

HIV Sentinel Surveillance (HSS) 2003: Results, Trends, and Estimates

Surveillance Unit

**National Center for HIV/AIDS,
Dermatology and STDS (NCHADS)**

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Outline

1. Objectives
2. Methodology
3. Results
4. Conclusions
5. Program implications
6. Recommendations

Objectives

- 1. To estimate the prevalence of HIV infection in selected sentinel population groups, by province in 2003;**
- 2. To estimate the number of persons living with HIV, AIDS cases, and AIDS deaths over time;**
- 3. To monitor trends in Cambodia's HIV/AIDS epidemic; and**
- 4. To inform prevention planning and care efforts, and to provide data needed to evaluate their impact.**

Methods

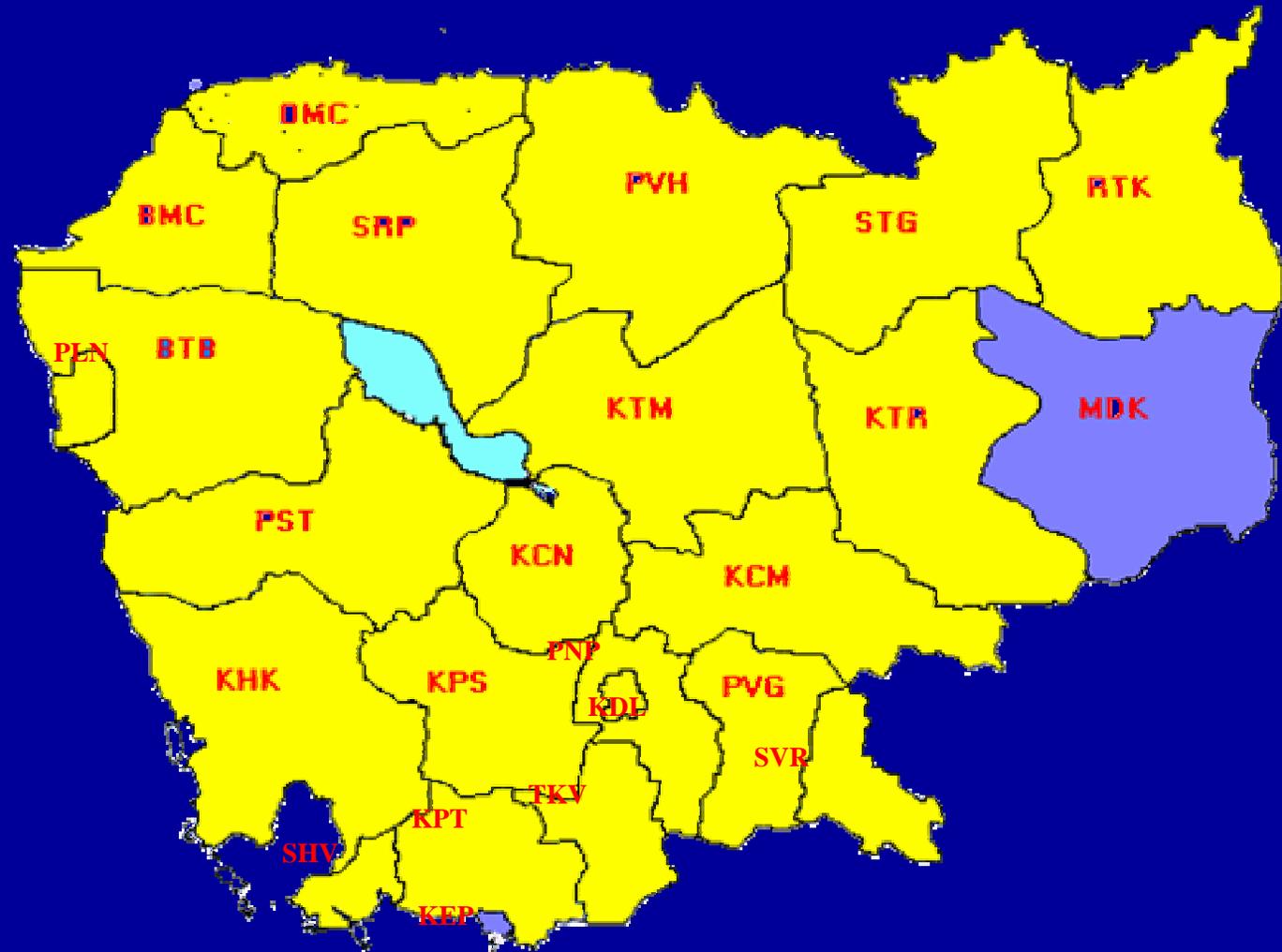
Provinces and Sentinel Populations Covered by Survey Year

	HSS 1995	HSS 1996	HSS 1997	HSS 1998	HSS 1999	HSS 2000	HSS 2002	HSS 2003
No. of Provinces	9	18	22	19	20	21	20	22
DSWs	X	X	X	X	X	X	X	X
IDSWs	X	-	-	X	X	X	X	X
POLICE	X	X	X	X	X	X	X	X
ANC	X	X	X	-	X	X	X	X

National Surveillance Implementation

- National Center for HIV/AIDS, Dermatology and STDs (NCHADS)
- Provincial AIDS Programs
- National Institute of Public Health (NIPH)
- Collaborating partners:
 - US CDC Global AIDS Program
 - Family Health International / USAID
 - World Health Organization
 - University of California at Los Angeles (UCLA)
 - University of New South Wales (UNSW)

Sentinel Sites (22 of 24 Provinces)



HIV Sentinel Groups 2003

- 1. Direct female sex workers (DFSW)**
- 2. Indirect female sex workers (IDFSW)**
- 3. Male police**
- 4. Pregnant women attending ANC clinics (ANC)**

HSS 2003 Sampling Scheme (1)

- DFSW and IDFSW
 - In provinces with less than the required sample size (i.e., ≤ 150), sampling was “take-all”
 - In provinces with sufficient numbers (> 150):
 - DFSW samples were randomly selected from brothels
 - IDFSW samples were randomly selected from beer companies or karaoke establishments
- Police were randomly selected from units, offices, and departments

HSS 2003 Sampling Scheme (2)

- ANC
 - Separate samples of 300 women were selected from provincial capitals (PC) and remaining districts (RD)
 - Pregnant women were selected consecutively from the ANC clinics or health centers until the required sample size was reached
 - Duration of data collection was limited to three months

Comparison of Samples Collected in HSS 2000, 2002 and 2003

	2000	2002	2003*
DFSW	2,180	2,110	2,411
IDFSW	1,799	1,232	1,633
Police	4,711	4,379	5,796
ANC	6,562	9,168	10,867
Total	17,991	19,247	20,707

**Data collected from August through November 2003*

Modifications for 2003

- Used two HIV rapid tests
- Decentralized HIV testing to the provincial level
- Conducted quality assurance testing
- Added Odor Meanchey province
- Dropped TB patients

HIV Testing Procedure

- Obtained oral informed consent
- Collected 5 ml whole blood
- Conducted voluntary anonymous testing
- Performed testing at the provincial level
- Followed WHO testing strategies I and II for HIV sentinel surveillance
- Prepared dried blood spots (DBS) for quality assurance testing

HIV Testing Algorithm*

≥10% HIV prevalence

Direct and indirect female sex workers

Determine

+

Positive

-

Negative

<10% HIV prevalence

Policemen and ANC women

Determine

+

Stat-Pak

+

Positive

-

Negative

-

Negative

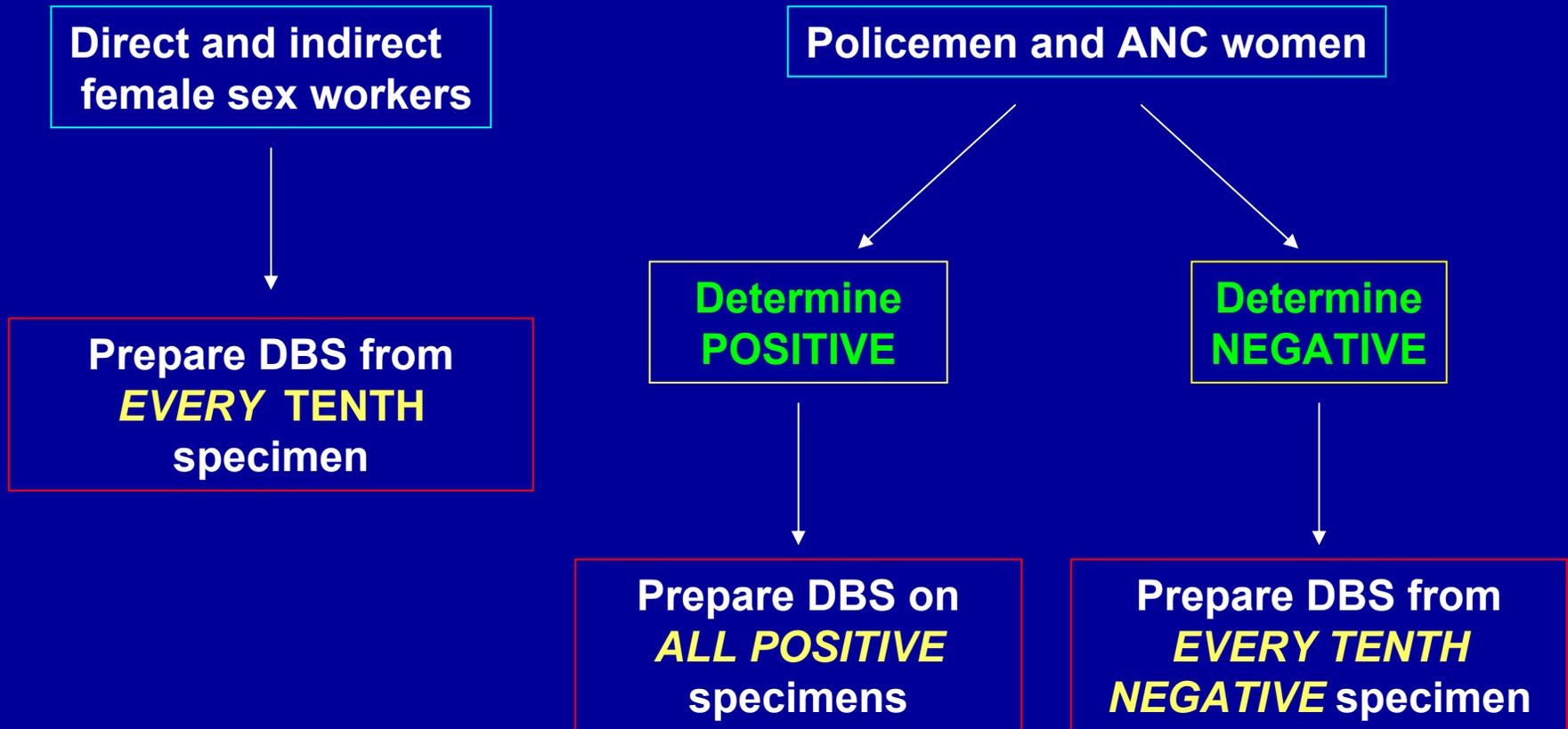
Se=100.0%
Sp=99.8%

Se=99.5%
Sp=100.0%

*Based on UNAIDS/WHO HIV testing strategy for sentinel surveillance

Quality Assurance Sampling Strategy

Algorithm for DBS Preparation



Quality Control

- **QC was performed on the samples from 1999-2003**
- **False positive and false negative were identified among each sentinel group**
- **Prevalence was adjusted accordingly**

Data analysis

- **QA-adjusted province- and group-specific HIV prevalence**
- **Weighted police and ANC data by population size.**
- **Self-weighted DFSW and IDFSW**
- **Smoothed police and ANC data by using EPP to remove sampling variation**
- **QA-adjusted group-specific HIV prevalence for 1997-2002 based on HIV incidence study retesting**
- **Constructed HIV prevalence trends for each group**
- **Estimated national HIV prevalence percent and number of persons living with HIV in 2003**
- **Estimated number of new HIV infections, HIV infected pregnant women, AIDS cases and AIDS deaths, by year.**

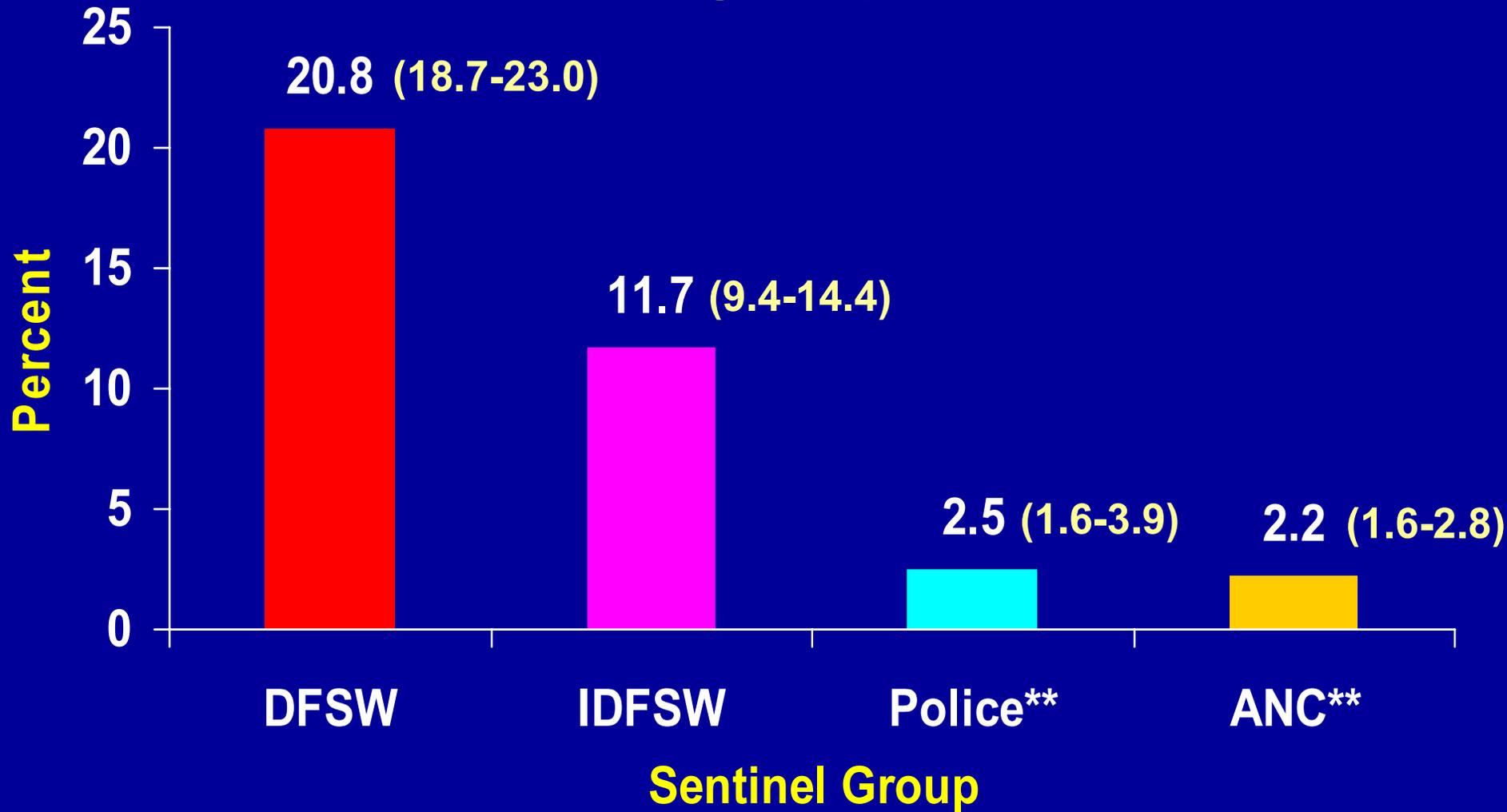
Results

Percent refusal by HSS sentinel group and year

	<i>2000</i>	<i>2002</i>	<i>2003</i>
	National aggregate (range across provinces)	National aggregate (range across provinces)	National aggregate (range across provinces)
DFSW	4.9 (0-18.0)	4.8 (0-16.2)	3.4 (0-22)
IDFSW	11.9 (0-32.3)	11.6 (0-37.7)	7.6 (0-40*)
Police	8.6 (0-58.0)	14.6 (0-57.8)	4.5 (0-27.1)
ANC	N/A	1.9 (0-18.5)	1.9 (0-17.3)

* Stung Treng: 4 out of 10 IDFSW refuse

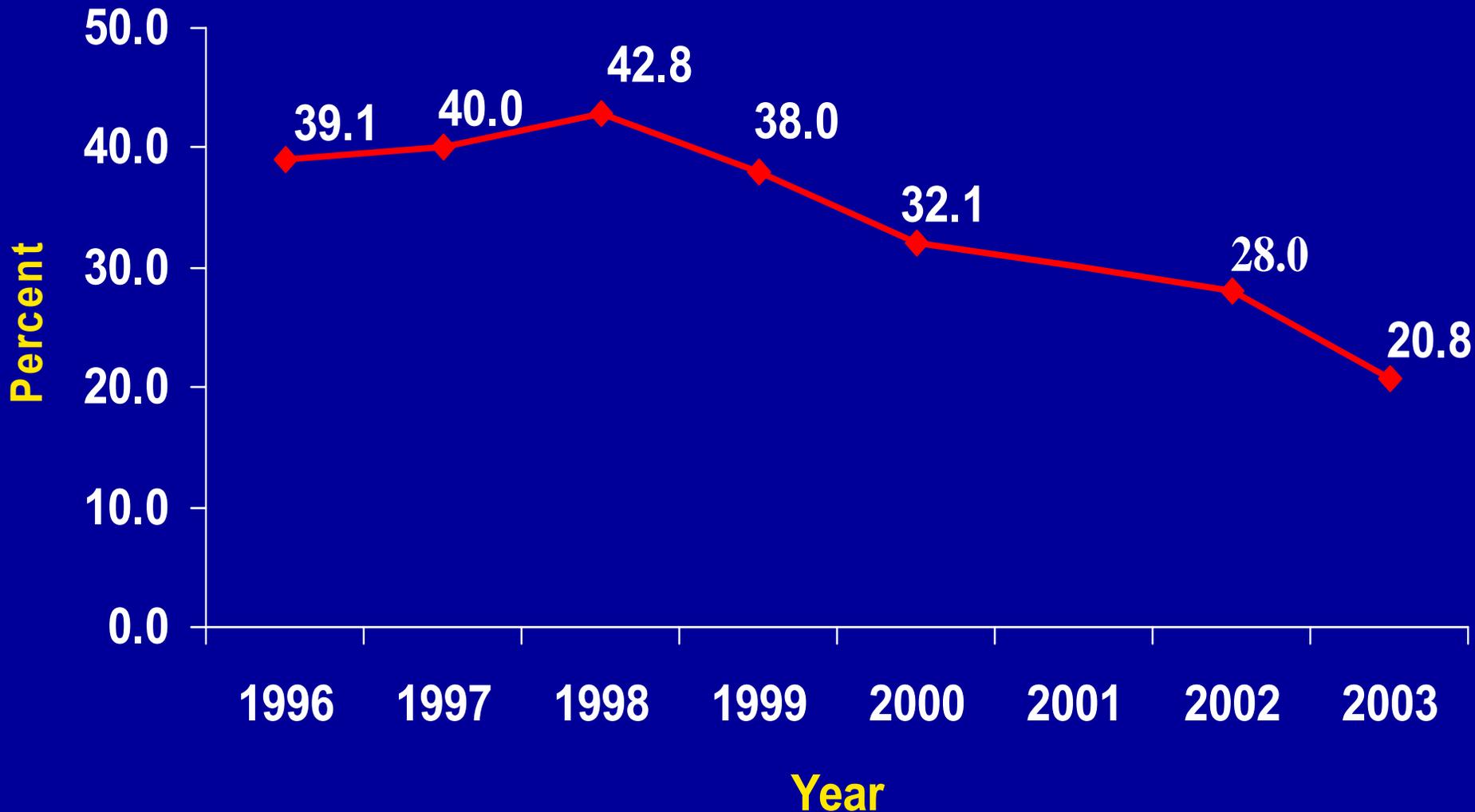
Adjusted HIV prevalence* among sentinel groups in 2003



*Adjusted for results of QA testing; values shown are point estimates and 95% confidence intervals

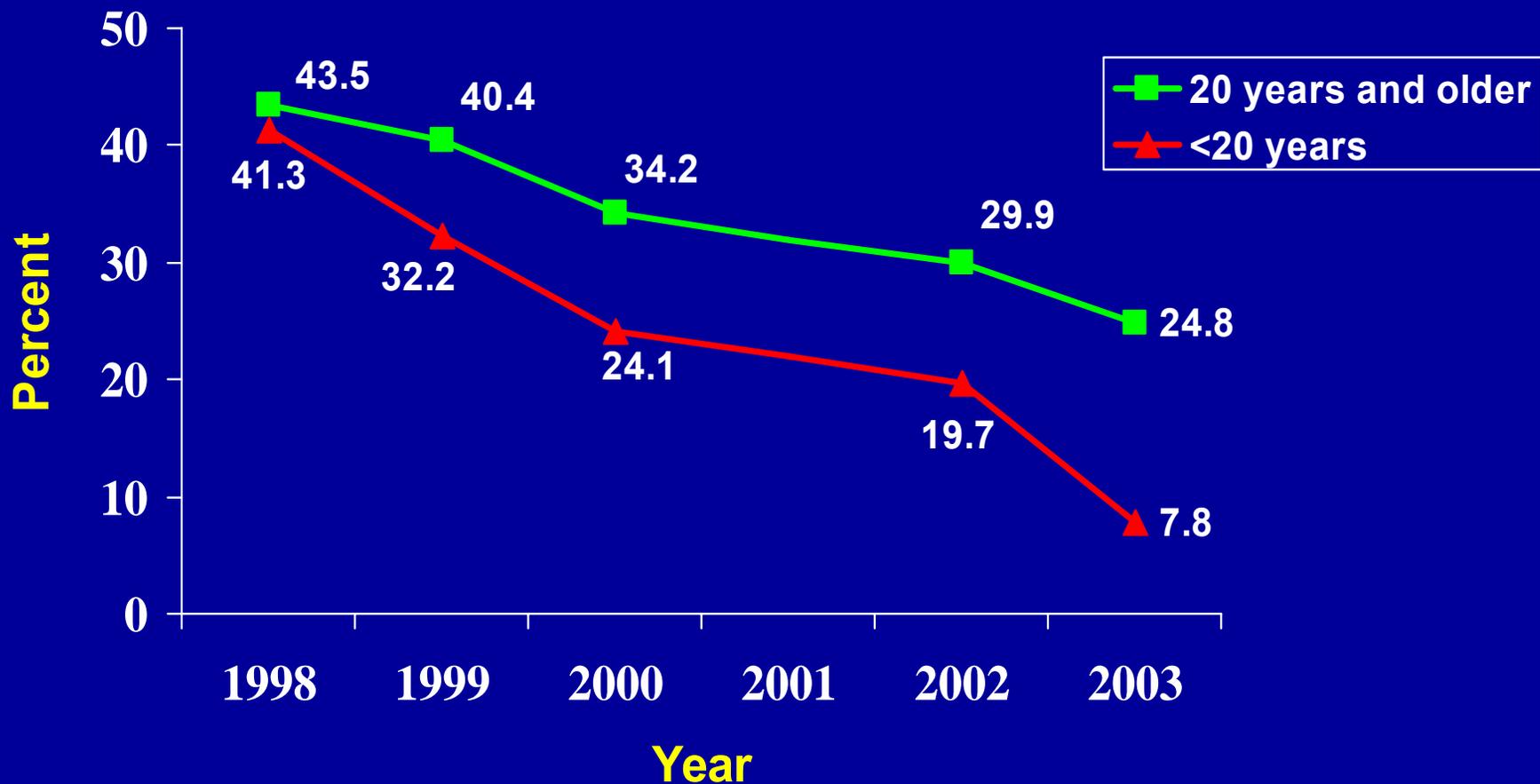
**ANC and police groups weighted by population size

Adjusted HIV prevalence* among DFSW, by year, 1996-2003



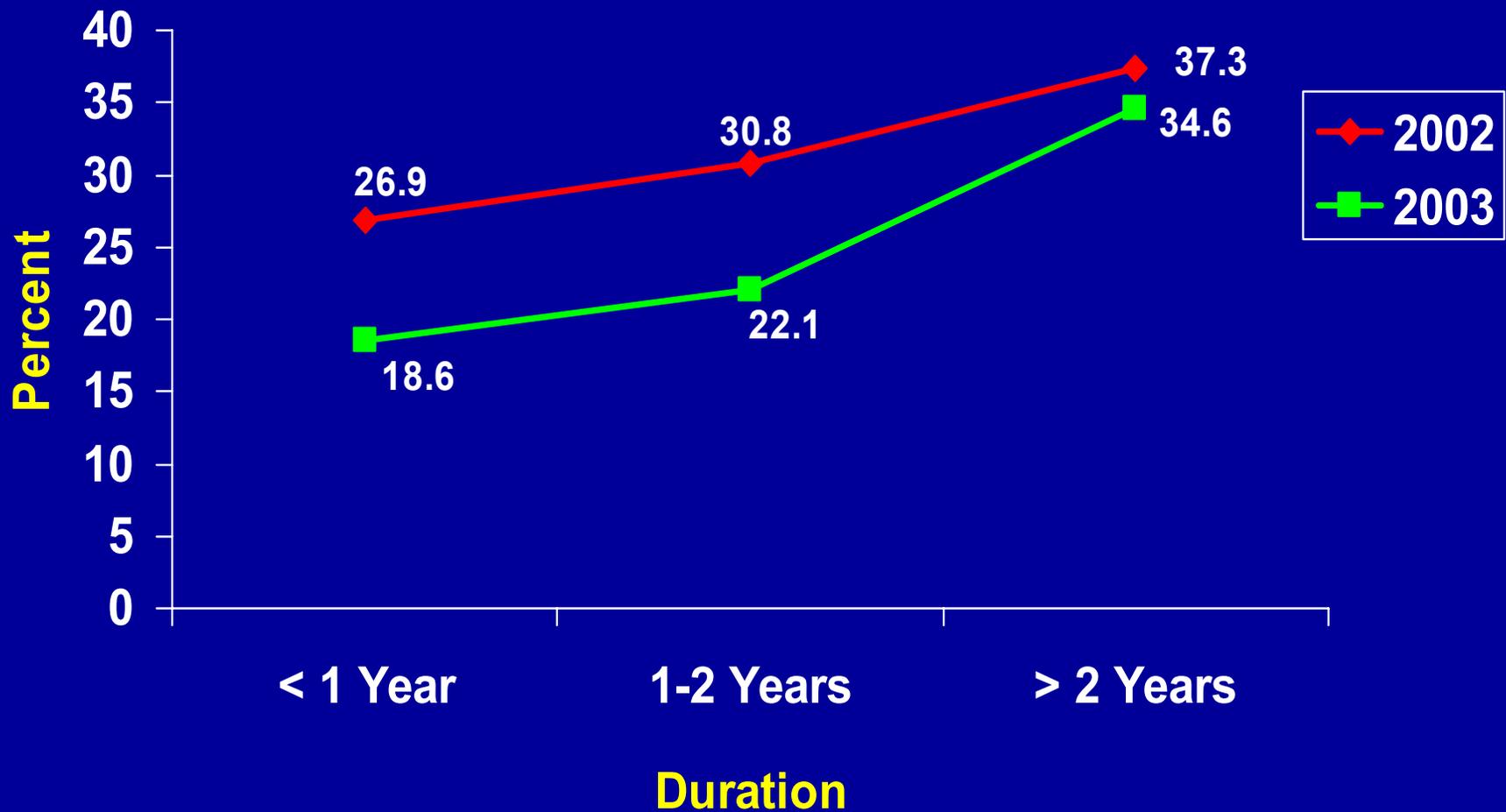
*Adjusted for results of quality assurance testing

Adjusted HIV prevalence* among DFSW, by age group and year, 1998-2003

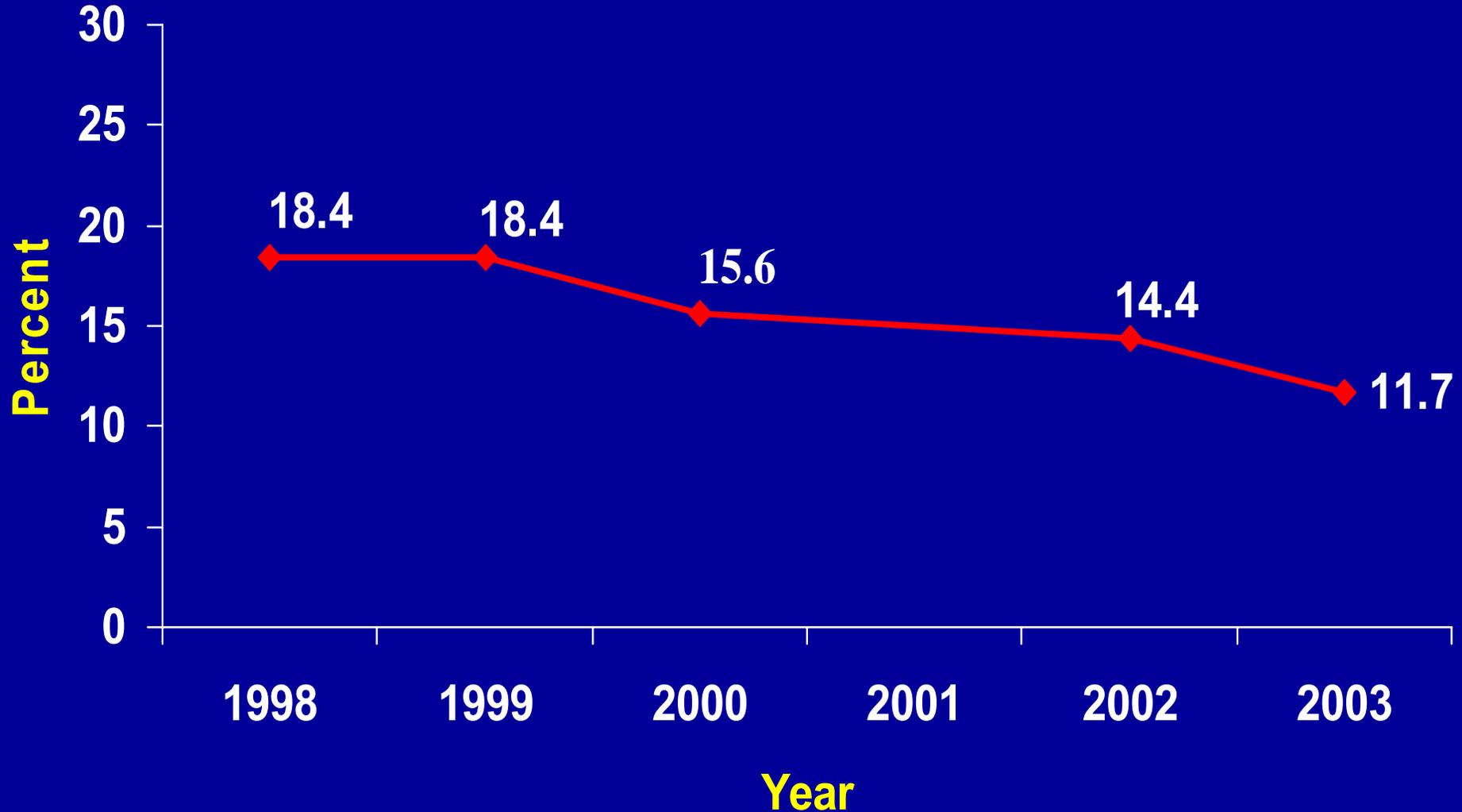


*Adjusted for results of quality assurance testing

HIV Prevalence among DFSW by duration of sex work, 2002-2003

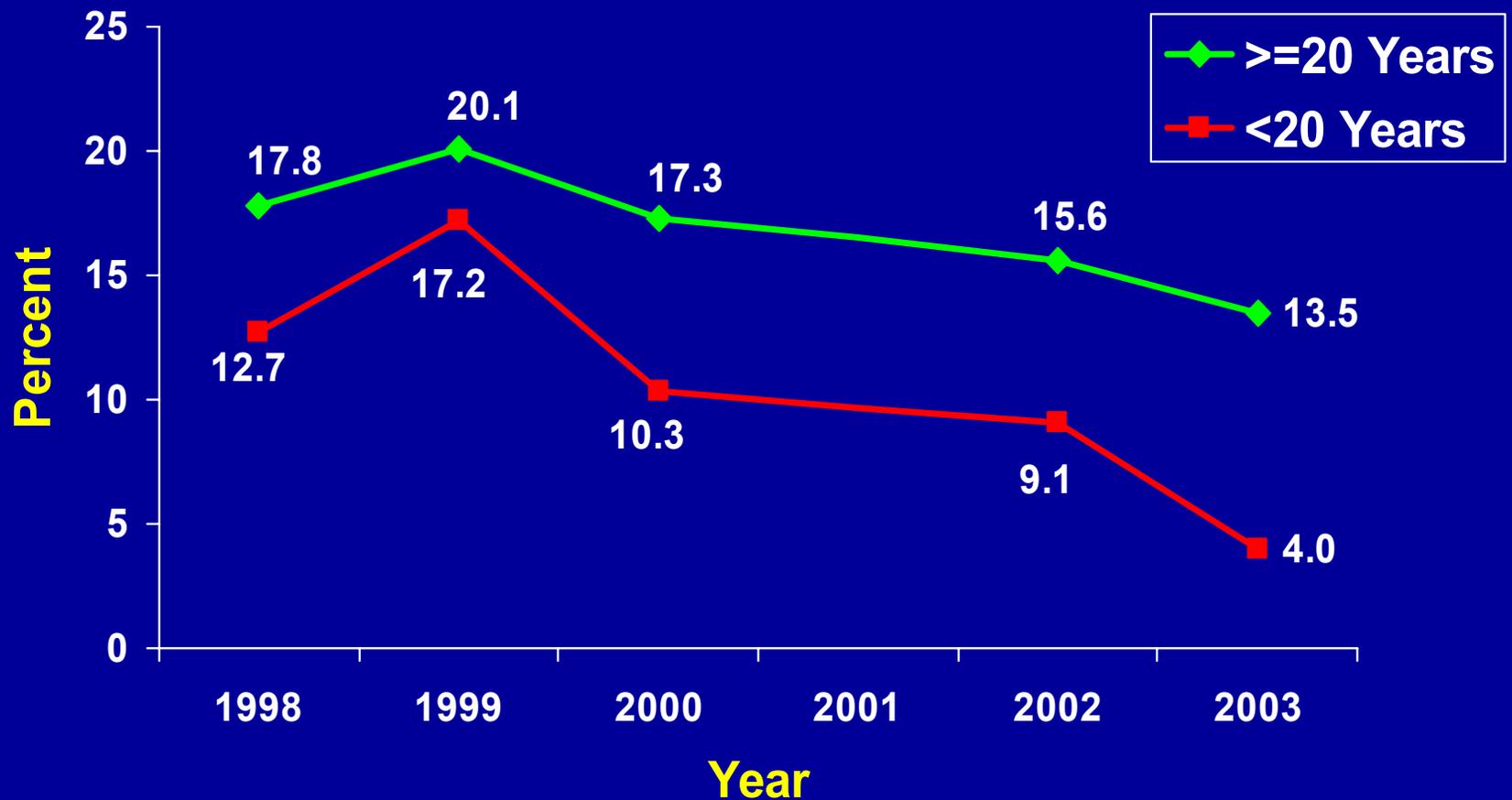


Adjusted HIV prevalence* among IDFSW, by year, 1998-2003



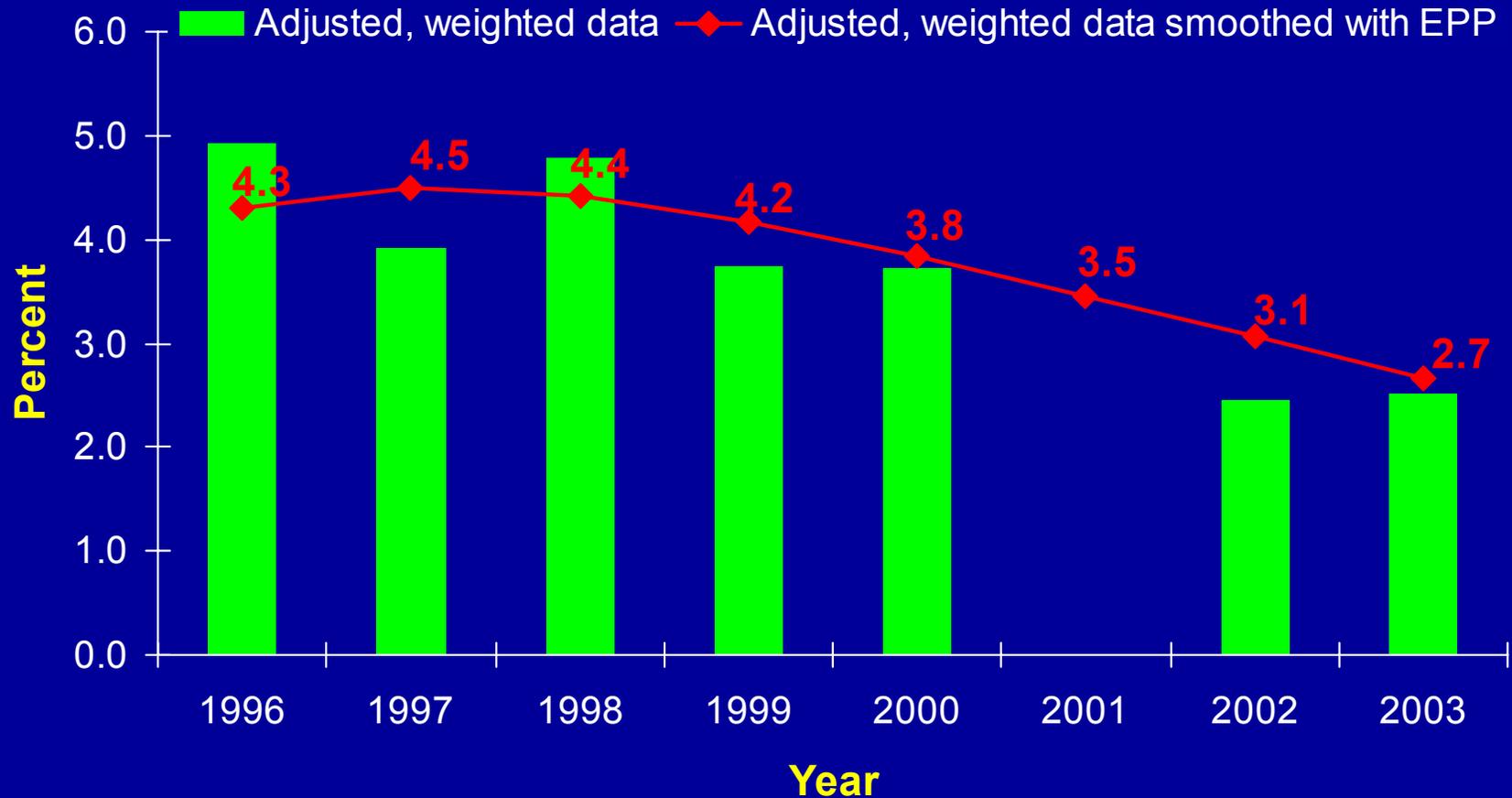
*Adjusted for results of quality assurance testing

Adjusted HIV prevalence* among IDFSW, by age category and year, 1998-2003

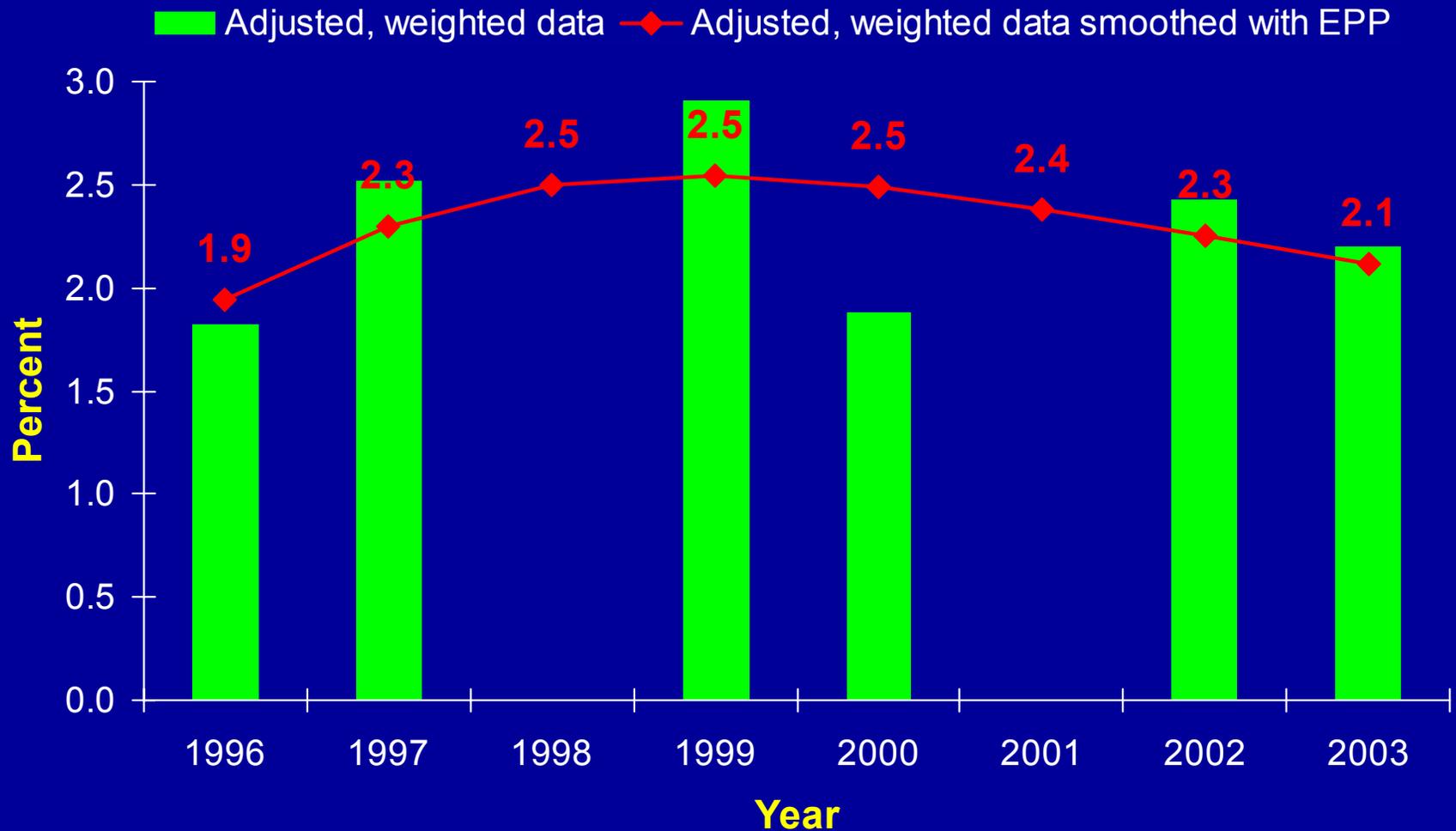


*Adjusted for results of quality assurance testing

Adjusted HIV prevalence* among police, by year, 1996-2003

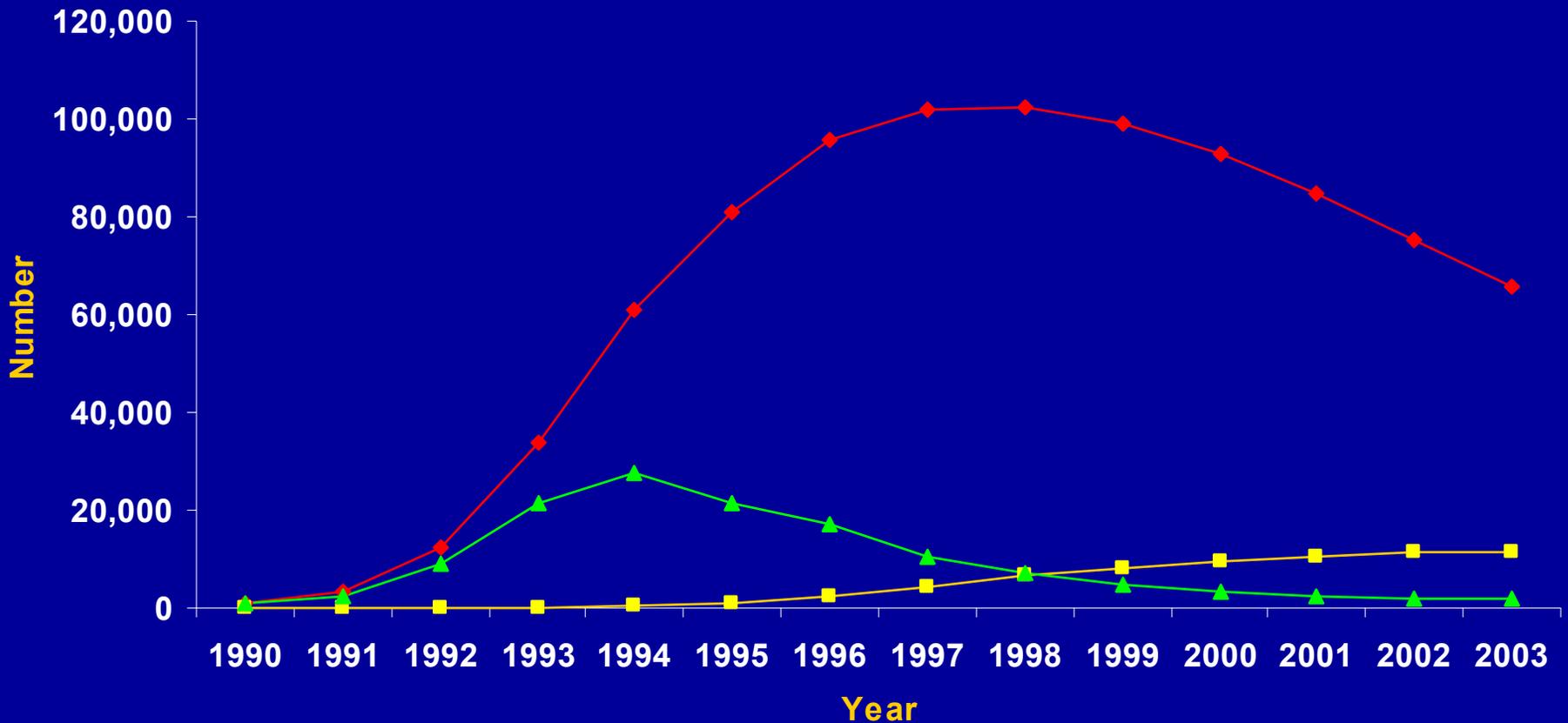


Adjusted HIV prevalence* among ANC women, by year, 1996-2003



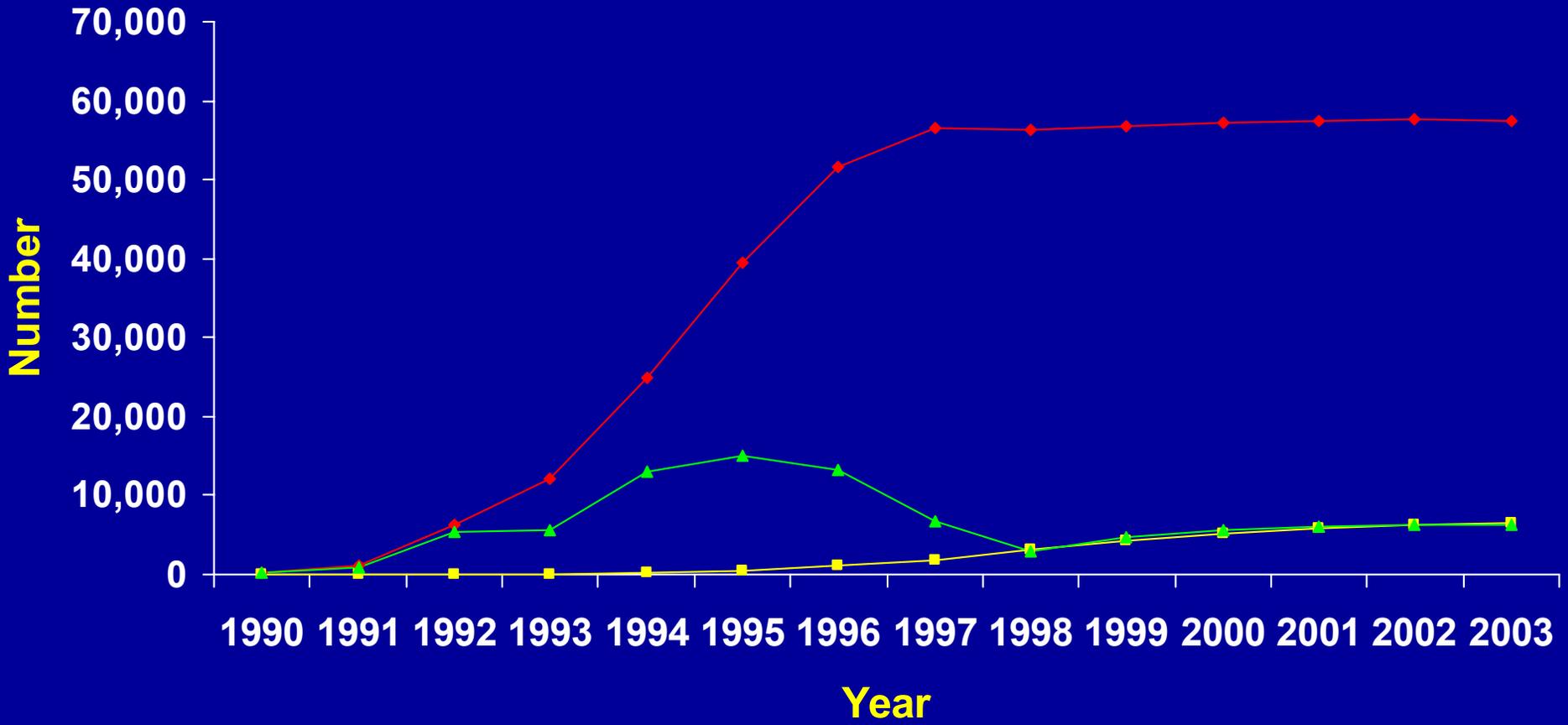
Estimated number of men aged 15-49 living with HIV, newly infected with HIV, and who died from AIDS, by year, Cambodia

Living with HIV (Prevalence) Deaths (Mortality) New HIV Infections (Incidence)

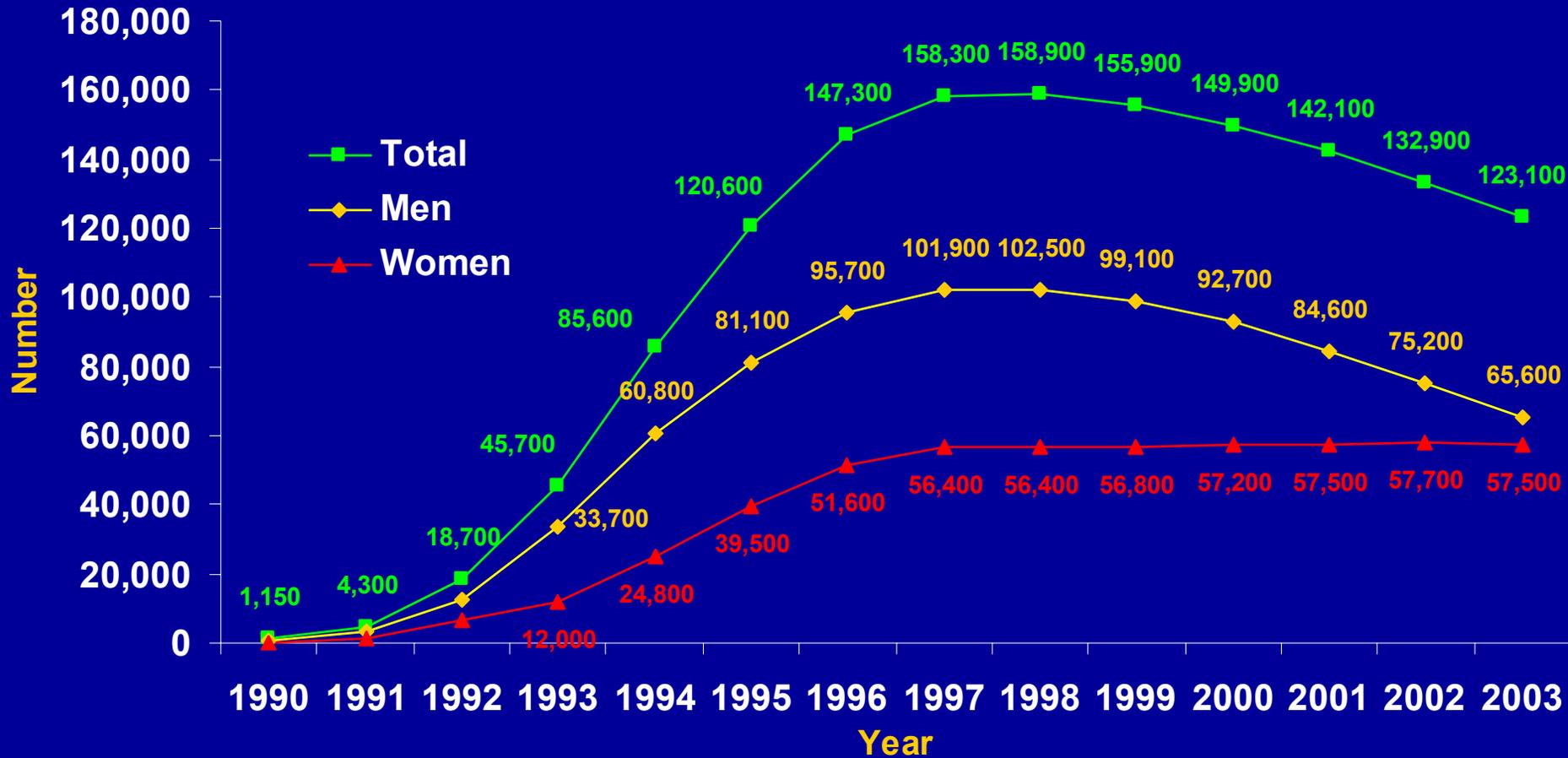


Estimated number of women aged 15-49 living with HIV, newly infected with HIV, and who died from AIDS, by year, Cambodia

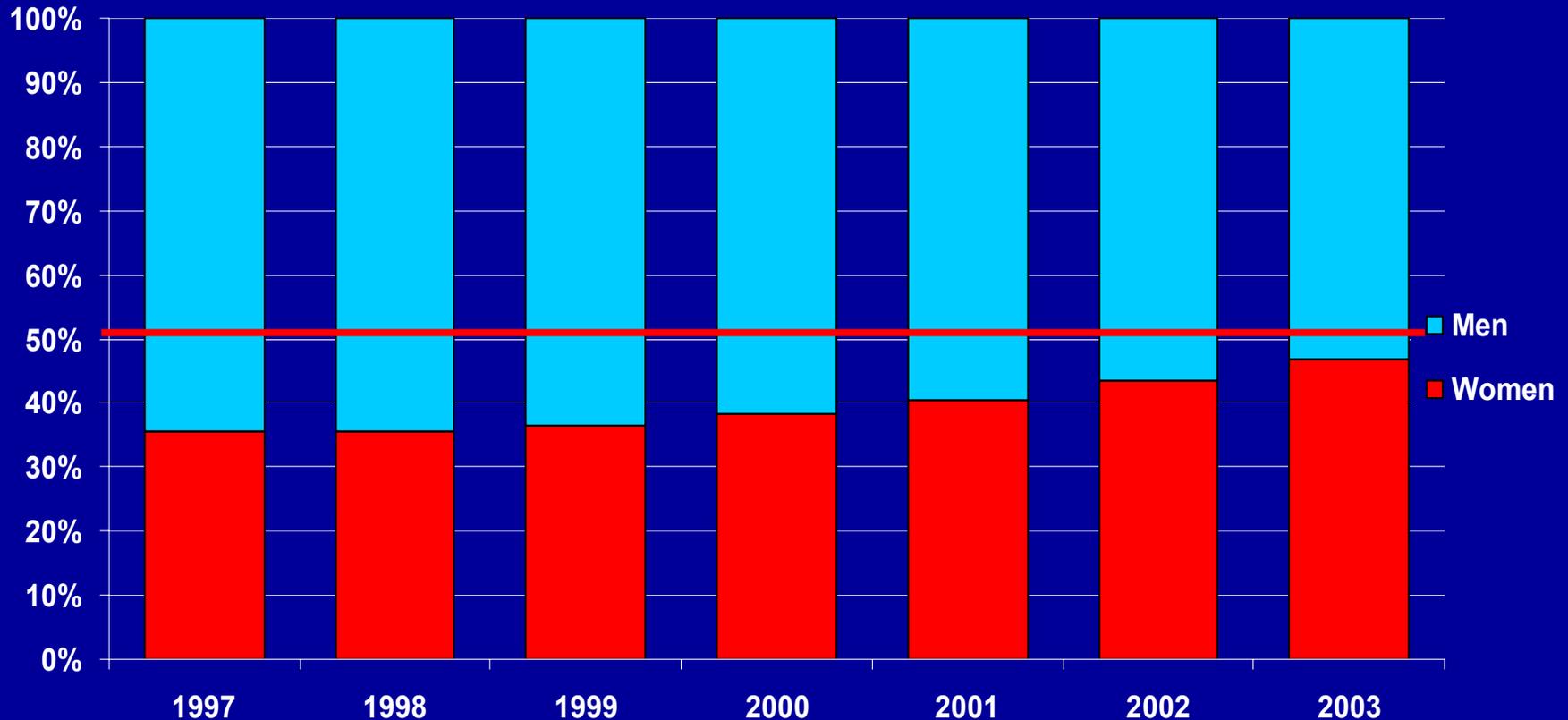
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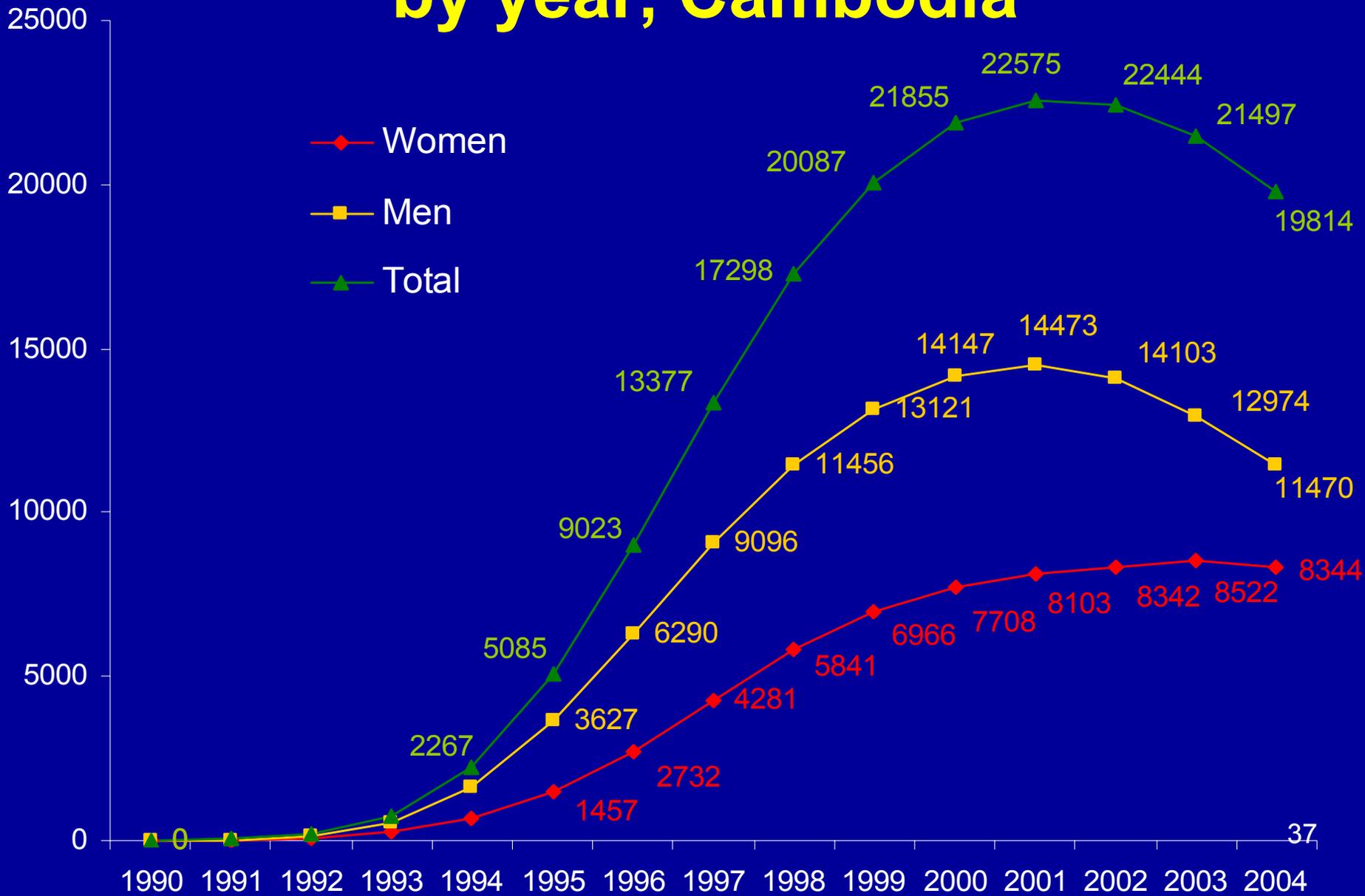
Estimated number of people aged 15-49 living with HIV/AIDS, 1990-2003, Cambodia



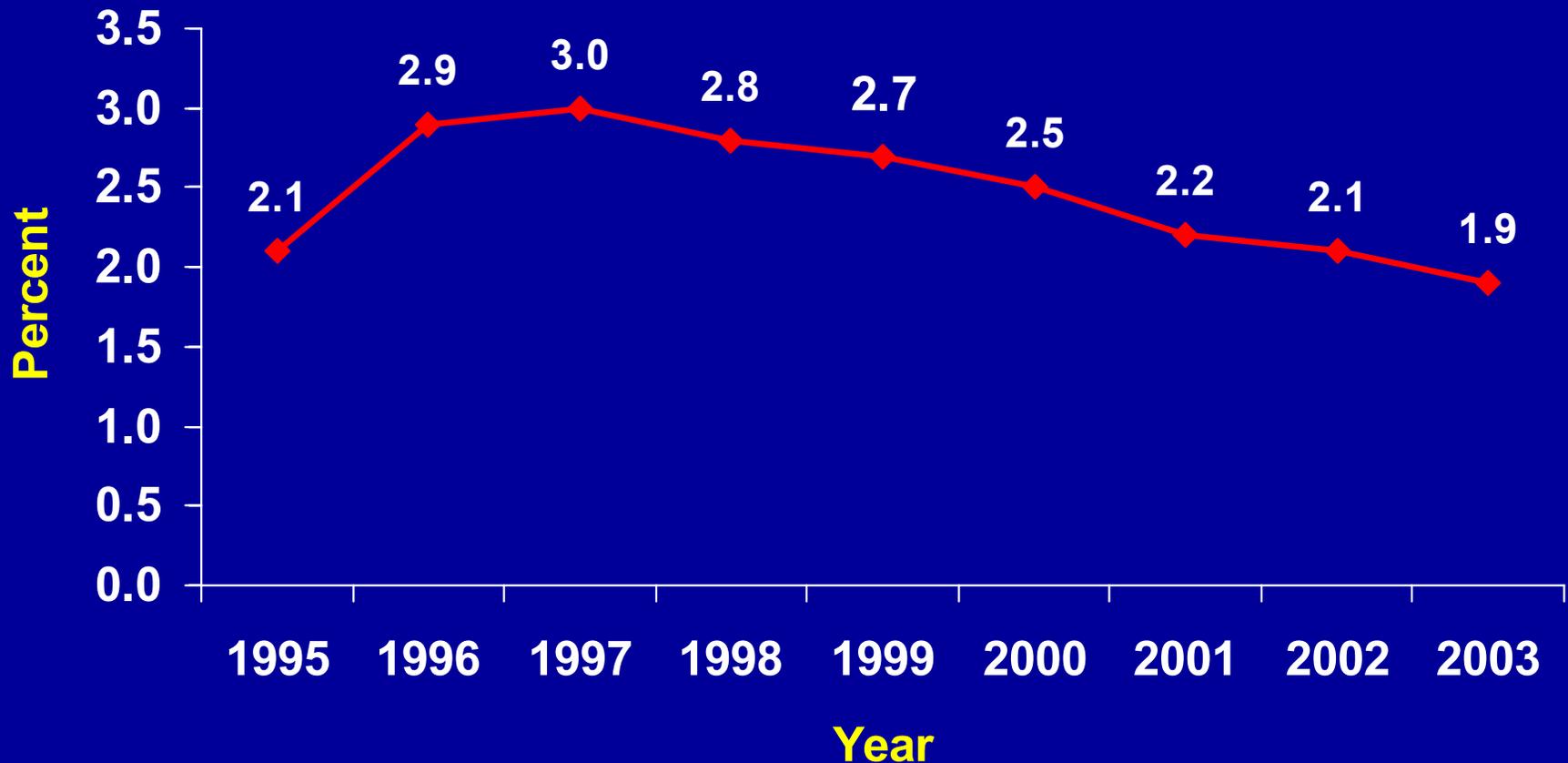
Gender distribution of people currently living with HIV/AIDS, 1997-2003



Estimated number of AIDS cases by year, Cambodia



Estimated National HIV Prevalence* among Adults Aged 15-49, 1995-2003, Cambodia



* From the modeled numbers of PLHA

Conclusions

- HIV prevalence has declined among sex workers and police but appears to be stable among pregnant women attending ANC
- Larger decline among young female sex workers compared with those older than 20 years suggests declining incidence in this group
- Estimated national prevalence of HIV among persons aged 15-49 has declined from **2.1%** in 2002 to **1.9%** in 2003
- Declining HIV prevalence not explained by increasing number of deaths alone, thus incidence (number of new HIV infections) must be declining
- Women make up an increasing proportion of persons living with HIV

Programmatic Implications

- HSS 2003 data provide data needed for evidence-based program planning
- ANC data may be used by PMTCT program planners for estimating need and for monitoring and evaluation
- Although prevalence is declining, an unacceptably large number of Cambodians living with HIV are in need of care and treatment
- Strategic planning is urgently needed if successes are to be sustained and additional epidemic waves prevented
- Current intervention efforts on high risk groups need to be sustained
- Effective family intervention (husbands and wives) must be implemented given that the HIV incidence among women is not declining

Recommendations for future rounds of HSS (1)

- Continue adherence to quality assurance:
 - Data collection, entry, analysis, interpretation
 - Laboratory testing
- Consider new strategies for HIV/AIDS surveillance
 - Integrate testing for determination of recent infection (incidence) into the HSS protocol
- Continue capacity building for surveillance at the provincial level

Recommendations for future rounds of HSS (2)

- Consider the need for data on HIV prevalence among drug users, men-who-have-sex-with-men, and migrant populations
 - Conduct pilot surveys among these groups before next HSS round
- Collect additional data to characterize the indirect sex worker group
 - Who they are and the size of the population at risk

Thank You!