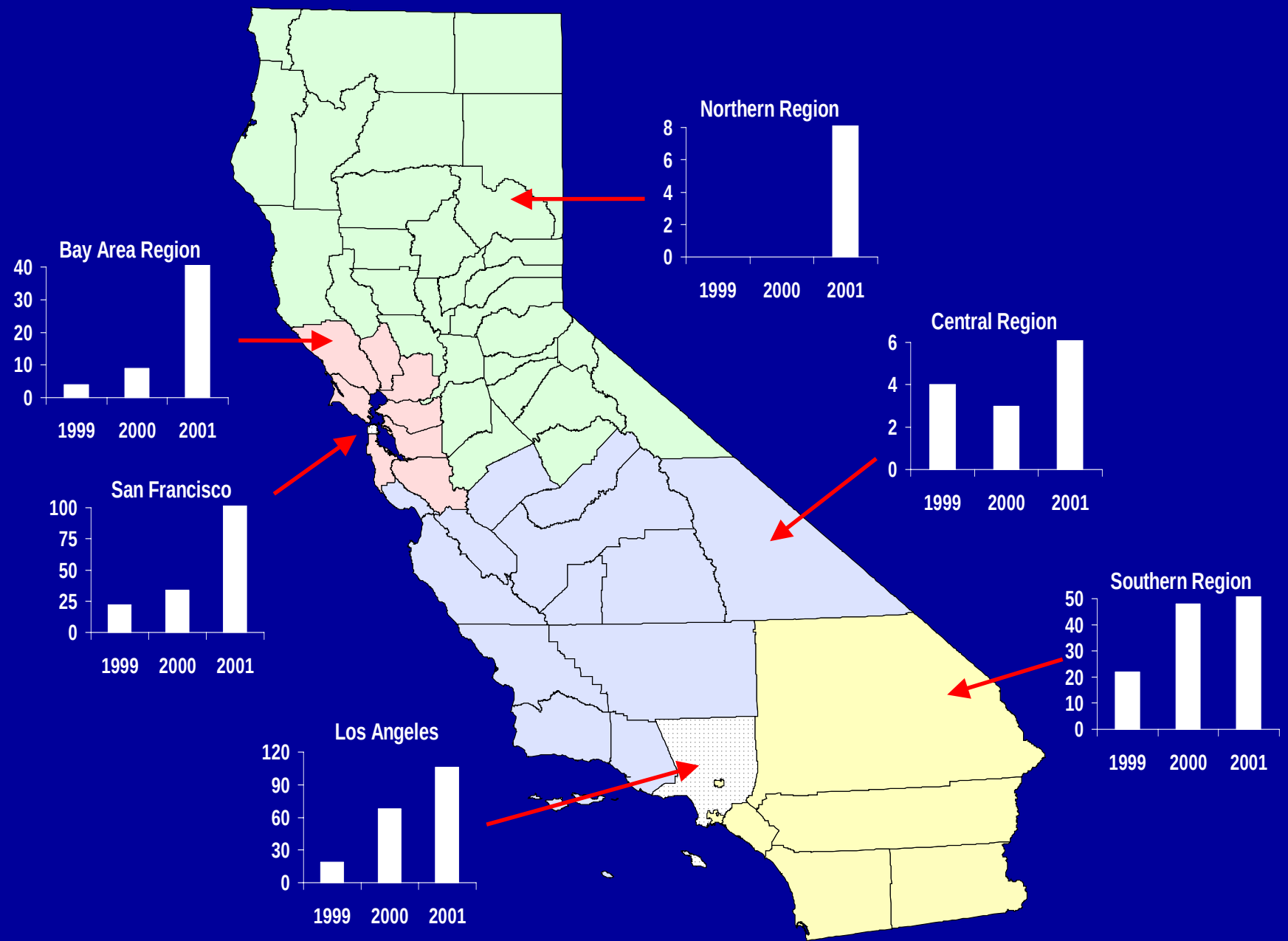


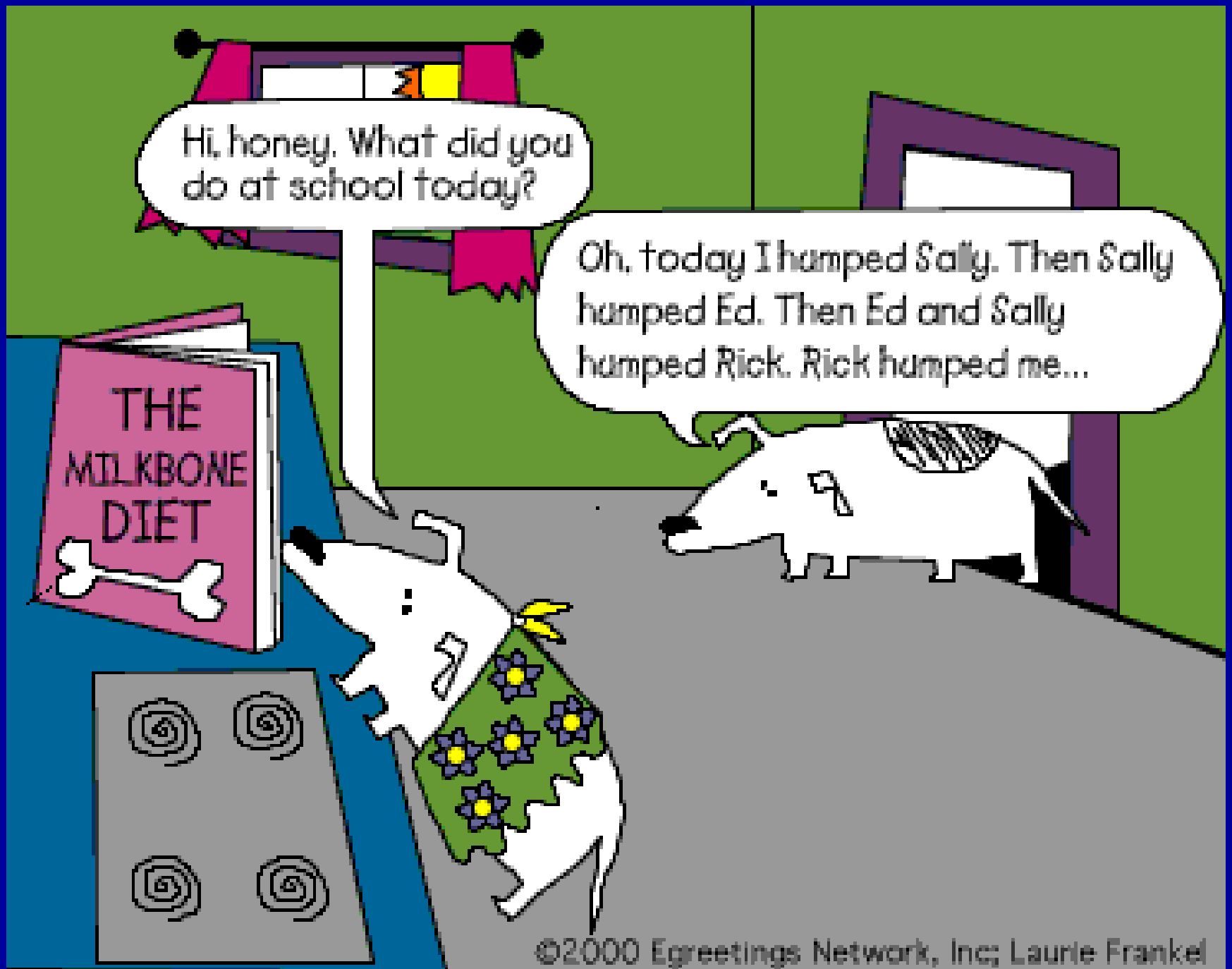


* 2001 numbers are incomplete

Source: STD Control Branch, DCDC, CA DHS - Provisional 2/2002

Number of MSM P&S Syphilis Cases by Region and Year 1999-2001




Hi, honey. What did you do at school today?
Oh, today I humped Sally. Then Sally humped Ed. Then Ed and Sally humped Rick. Rick humped me...
THE MILKBONE DIET
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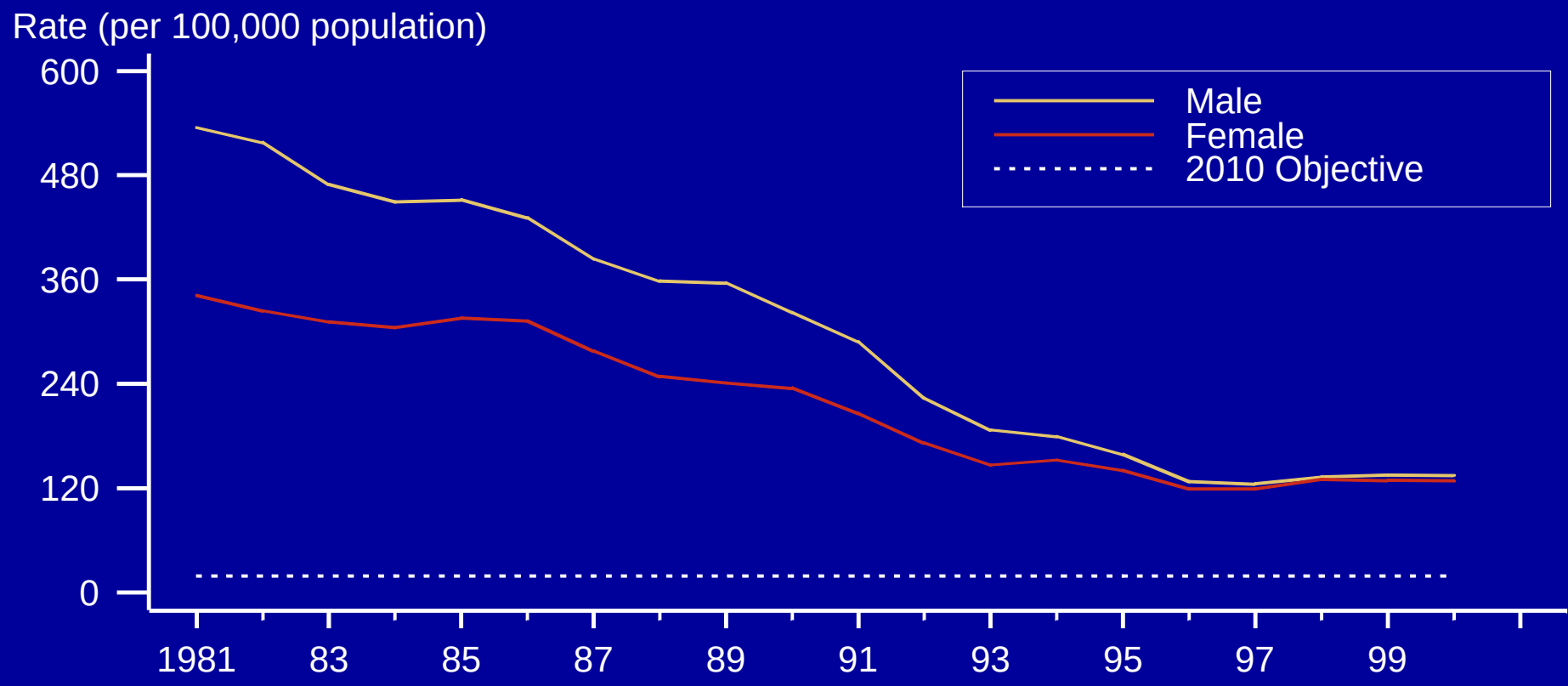
Characteristics of MSM P&S Syphilis Cases, California 1999-2000

	1999	2000	2001
MSM/Total (%MSM)[1]	71/284 (25.0%)	162/327 (49.5%)	328/534 (61.4%)
Secondary	32 (65.3%)	121 (74.7%)	228 (69.5%)
Median age (IQR)	34 (30-42)	35.5 (31-41)	36 (30-42)
Diagnosed at STD clinic	9 (18.4%)	34 (21.0%)	83 (25.3%)
Anonymous sex partners (past 3 months)	10 (20.4%)	86 (53.1%)	197 (60.1%)
Self-reported HIV+	12 (24.5%)	73 (45.1%)	183 (55.8%)
Methamphetamine use	1 (2.0%)	18 (11.1%)	35 (10.7%)
Meet partners at bathhouse	2 (4.1%)	34 (21.0%)	60 (18.3%)
Meet partners over internet	0	15 (9.2%)	52 (15.9%)

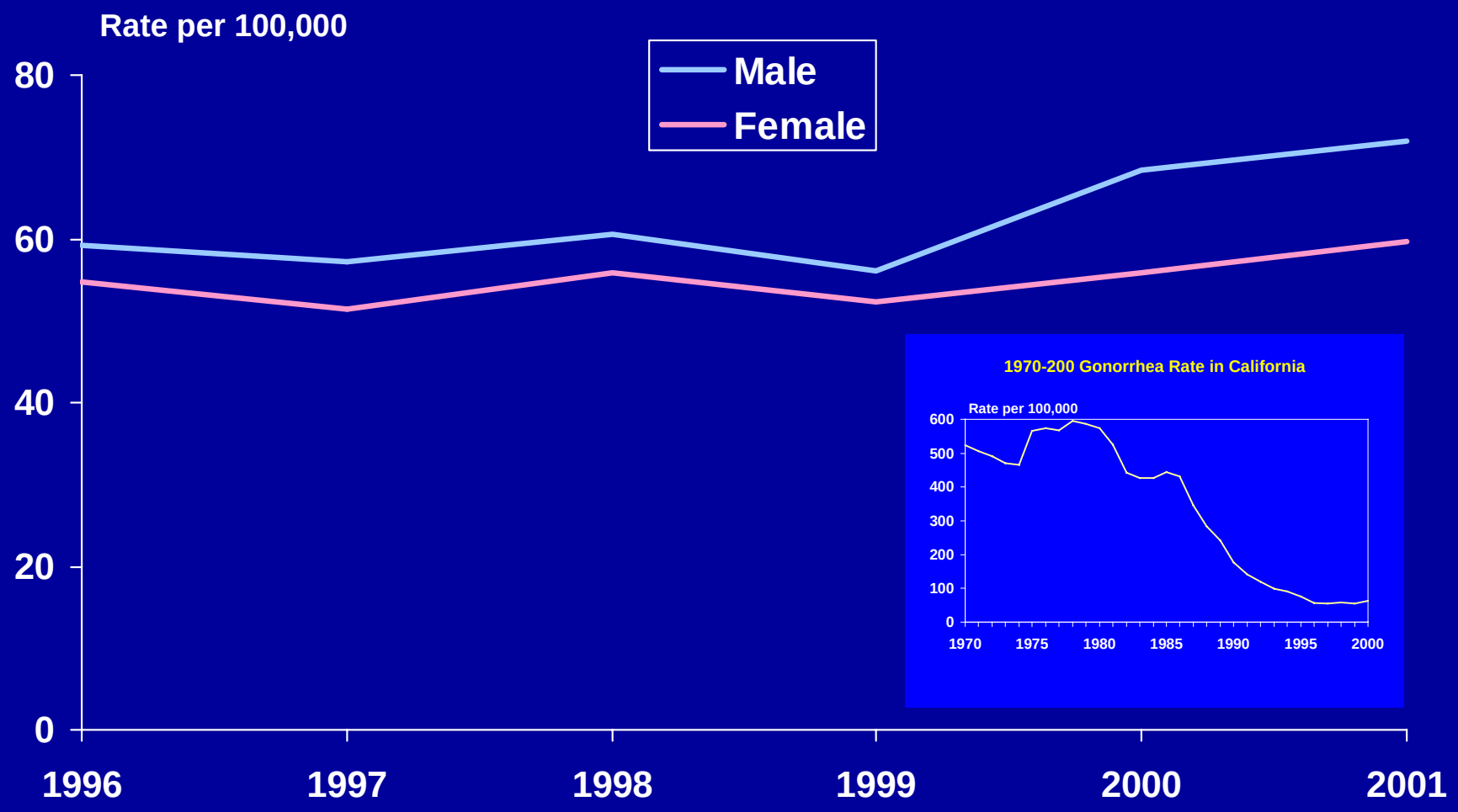
[1] For 1999 count includes San Francisco MSM P&S cases (n=22), characteristics in 1999 exclude SF cases

Gonorrhea Rates by gender: United States, 1981–2000 and the Healthy People year 2010 objective



Gonorrhea Rates by Gender, California, 1996–2001

- Gonorrhea rates declined sharply last 30 years
- Rates in Males and Females increased in 2000 and 2001



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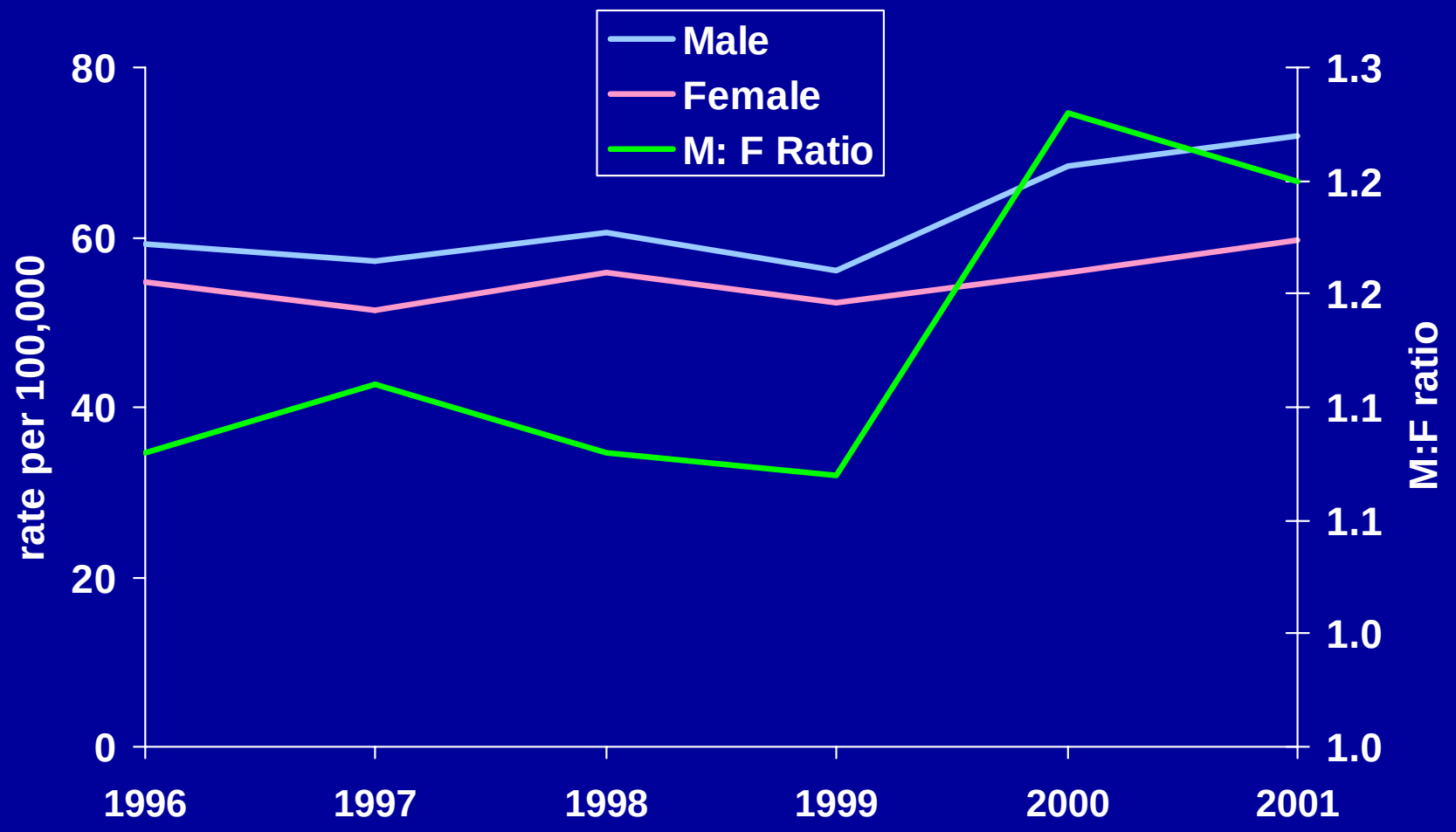
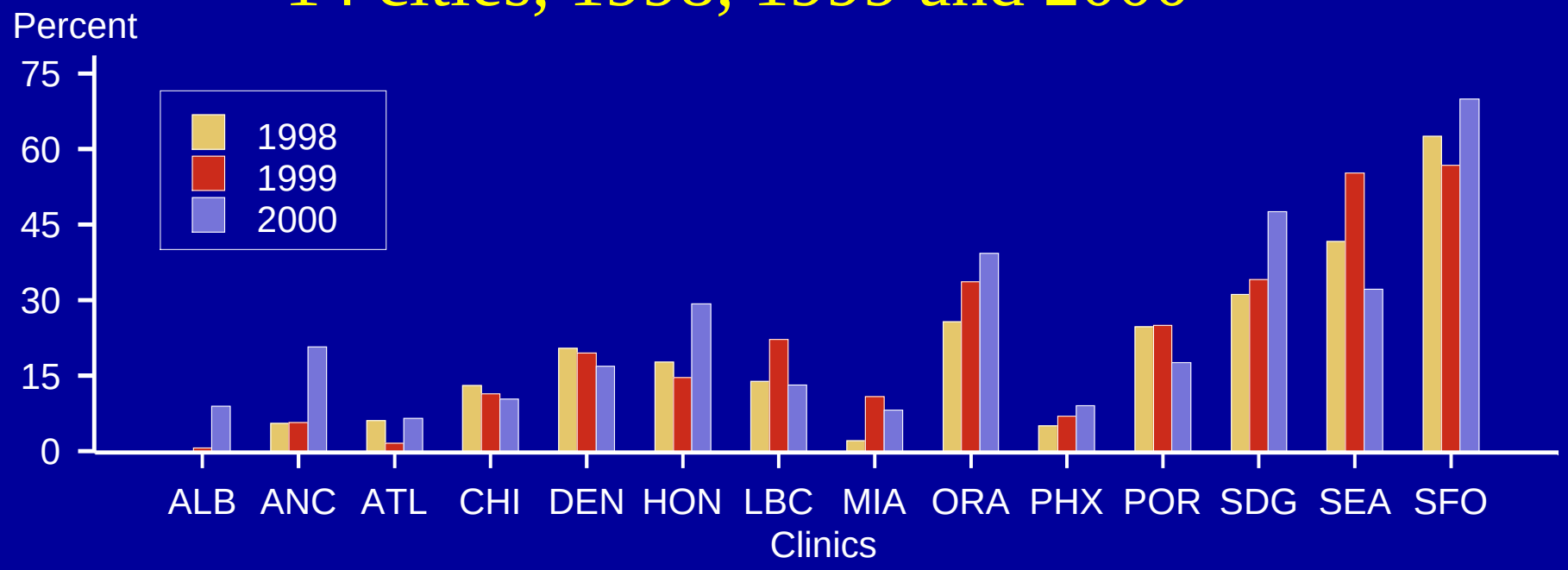


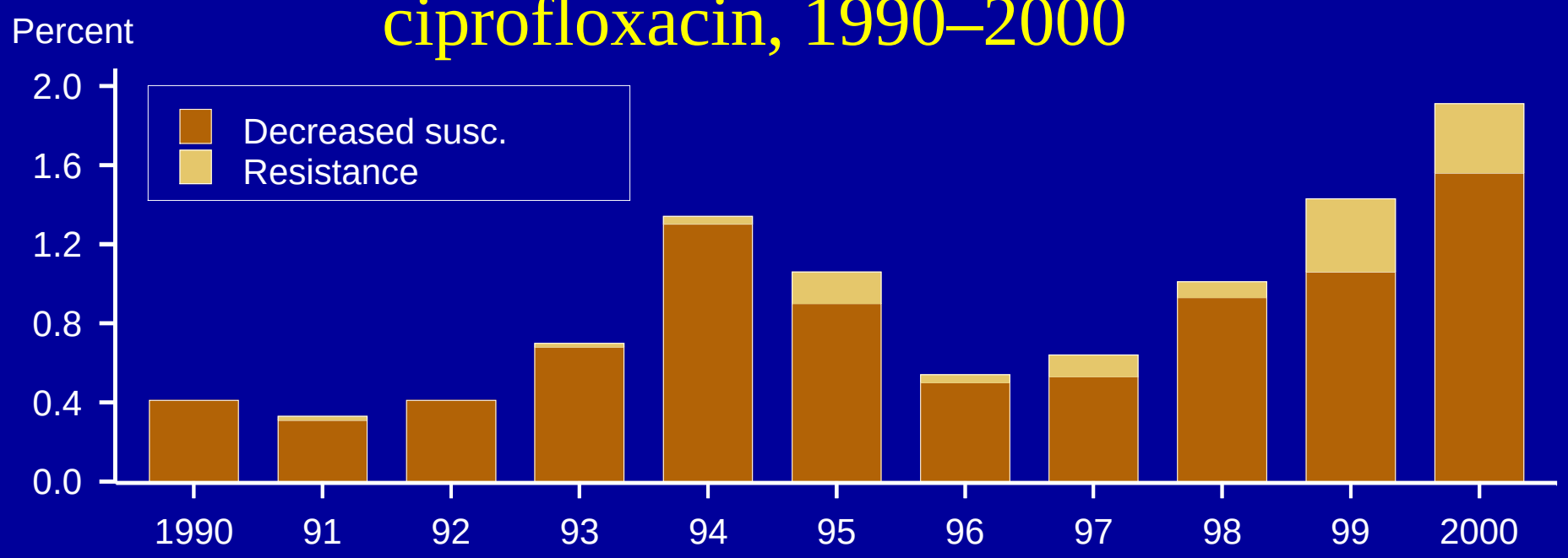
Gonococcal Isolate Surveillance Project (GISP) - Location of participating clinics and regional laboratories: United States, 1998

Gonococcal Isolate Surveillance Project (GISP) Percent of *Neisseria gonorrhoeae* isolates obtained from MSM for STD clinics in 14 cities, 1998, 1999 and 2000



Note: In 2000, these 14 clinics reported 91.7% (633/690) of GISP gonorrhea cases in men who have sex with men (MSM). In 1998 ALB reported 0.0% MSM. Clinics include: ALB=Albuquerque, NM; ANC=Anchorage, AK; ATL=Atlanta, GA; CHI=Chicago, IL; DEN=Denver, CO; HON=Honolulu, HI; LBC=Long Beach, CA; MIA=Miami, FL; ORA=Orange County, CA; PHX=Phoenix, AZ; POR=Portland, OR; SDG=San Diego, CA; SEA=Seattle, WA; and SFO=San Francisco, CA.

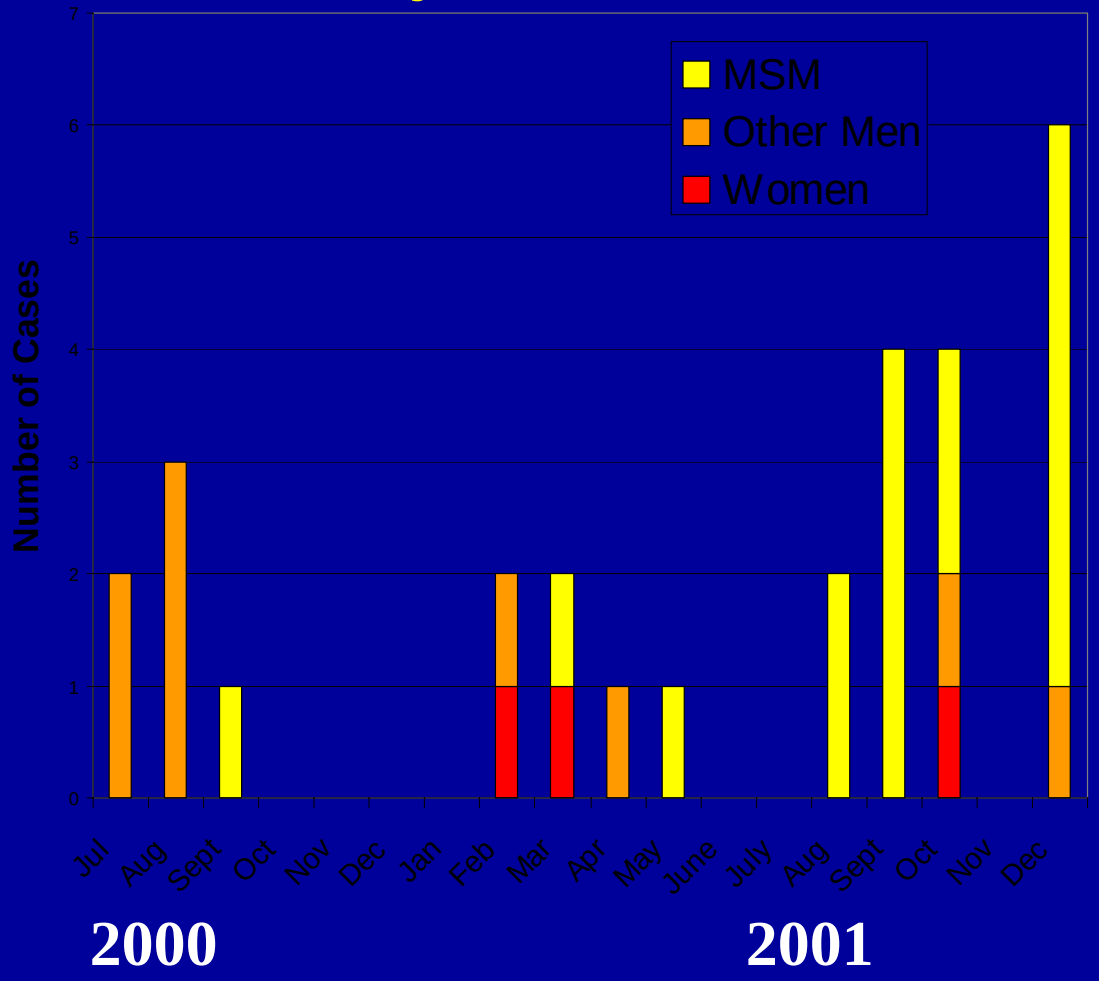
Gonococcal Isolate Surveillance Project (GISP) Percent of *Neisseria gonorrhoeae* isolates with decreased susceptibility or resistance to ciprofloxacin, 1990–2000



Note: Resistant isolates have ciprofloxacin MICs ≥1 µg/mL. Isolates with decreased susceptibility have ciprofloxacin MICs of 0.125 - 0.5 µg/mL. There were sixty-one (61) resistant isolates: one in 1991, one in 1993, two in 1994, eight in 1995, two in 1996, five in 1997, four in 1998, nineteen in 1999, and nineteen in 2000. Susceptibility to ciprofloxacin was first measured in GISP in 1990.

CipR GC in Southern California

Cases by Gender/Sexual Orientation, July 2000 - Dec 2001



- The majority of cases (13 of 16) identified in the last 6 months of 2001 were MSM

Demographics and Risk Factors of CipR GC Cases, 2001 (N=22)

	MSM	Other Men	Women
	N=15	N=4	N=3
Age range	18-43	25-55	22-62
median	30	36	35
Race/Ethnicity			
White	11	1	1
Asian	0	1	2
Black	3	0	0
Hispanic	1	0	0
Unknown	0	2	0
Clinic			
STD	14	2	1
Primary care	1	2	2
Included in GISP	9	2	0
Travel*	0	0	1
Partner Travel*	0	1	2
Antibiotic Use	1	0	0
Multiple Partners **	13	1	0
HIV positive	7	0	0

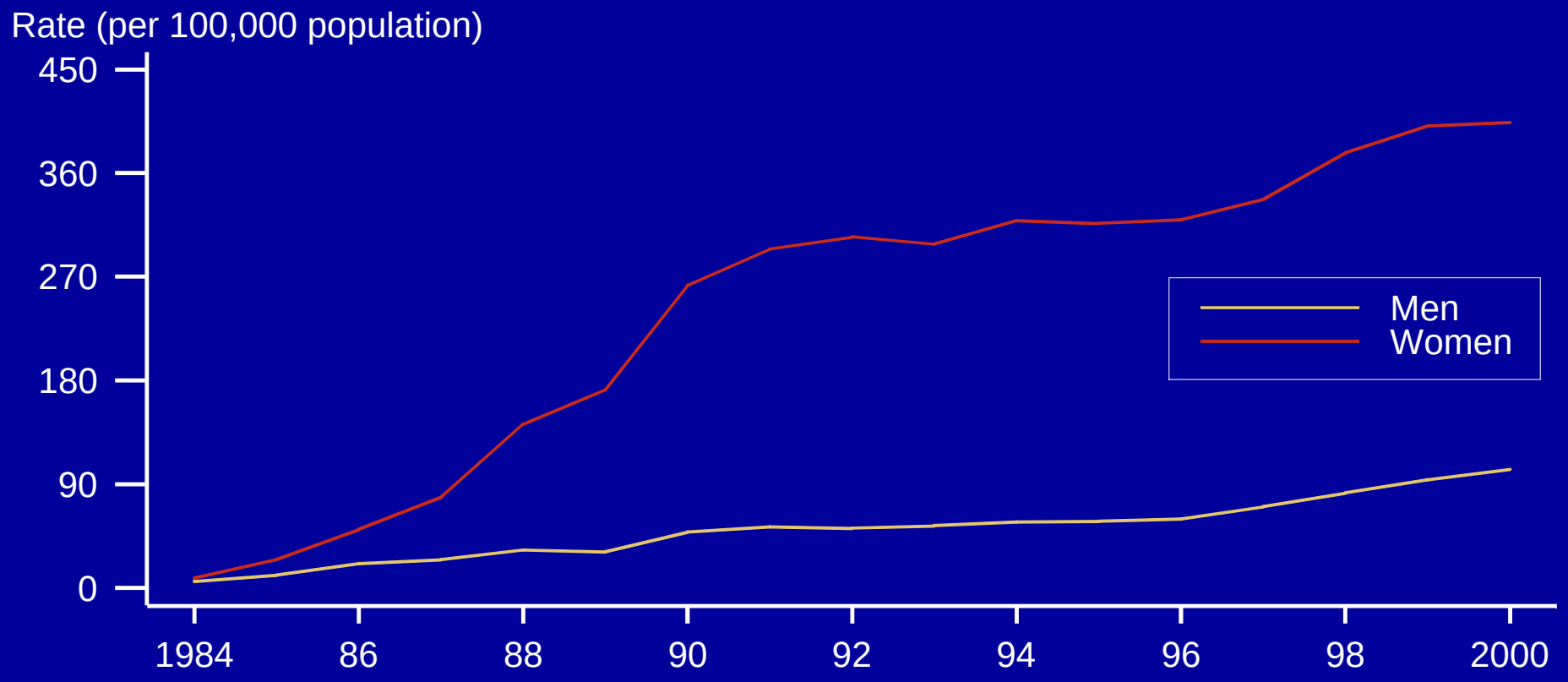
Acyclovir-Resistant Herpes Simplex Virus: Results From A National Surveillance System

- 24 Study Sites in 14 Cities
  - 0.18% (3/1,644) ACV Resistance in HIV-negative patients
  - 5.3% (12/226) ACV resistance in HIV-positive patients
- Factors Associated with Resistance in HIV-negative pts:
  - past oral ACV use
  - current use of topical ACV cream
- Factors Associated with Resistance in HIV-positive pts:
  - past and current oral ACV
  - history of recurrent HSV-2 infection
  - lesions of longer duration
  - low CD4 count

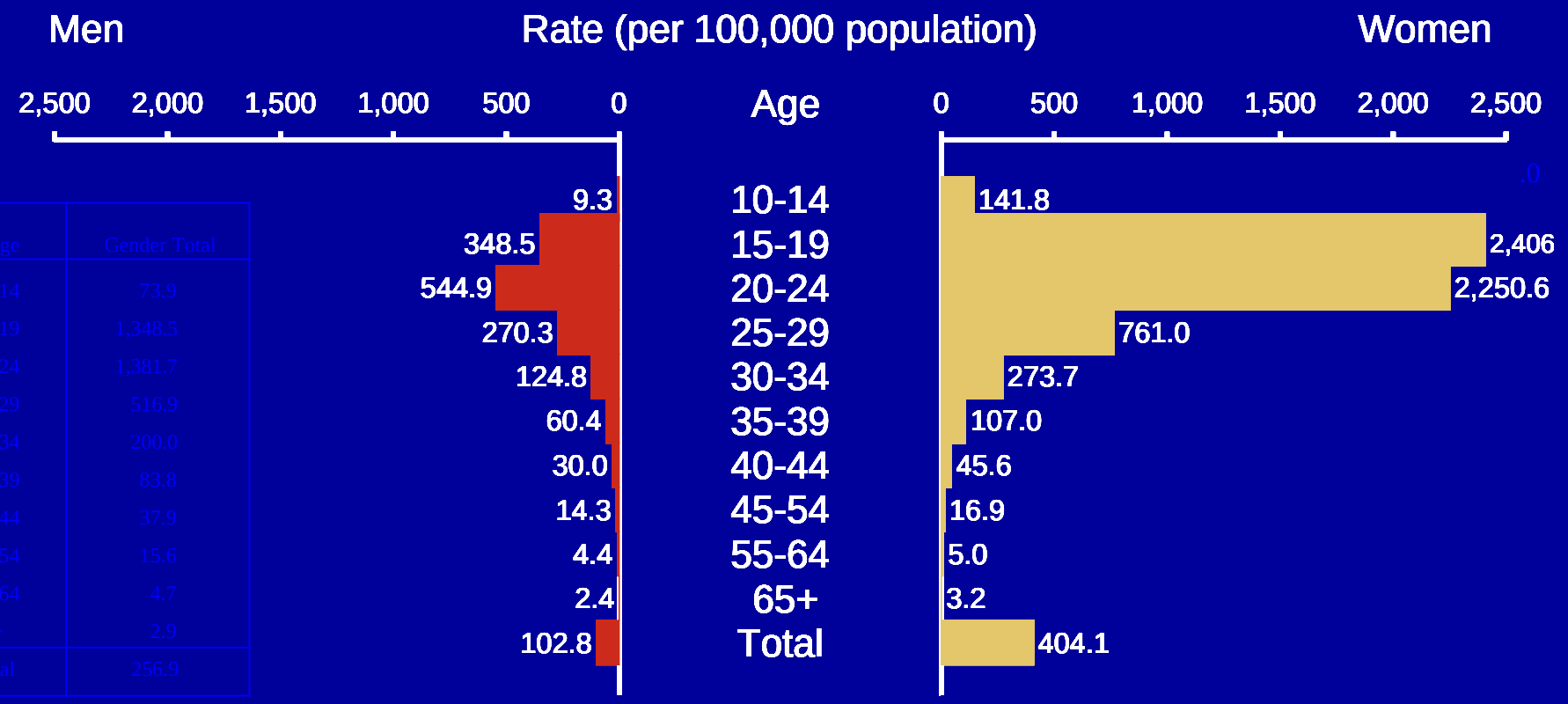
Metronidazole-Resistant Trichomonos vaginalis, CDC case series 1985-1998

	Number of isolates (%)
• Susceptible	17 (8.7%)
• Marginally Resistant (MLC, 50-100 ug/ml)	13 (6.7%)
• Moderately Resistant (MLC, 100-400 ug/ml)	46 (23.6%)
• Highly Resistant (MLC, $\geq$ 400 ug/ml)	119 (61%)

Chlamydia Rates by gender: United States, 1984–2000

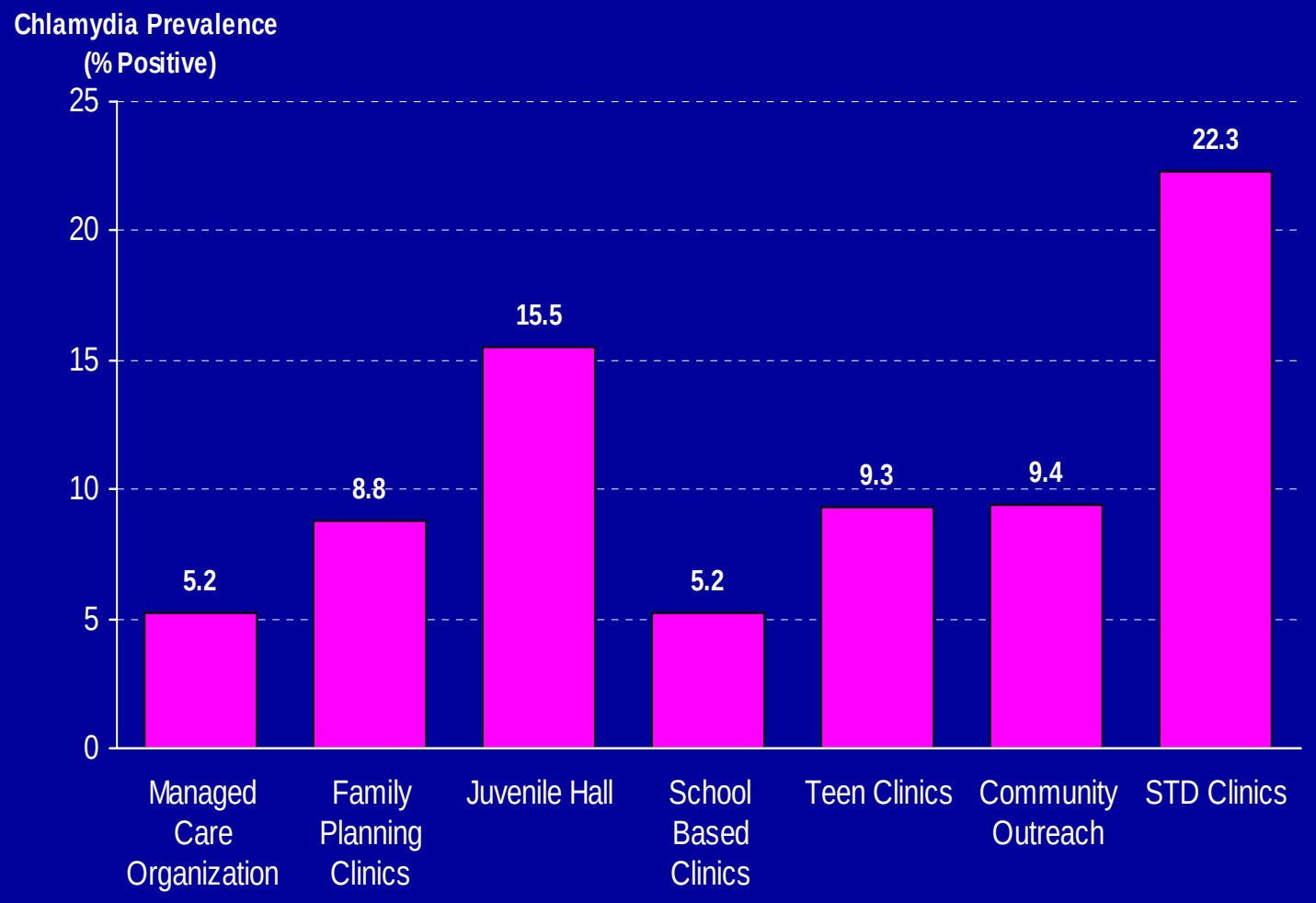


Chlamydia — Age- and gender-specific rates: United States, 2000



Age	Gender Total
10-14	73.9
15-19	1,348.5
20-24	1,381.7
25-29	516.9
30-34	200.0
35-39	83.8
40-44	37.9
45-54	15.6
55-64	4.7
65+	2.9
Total	256.9

Prevalence of Chlamydia Infections in 15–19 Year Old Adolescent Girls by Health Care Setting, California, 2000



Source: California Department of Health Services, STD Control Branch; Los Angeles Infertility Prevention Project; and San Francisco Infertility Prevention Project

California Chlamydia Action Coalition Members: A State-Wide Public/Private Partnership

- State and local health departments
- Managed Care Organizations
- Community Based Organizations
- Private providers and professional societies
- Family Planning, school-based, and correctional programs
- Women's Health Organizations
- Laboratories and University researchers
- Diagnostic and pharmaceutical companies
- Policymakers and the public
- California Health Care Foundation

Chlamydia Action Coalition Goals

- Increase access to and use of high-quality screening and clinical services for chlamydia
- Increase partner evaluation, treatment and counseling
- Promote awareness of the chlamydia epidemic, prevention strategies and the costs of the disease and its complications among providers, policymakers and the public
- Enhance health information systems to monitor, evaluate and improve chlamydia screening and other intervention efforts

Chlamydia Action Coalition Efforts (**www.ucsf.edu/castd**)

- Chlamydia Clinical Practice Guidelines
- Tool box to assist in implementation
  - More detailed information on diagnostic tests, sexual history taking, public health laws, HEDIS specifications, cost-effectiveness model, patient and provider information sheets, CME home study module
- Interventions to improve screening
  - MMCD QI Initiative
  - Web-based interactive provider training
  - Provider level evaluation

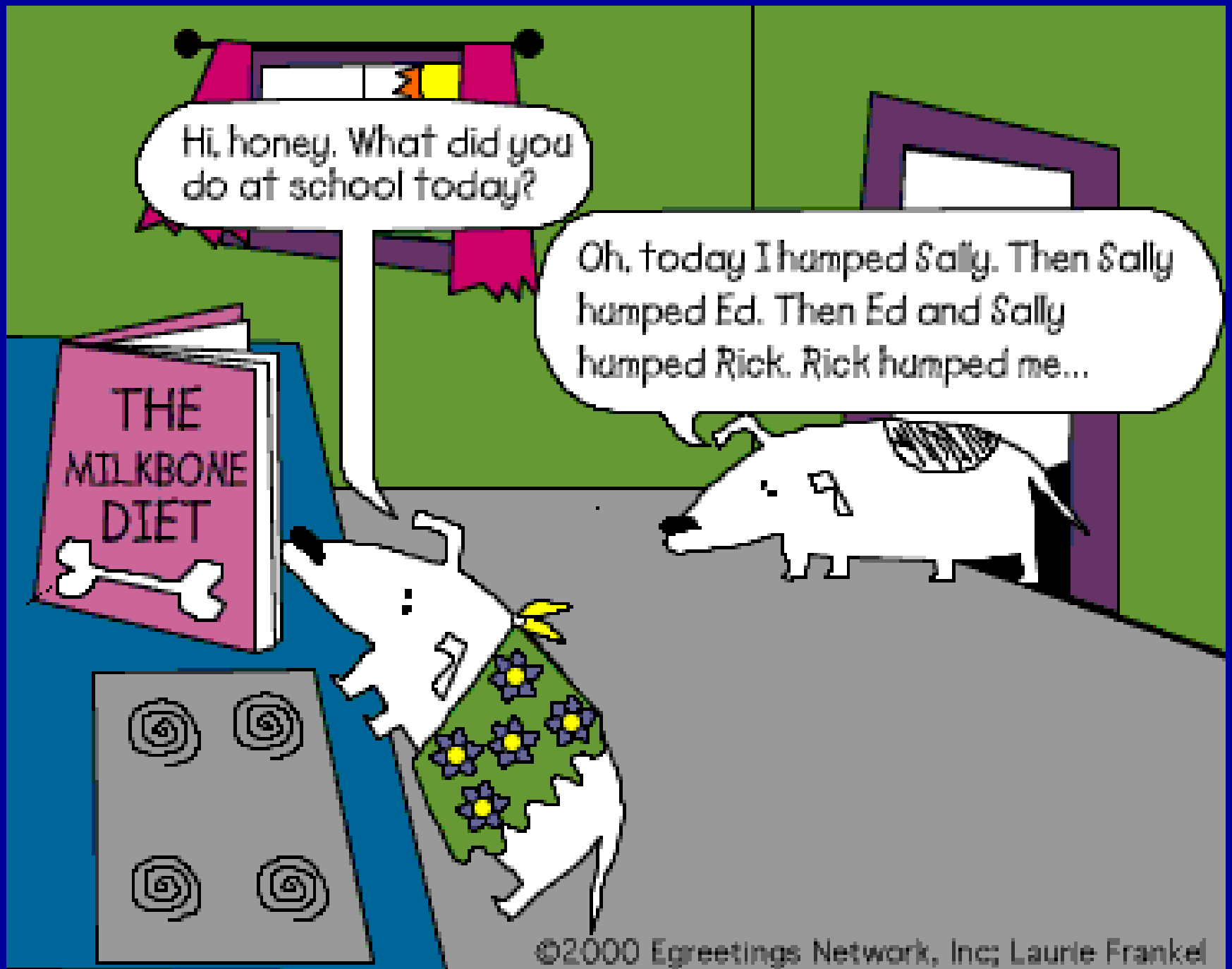
Impact of Nucleic Acid Amplification Methods

- Highest sensitivity
  - Able to detect 10-30% more infections
  - Less dependent on specimen collection and handling
- Noninvasive
  - Urine and self-collected vaginal swabs
    - Patient acceptability
- Non-clinical settings
  - Pelvic and genital exams not necessary
    - Clinic intake areas
    - Community based organizations
    - Home testing

0.0004560123
Got
piss?

Chlamydia HEDIS Data Warehouse

- Centralized Data Warehouse with Electronic Transmission of Chlamydia Screening Data
  - Collection of HEDIS numerator data
  - Prevalence Monitoring
- Coordinate with ELR of communicable diseases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Patient Delivered Partner Therapy Legislation in CA (Ortiz bill SB 648)

- Enacted January 1, 2001
- Amendment to the Business and Professions and Health and Safety Codes
- Sets forth exceptions to the Medical Practice Act and is does not constitute unprofessional conduct
- "Notwithstanding any other provision of law, a physician, nurse practitioner, certified nurse-midwife, and physician assistant who diagnoses a sexually transmitted chlamydia infection may prescribe to that patient's sexual partner or partners without examination of that patient's partner or partners"

Future Directions for STD Prevention

- Enhanced surveillance systems needed to monitor risk factors and antimicrobial resistance
- STD and HIV integrated approaches needed
- Public and private sector partnerships needed
- Coordination of efforts with communicable disease systems