HIV in South Asia: Understanding and Responding to a Heterogeneous Epidemic

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OVERVIEW(1-1)

- The core challenge for policy makers and economists working on AIDS in Asia
- How to convince governments to invest in programs to protect vulnerable groups – injecting drug users, sex workers and men having sex with men

INTRODUCTION(1-1)

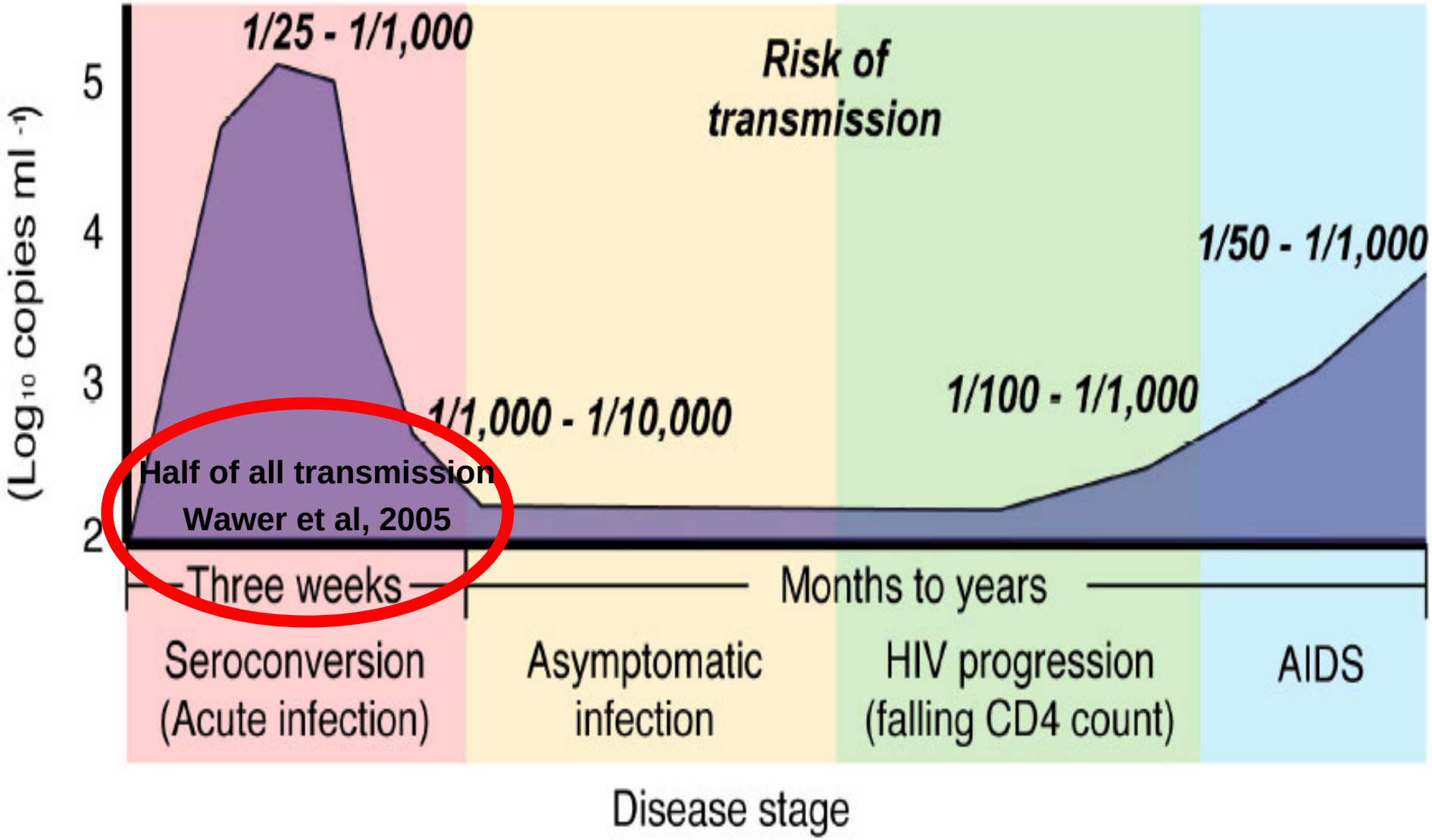
- HIV reached most places at similar time, but spread very differently
- Why so heterogeneous?

HETEROGENEITY OF HIV: CONCURRENT SEXUAL PARTNERSHIPS[1-2]

- How does HIV infectiousness vary over disease stages and how do acute infection and structure of sexual partnerships influence transmission?

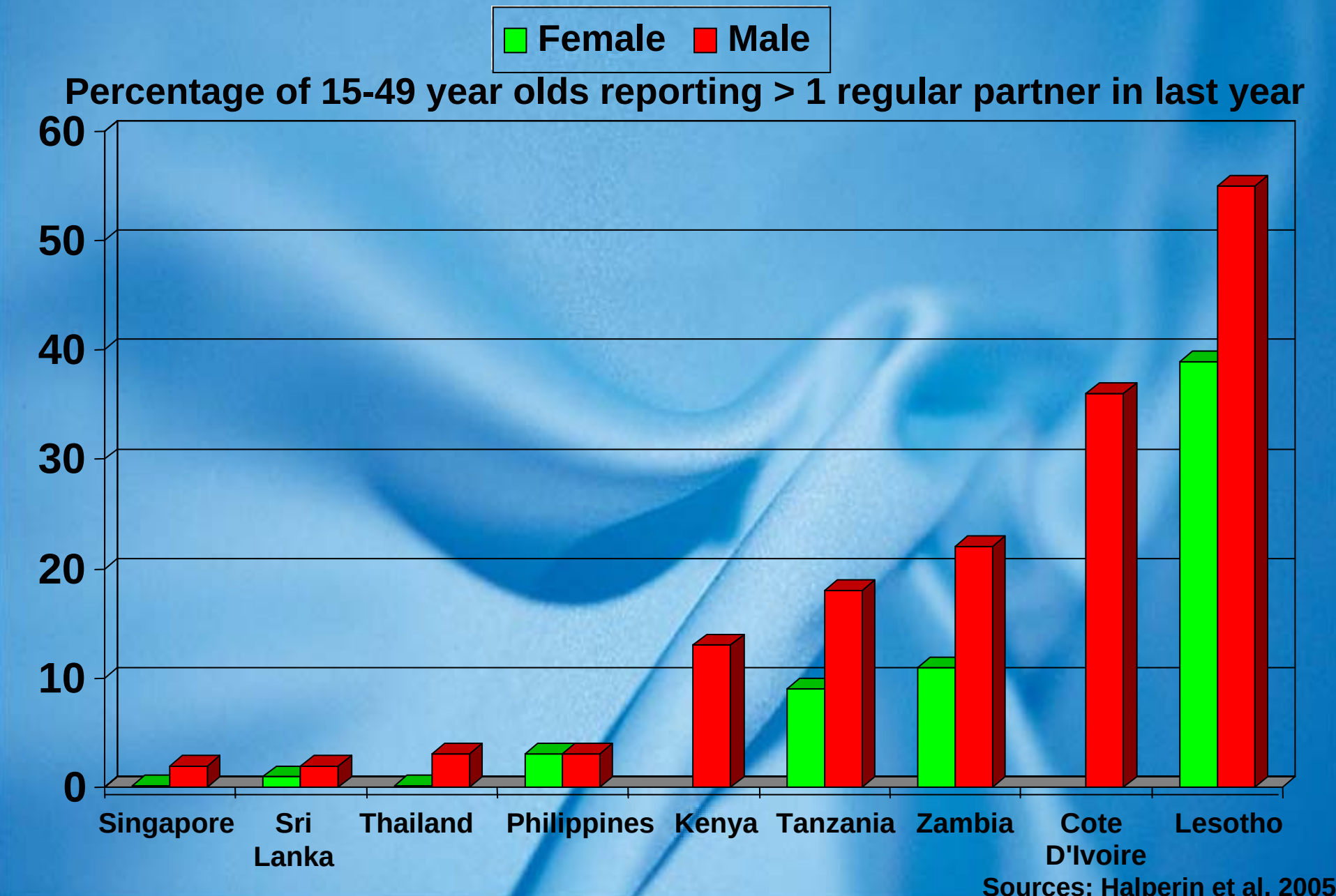
- Sexual partnerships serial – one after another – or concurrent – overlapping

HIV TRANSMISSION RISKS



Source: Galvin, S.R. & Cohen, M.S. (2004) The role of sexually transmitted diseases in HIV infection. Nature Reviews Microbiology, 2(1).

CONCURRENT PARTNERSHIPS GLOBALLY



Sources: Halperin et al. 2005

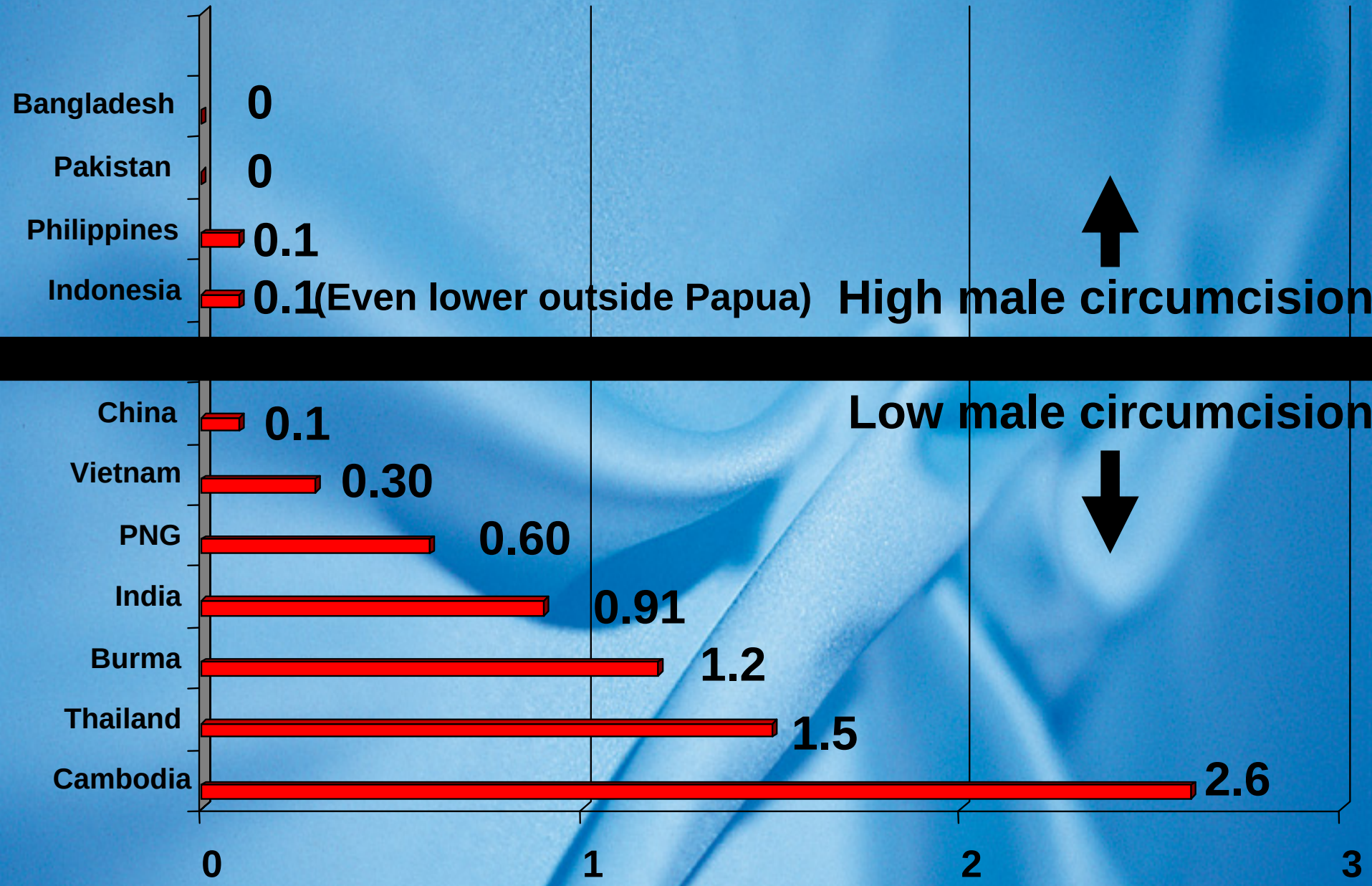
HETEROGENEITY OF HIV: CONCURRENT SEXUAL PARTNERSHIPS(2-2)

- Concurrent partnerships less common in Asia
- Morris showed that without differences in numbers of partners, HIV transmission 10-fold greater with concurrent partnerships
- South Asia's epidemics unlikely to be driven by concurrent sexual networks in general population

HETEROGENEITY OF HIV: MALE CIRCUMCISION(1-1)

- Meta-analyses - circumcised men 50-70% less likely to get HIV
- Ecological studies - male circumcision major factor in variations in Africa's HIV epidemic
- Thee randomized trials in Africa - male circumcision reduced HIV transmission by 50-60%
- In Asia, circumcision's primary importance ISN'T as intervention, but as determinant of epidemic potential
- In highly circumcised countries – Pakistan, Bangladesh and Afghanistan in South Asia and Indonesia and Philippines in East Asia (which have nearly billion people) – heterosexual transmission may be limited (currently below 0.1%) – *unless other factors ignite it – which they may*

DIVERSITY OF HIV IN ASIA IN 2005



Sources: UNAIDS, 2004

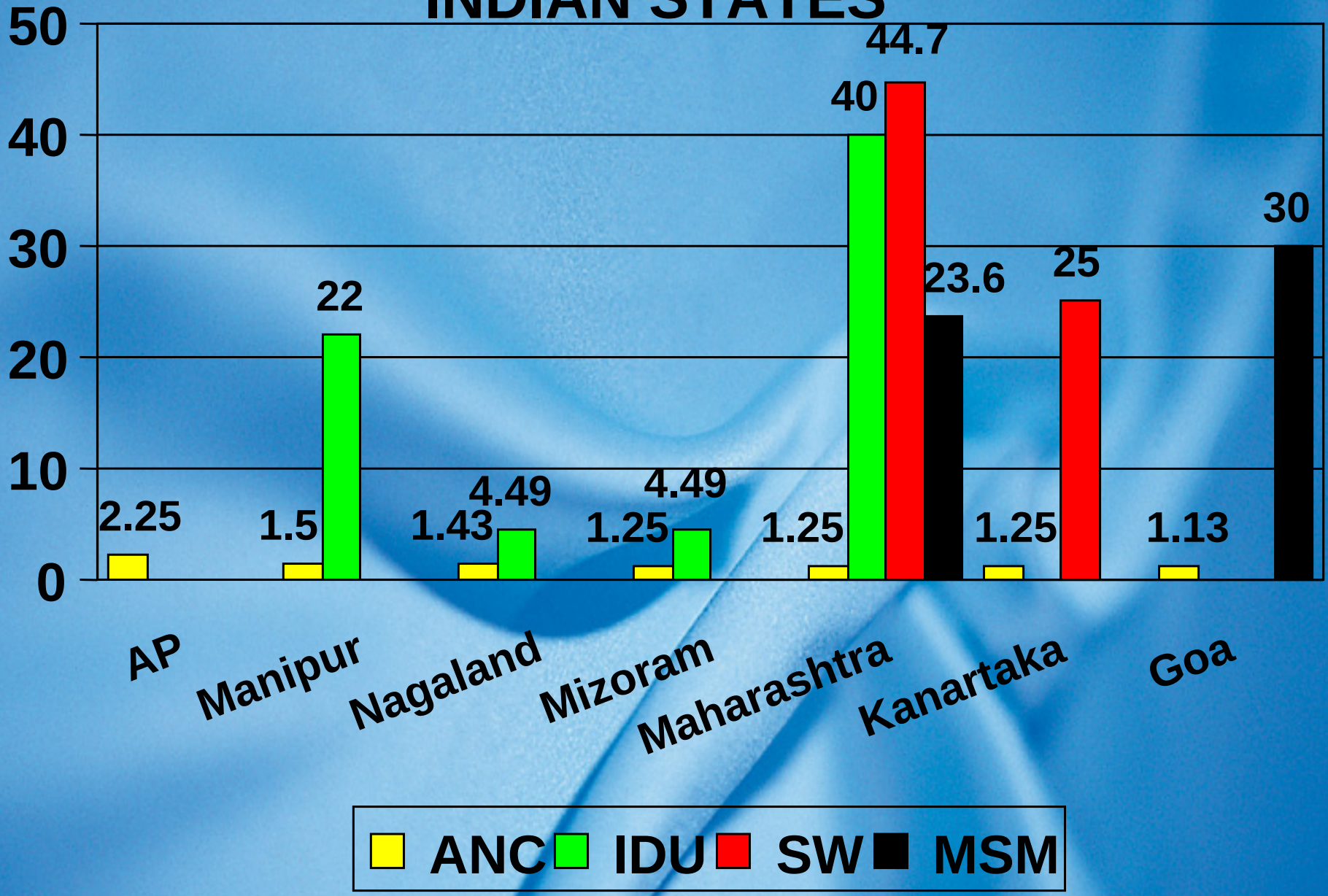
HETEROGENEITY OF HIV: THE LETHAL COCKTAIL[(1-1)]

- Concurrent sexual partnerships and limited male circumcision fuel and match that lit Southern Africa's uniquely explosive epidemics – together, these factors may increase HIV transmission 30-fold – explaining much heterogeneity in HIV epidemic potential

TRANSMISSION DYNAMICS[1-2]

- Conventional definition - epidemic concentrated until 1%, then generalized - obscures understanding of HIV transmission patterns
- Need revised definition:
  - Concentrated - transmission largely among vulnerable groups and vulnerable group interventions would reduce overall infection
  - Generalized - transmission mainly outside vulnerable groups and would continue despite effective vulnerable group interventions

HIV INFECTION IN HIGH PREVALENCE INDIAN STATES

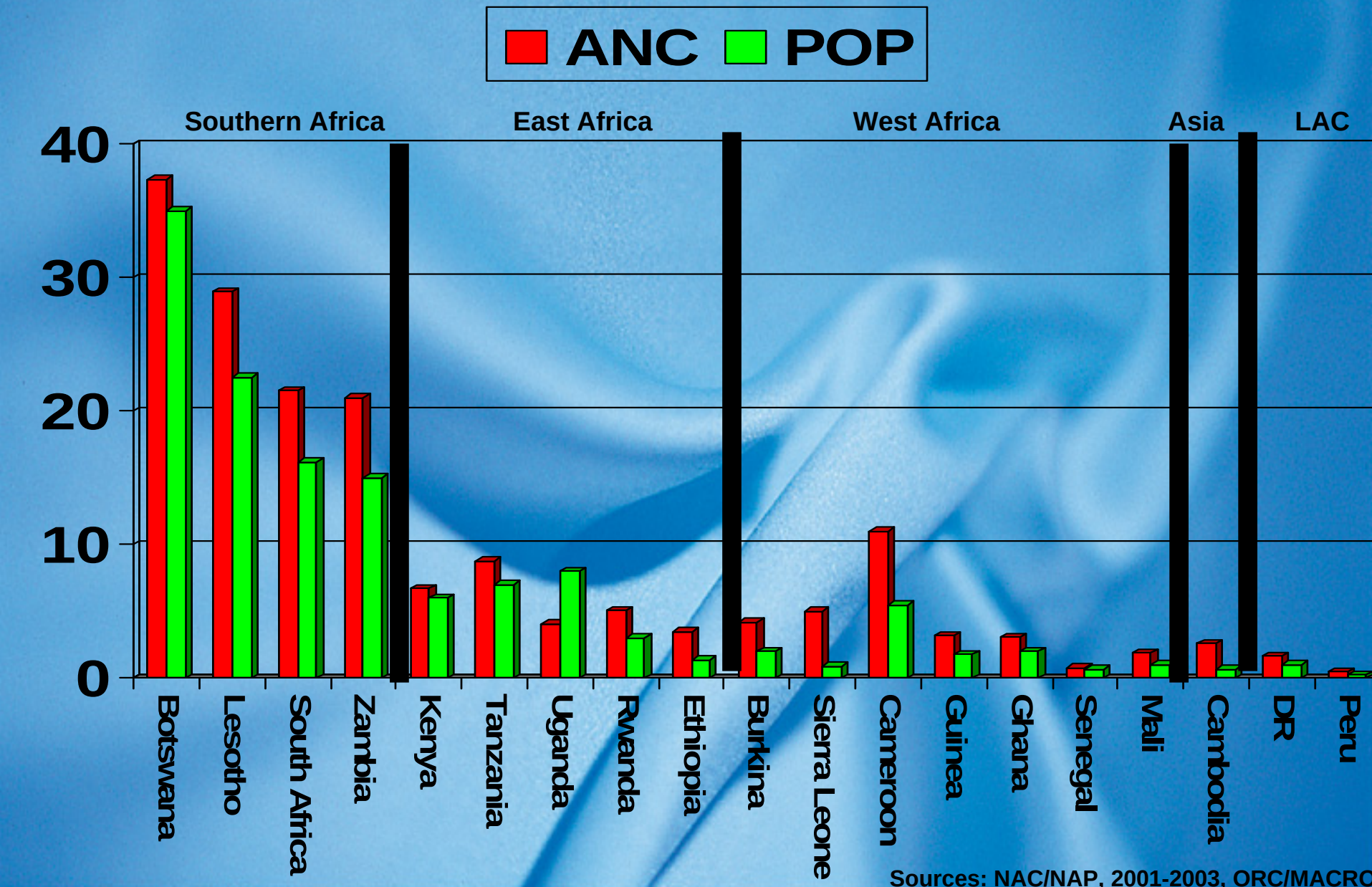


Sources: India NACO, 2005, US Bureau of the Census, 2005

TRANSMISSION DYNAMICS(2-2)

- Asian epidemics driven by vulnerable groups
- Asian epidemics further differentiated - ignited by sex or drugs
- Asian epidemics ignited by sex if:
  - Men uncircumcised
  - Many men routinely visit SW (> 10%)
  - SW have many clients (> 20 weekly)
- Thus, epidemics in Thailand, Cambodia, perhaps Burma, most of India (except North East) ignited by sex
- Elsewhere in Asia, IDU the spark plug that ignites sexual transmission, SW the engine that maintains it
- Thus, in Pakistan, Bangladesh, Indonesia, Vietnam, China, IDU fires sexual transmission
- Philippines – no spark plug, little transmission?
- East Asian data shows how IDU can fuel HIV in sex work, fundamentally amplifying epidemic potential
- Pakistan, Bangladesh, Afghanistan – lands of opportunity. Effective IDU programs can dramatically curtail sexual epidemics

NATIONAL ANTENATAL AND POPULATION HIV ESTIMATES

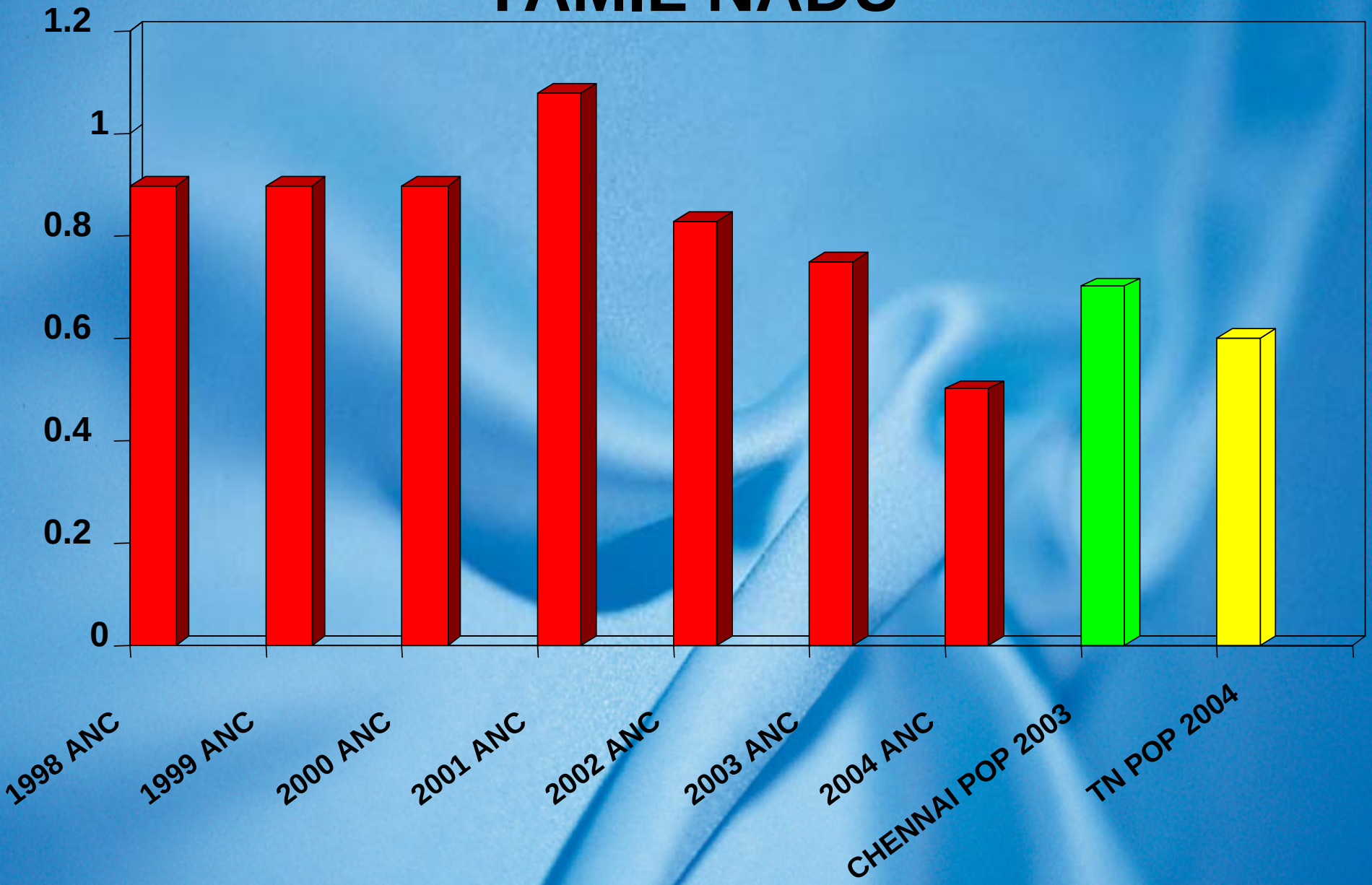


Sources: NAC/NAP, 2001-2003, ORC/MACRO

USING DATA FOR PROGRAMMING: DATA ROBUSTNESS IN INDIA(1-1)

- India relies on ANC data - data emerging from other sources
- ANC and vulnerable group data considerable but uneven, especially in North
- What are we learning globally about the relationship between ANC and population data?
- India doing world's largest ever national population survey in 2006 - until then, the available evidence suggests India's HIV estimates are credible

ANC AND POPULATION DATA IN TAMIL NADU

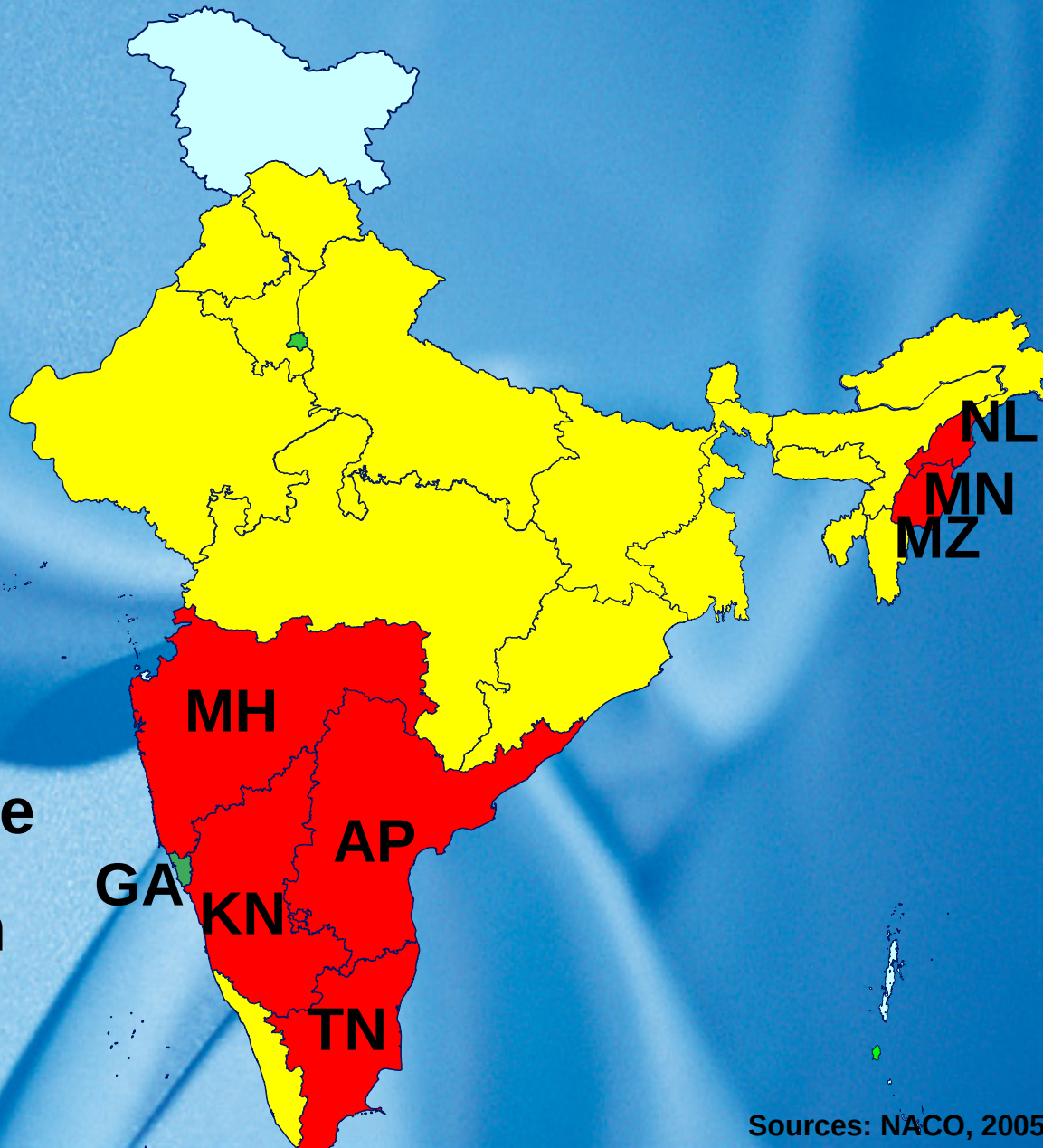


Sources: NACO, 2005, APAC, 2005, Celentano et al, 2004

HIV IN INDIA[1-6]

Overview

- India's 7 high prevalence states – in South, West and North-East – have many of the detected HIV cases
- However, they also have much of the existing surveillance
- National population survey will provide vital data

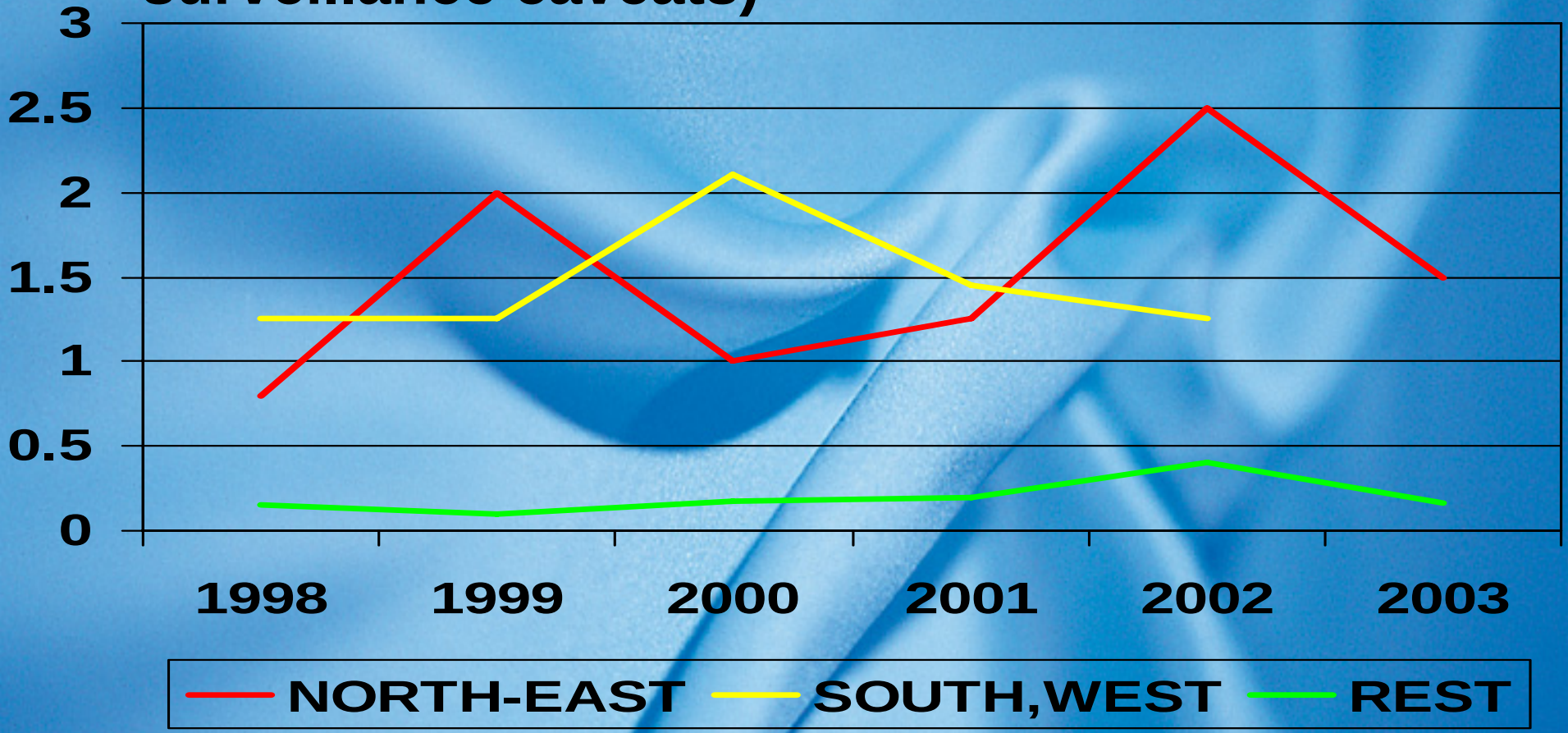


Sources: NACO, 2005

HIV IN INDIA[2-6]

Overview

- HIV in South, West and North-East apparently five-fold higher than rest of India (with earlier surveillance caveats)

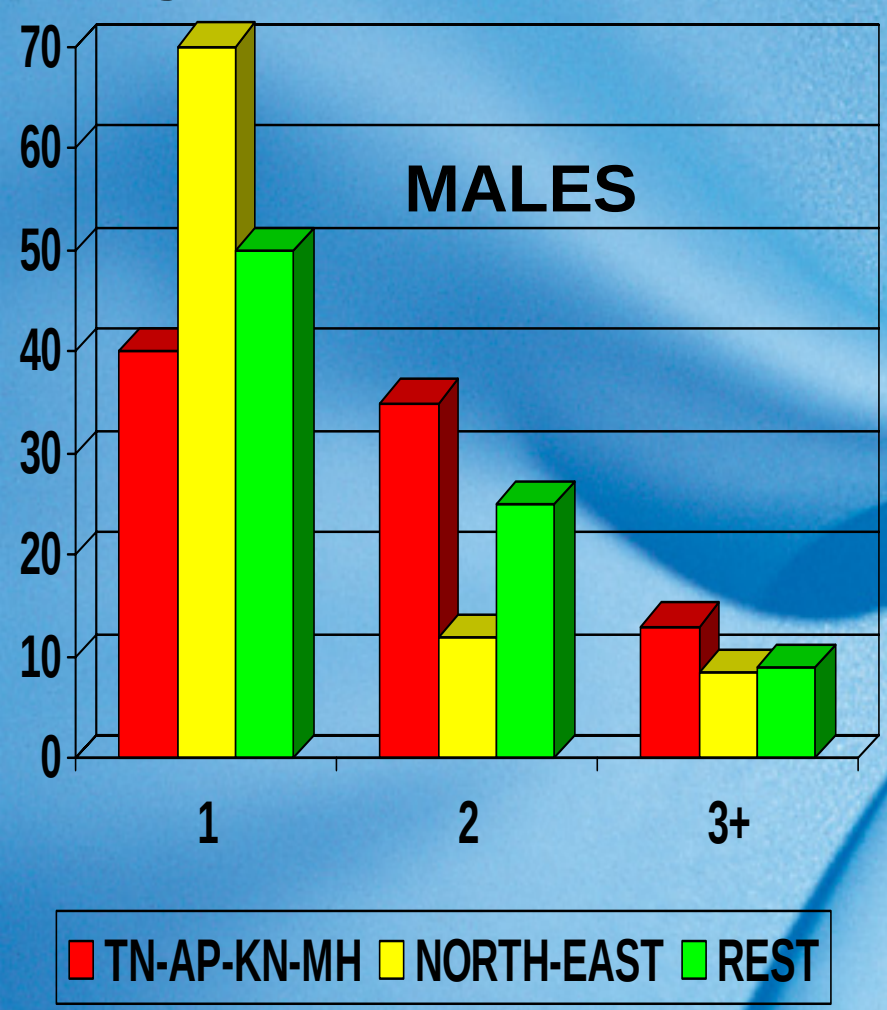


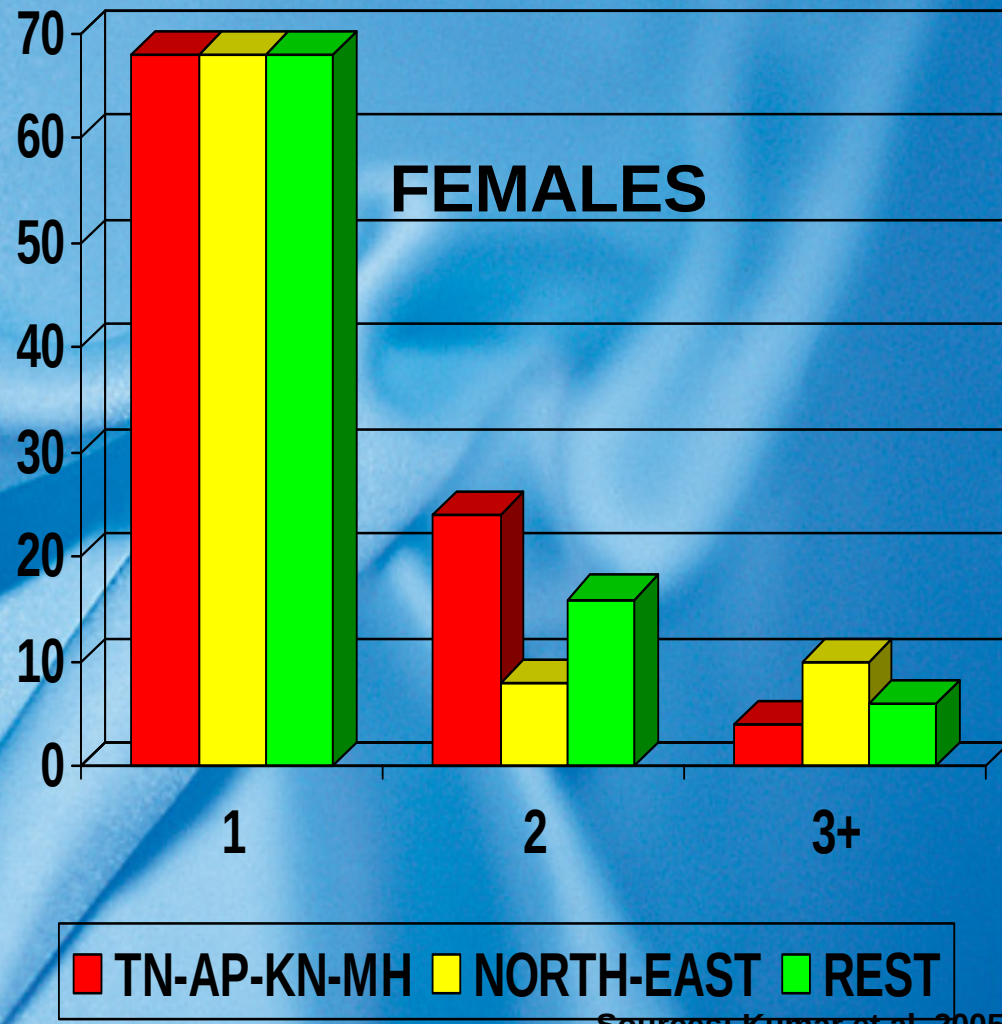
Sources: Kumar et al, 2005

HIV IN INDIA[3-6]

Overview

- Two to four-fold more sexual partners in last year in South and West



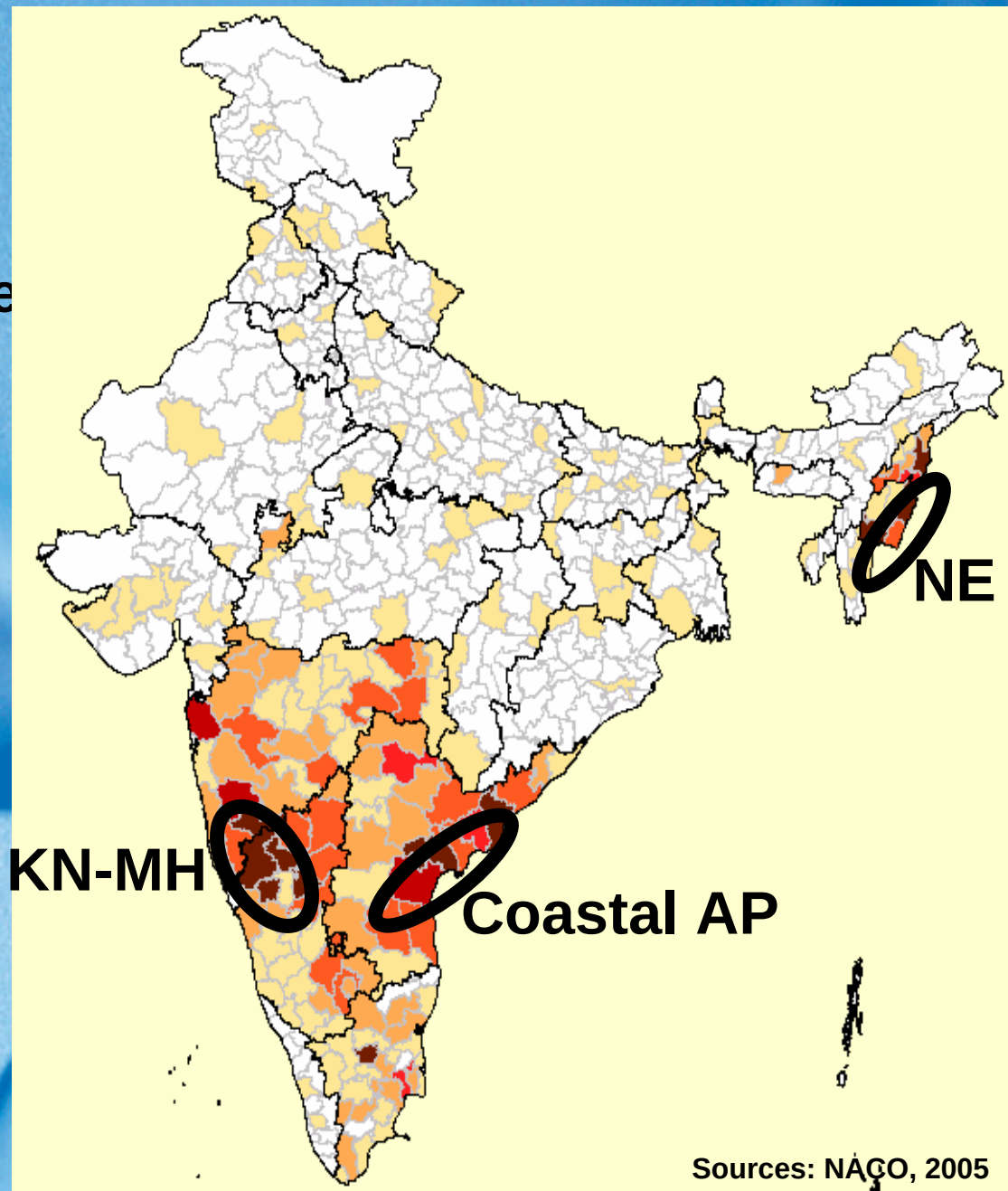


Sources: Kumar et al, 2005

HIV IN INDIA[4-6]

Overview

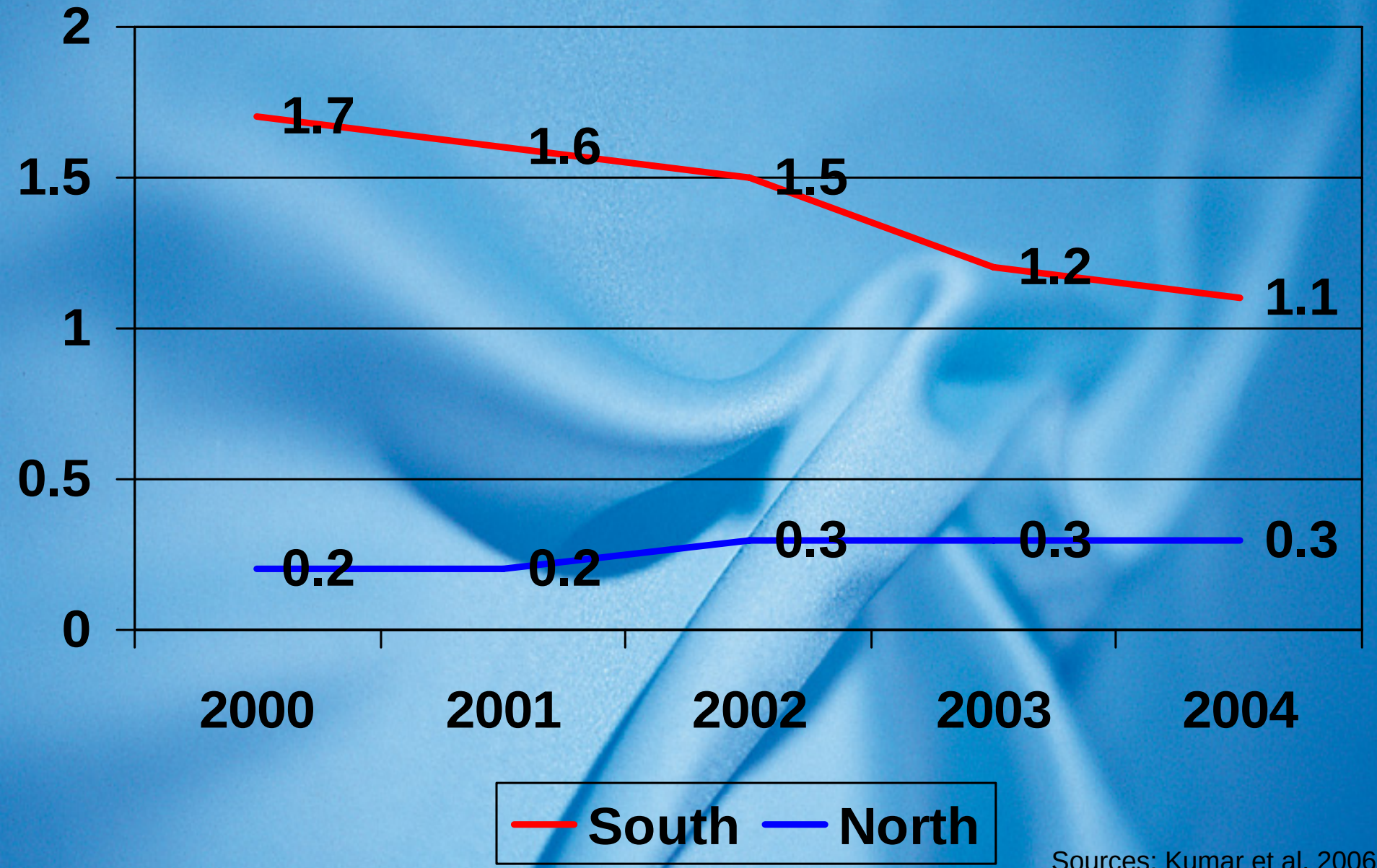
- NACO's district analysis important
- About 50 high prevalence districts (many rural) – have many of the detected HIV cases
- Many high prevalence districts in 3 major clusters:
  - KN-MH corridor
  - Coastal AP
  - North-East
- However, many districts have not data



HIV IN INDIA [5-6]

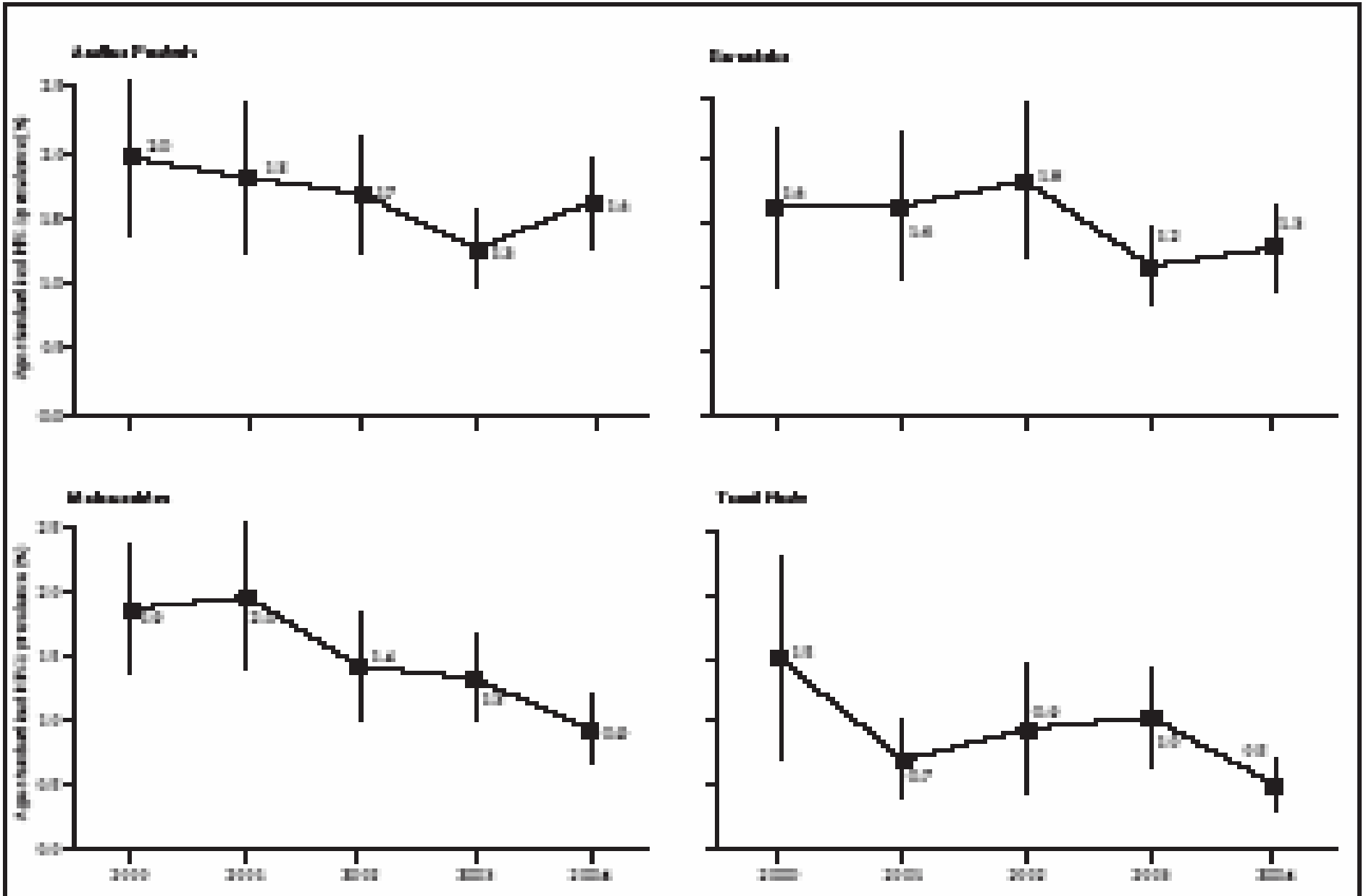
- Recent evidence suggests HIV prevalence has fallen among young ANC and STI clients in South India – and remained low and stable in North India

HIV PREVALENCE IN INDIAN ANC CLIENTS AGED 15-24



Sources: Kumar et al, 2006

HIV PREVALENCE IN ANC CLIENTS AGED 15-24 BY STATE



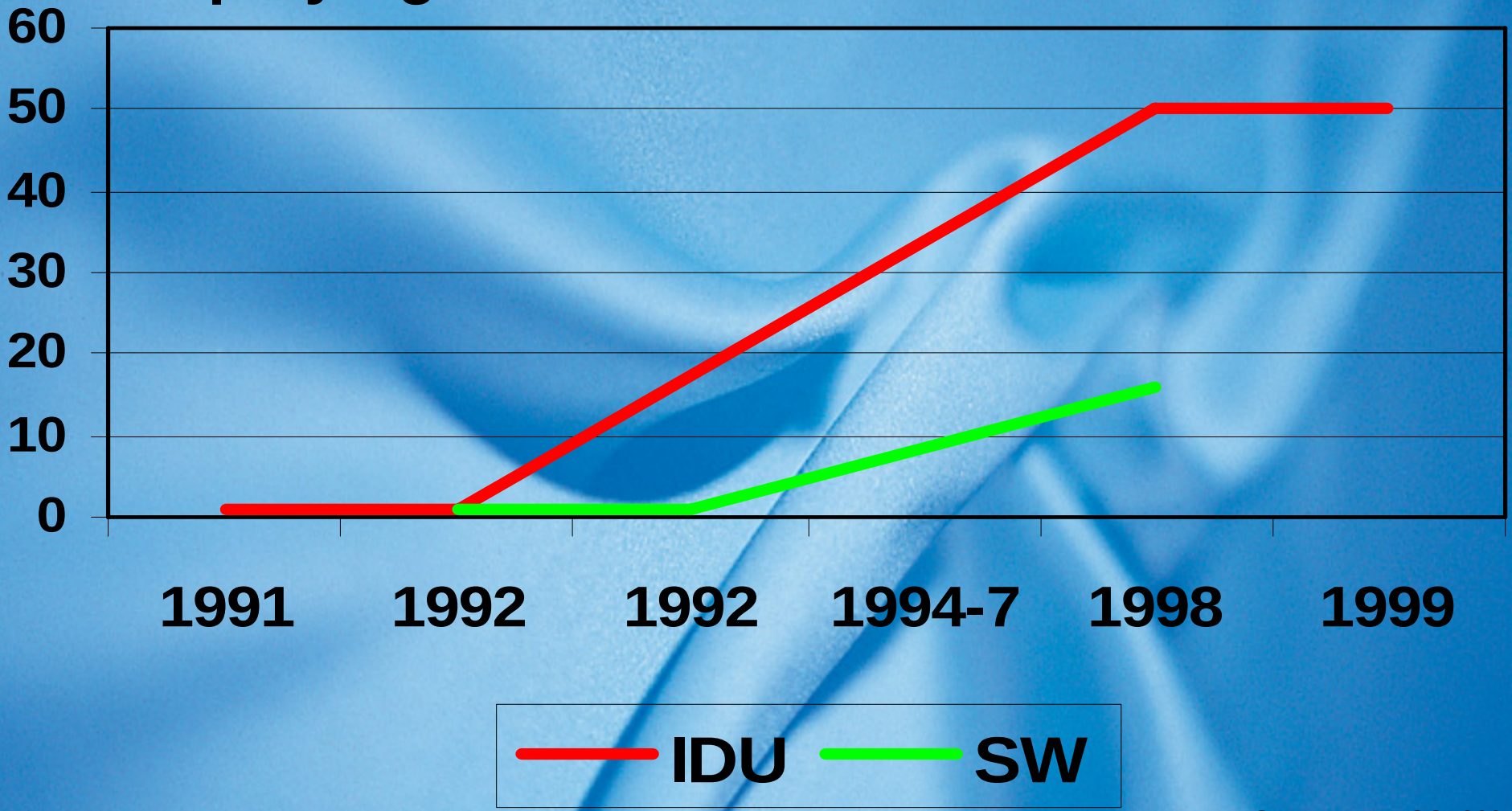
HIV IN INDIA(6-6)

Summary

- India's epidemic containable
- Ignited by IDU in North-West and SW elsewhere
- Requires highly disaggregated analysis and response – focusing on high prevalence districts and blocks
- Likely to be determined in 30-50 key districts in 7 key states
- Significant rural epidemic in Karnataka

USING DATA FOR PROGRAMMING: NEPAL[1-3]

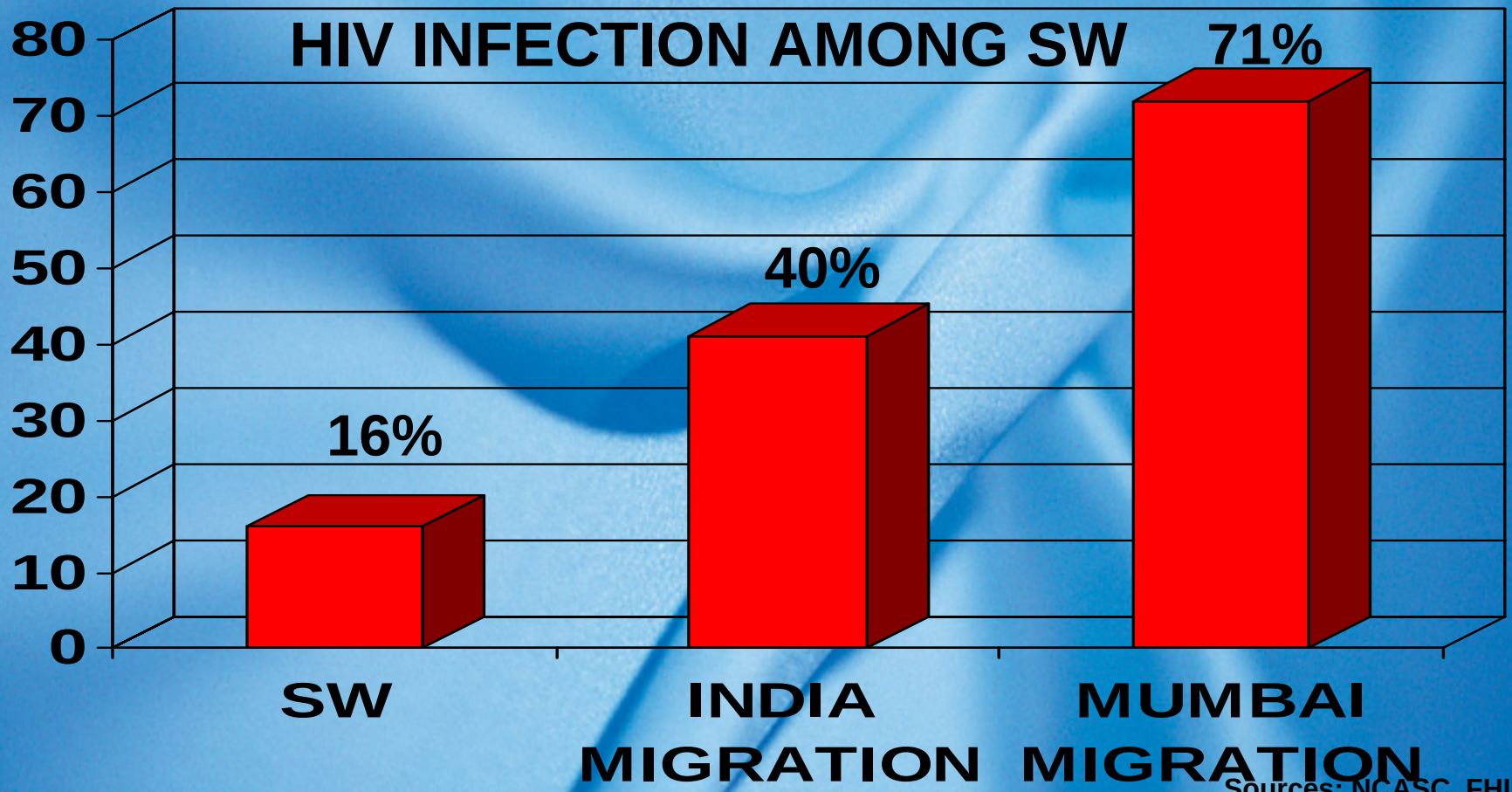
- In Kathmandu, IDU rates rose rapidly, amplifying SW infection



Sources: NACO, 2005

USING DATA FOR PROGRAMMING: NEPAL[2-3]

- Migration and trafficking, especially to Mumbai, amplifies HIV infection - 40% of Nepal's epidemic linked to migration and trafficking to India



Sources: NCASC, FHI, 2003

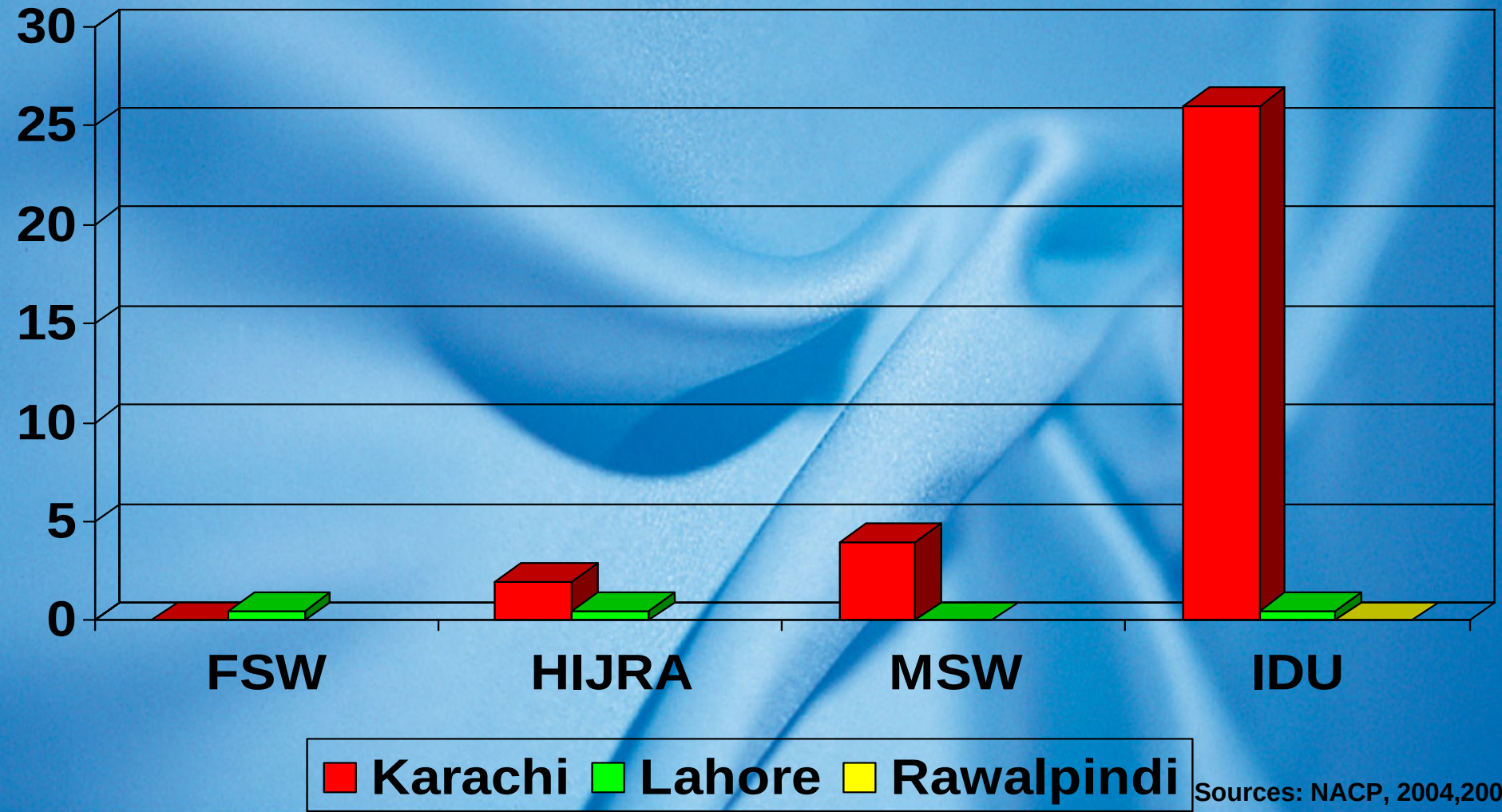
USING DATA FOR PROGRAMMING: NEPAL(3-3)

Summary

- Nepal's epidemic comparable to India's and more severe than recognized
- Driven by IDU and SW and migrants, particularly SW migrating to Mumbai
- Instability hinders response - innovative partnerships vital

USING DATA FOR PROGRAMMING: PAKISTAN[1-2]

- Epidemic largely in Karachi - mainly IDU, also MSM. FSW rates close to zero



Sources: NACP, 2004,20055

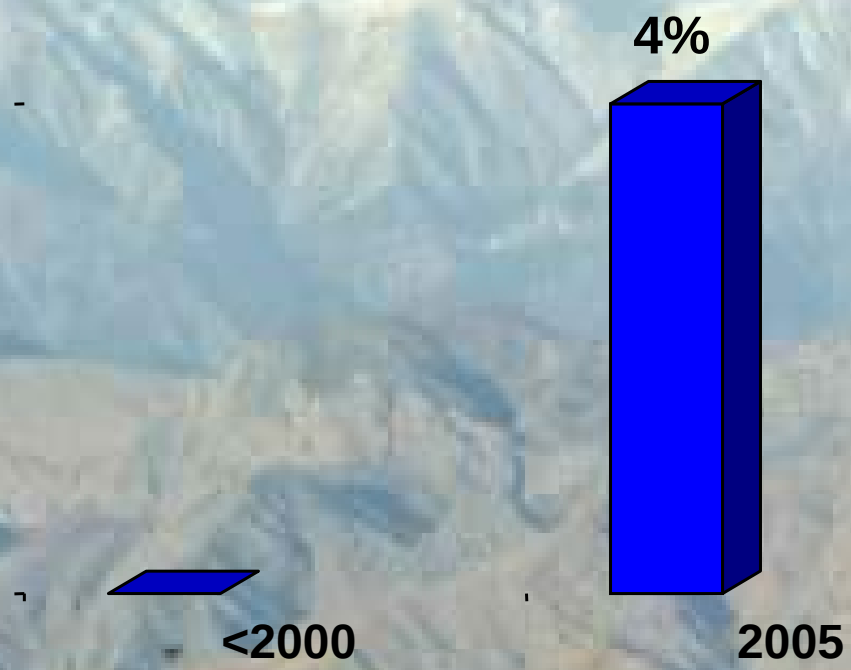
USING DATA FOR PROGRAMMING: PAKISTAN(2-2)

Summary

- Molecular epidemiology shows HIV strains in Karachi new – rising fast
- Pakistan today – lessons from Indonesia a decade ago
- Without immediate large-scale, IDU and SW programs, HIV injected into previously resilient, low-prevalence female and male SW networks, fundamentally transforming epidemic character and potential

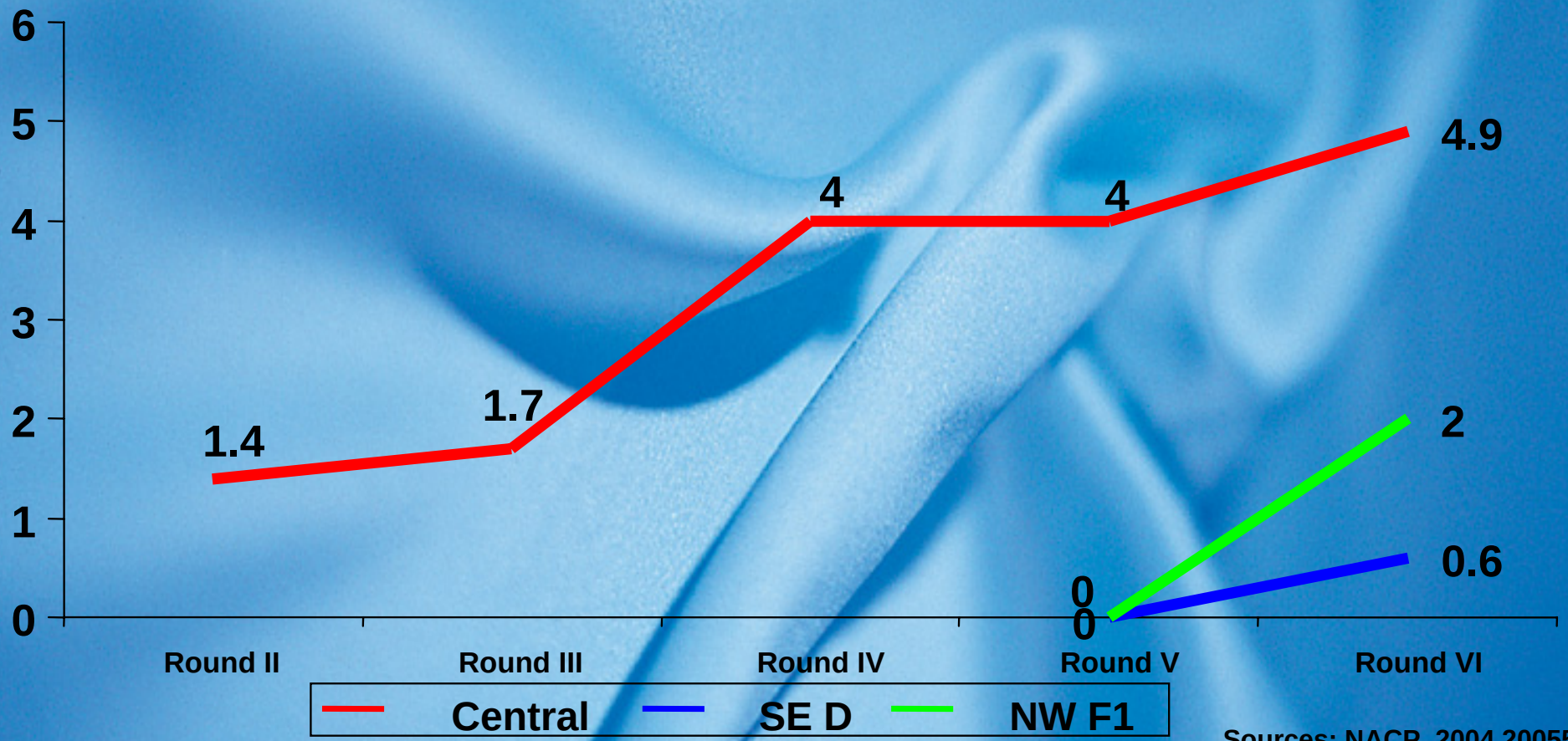
USING DATA FOR PROGRAMMING: AFGHANISTAN(1-1)

- Between Iran, Central Asia and Pakistan – IDU rates rising



USING DATA FOR PROGRAMMING: BANGLADESH[1-5]

- HIV rising among IDU, especially in Central region

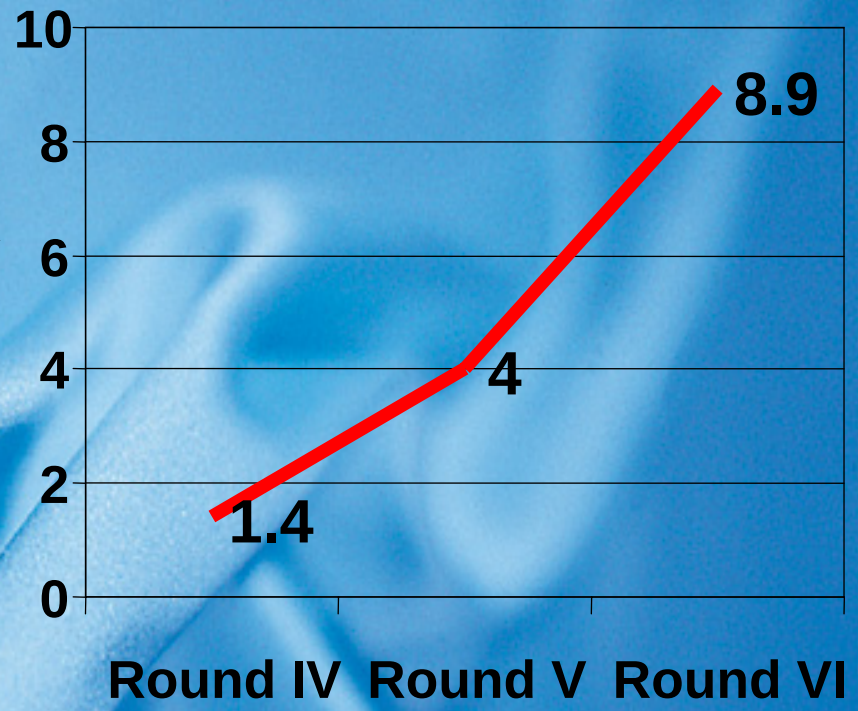


Sources: NACP, 2004,20055

USING DATA FOR PROGRAMMING: BANGLADESH[2-5]

- Remarkable concentration – and heterogeneity

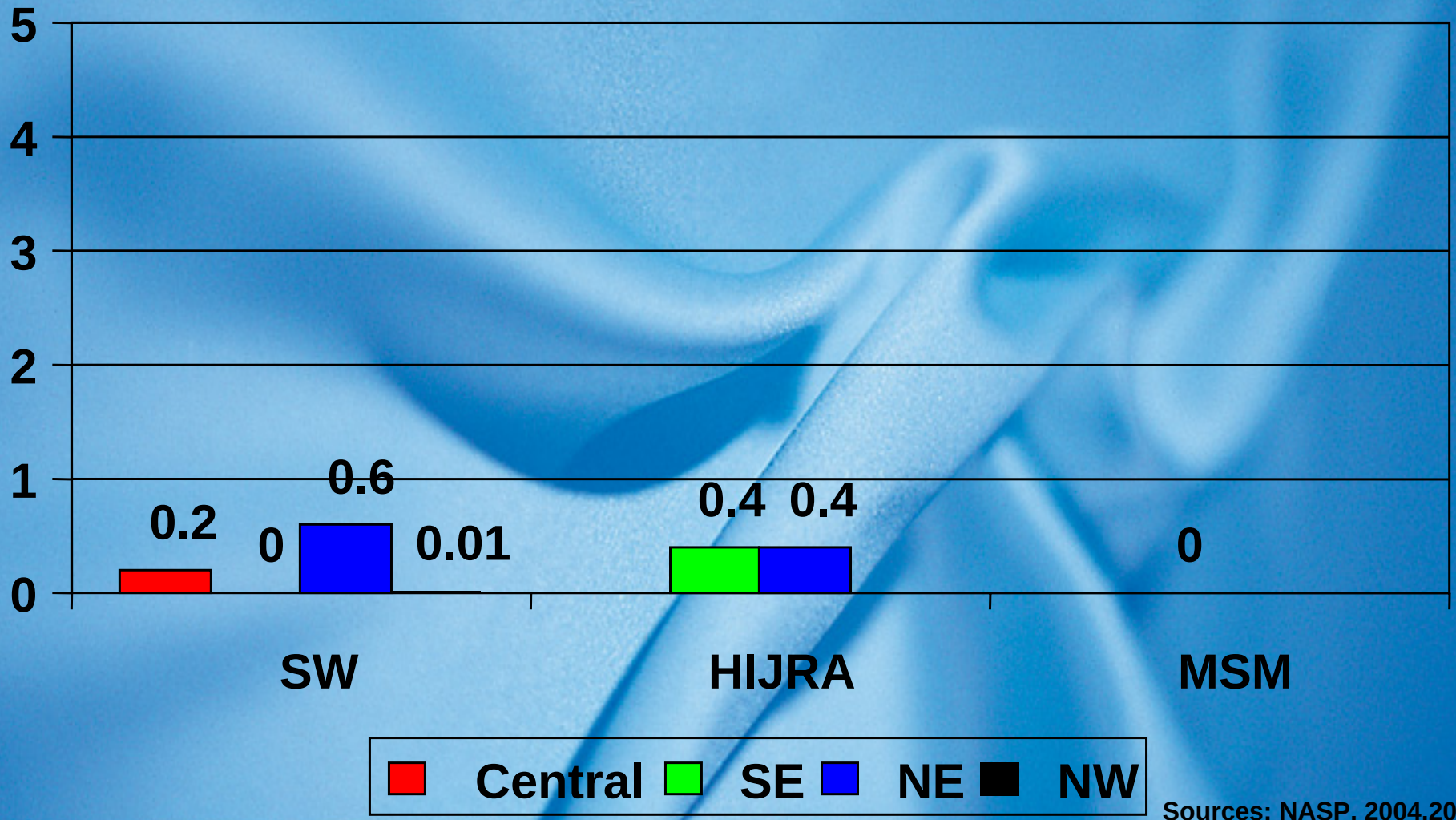
Central A2 drug centres	% HIV+
Area 4	2%
Area 5	8.9%
Area 6	0%
Area 7	0%
Area 8	0%
Area 9	0%
Area 10	0%
Area 11	0%
Area 12	0%
Area 13	0%
Area 14	0%



Sources: NASP, 2004,20055

USING DATA FOR PROGRAMMING: BANGLADESH[3-5]

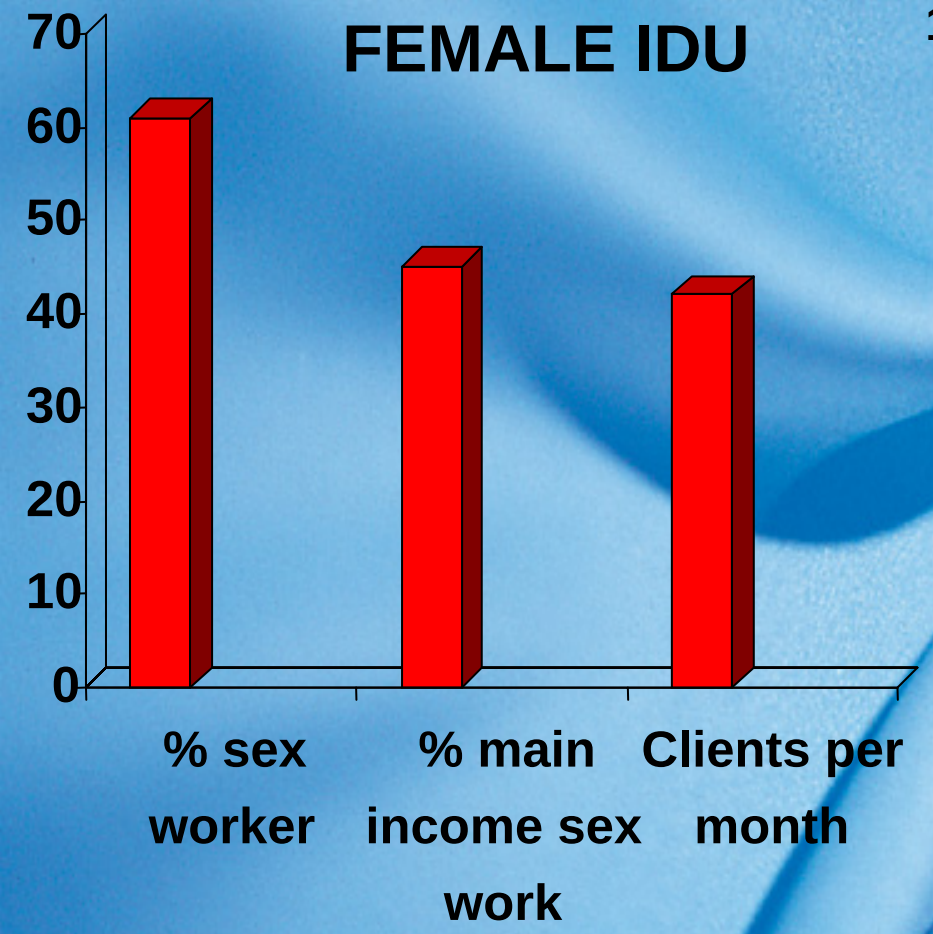
- Rates among other groups almost zero

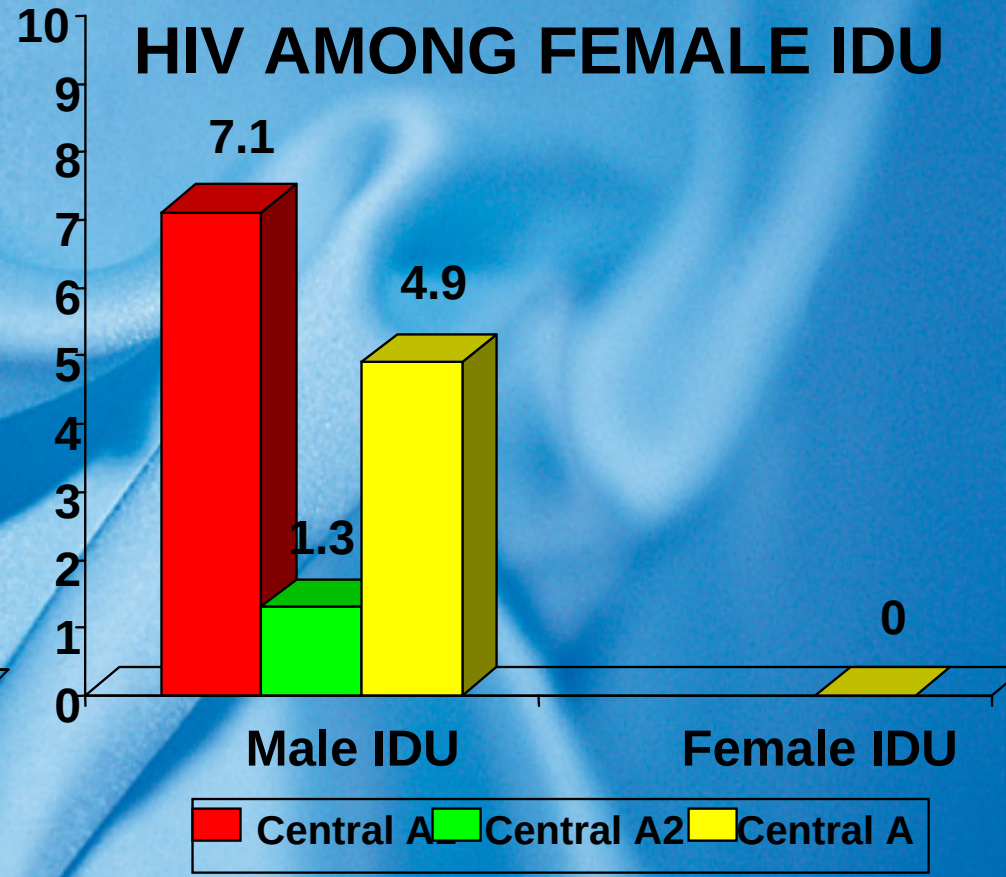


Sources: NASP, 2004,2005

USING DATA FOR PROGRAMMING: BANGLADESH[4-5]

- But rates won't stay zero unless injecting is kept safe





Sources: NASP, 2004,2005

USING DATA FOR PROGRAMMING: BANGLADESH (5-5)

Summary

- Epidemic highly focused among IDU in defined localities
- Ultra-intensive focus on these areas and large-scale national IDU, SW and MSM programs can prevent further transmission
- Some programs already slowing HIV transmission?

USING DATA FOR PROGRAMMING: SRI LANKA(1-1)

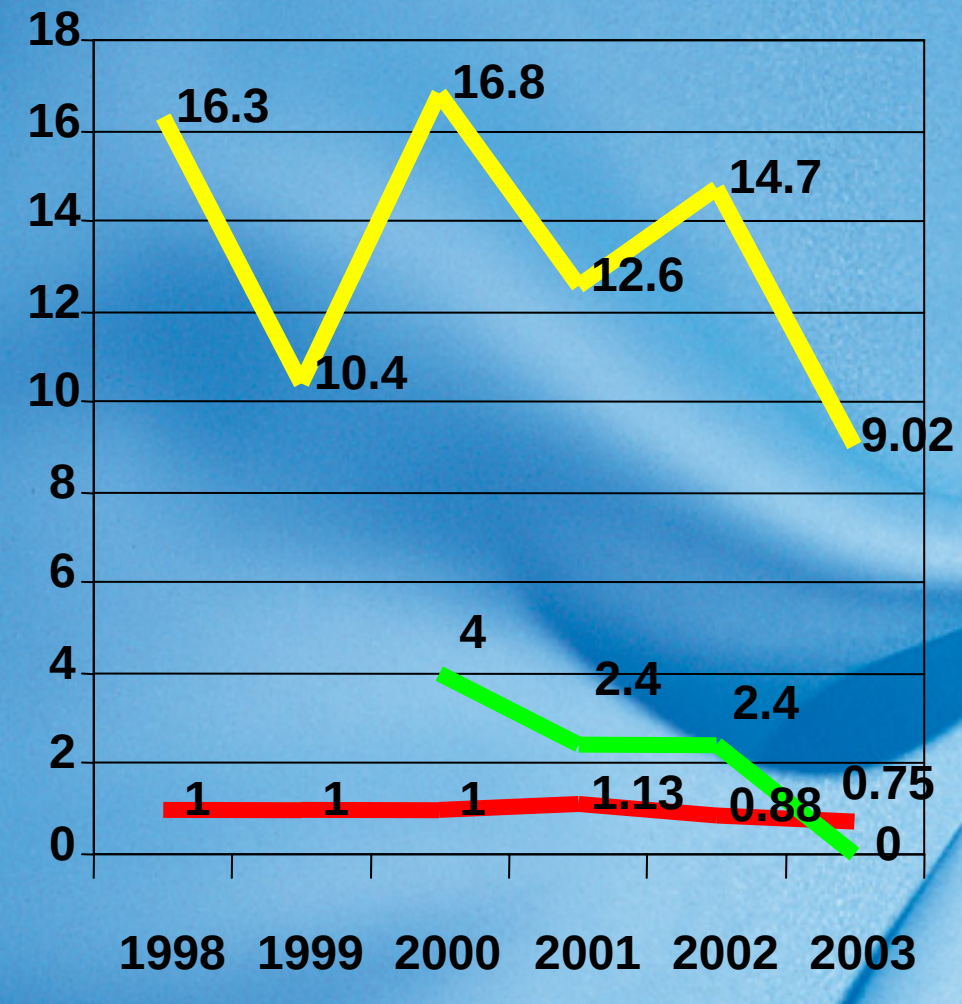
Summary

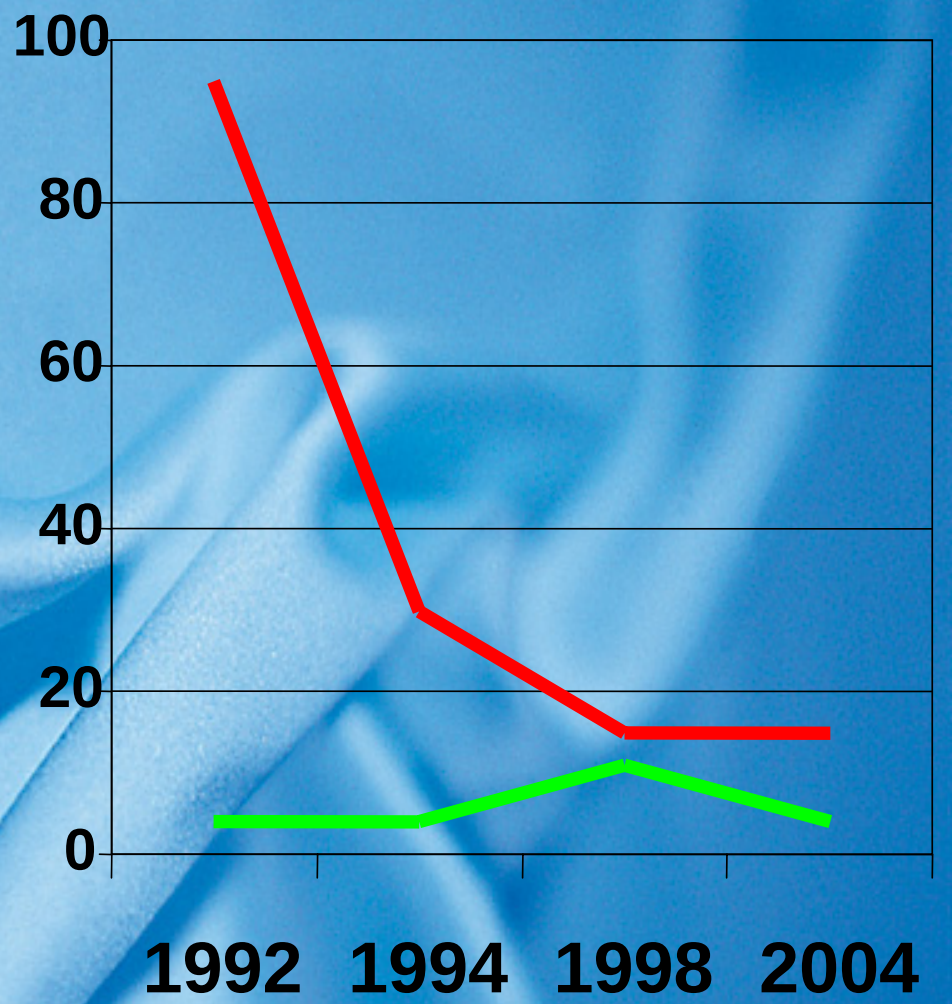
- Sri Lanka's epidemic limited
- Priorities:
  - Keep SW and MSM safe through large-scale, high quality programs
  - Establish early warning system to detect growth in IDU and build capacity to manage opiate addiction now

RECOMMENDATIONS:
HIV IN SOUTH ASIA CAN BE CONTAINED[1-1]

- South Asia's HIV epidemics can be curbed
- Have sufficient knowledge to tackle South Asia's epidemics - challenge is to sharpen focus and strengthen implementation

ENCOURAGING TRENDS IN TAMIL NADU AND KOLKOTA





Sources: NACO, 2005, UNAIDS, 2005

RECOMMENDATIONS: TWO-PRONGED APPROACH[(1-1)]

- Need two pronged approach
- First, implementing high quality, high coverage programs for major vulnerable groups
- Second, reducing stigma and addressing underlying structural determinants of epidemic


FIREFIGHTING

RECOMMENDATIONS:
HIV IN SOUTH ASIA CAN BE CONTAINED[1-1]

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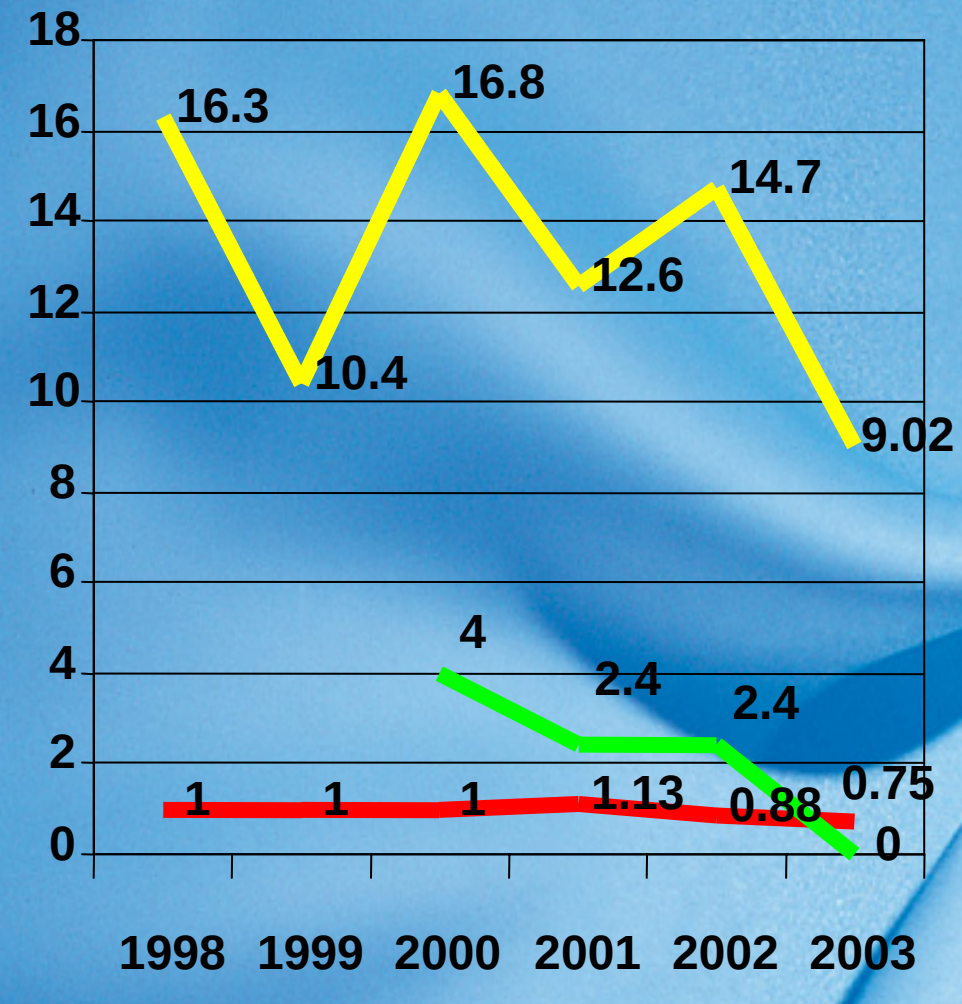

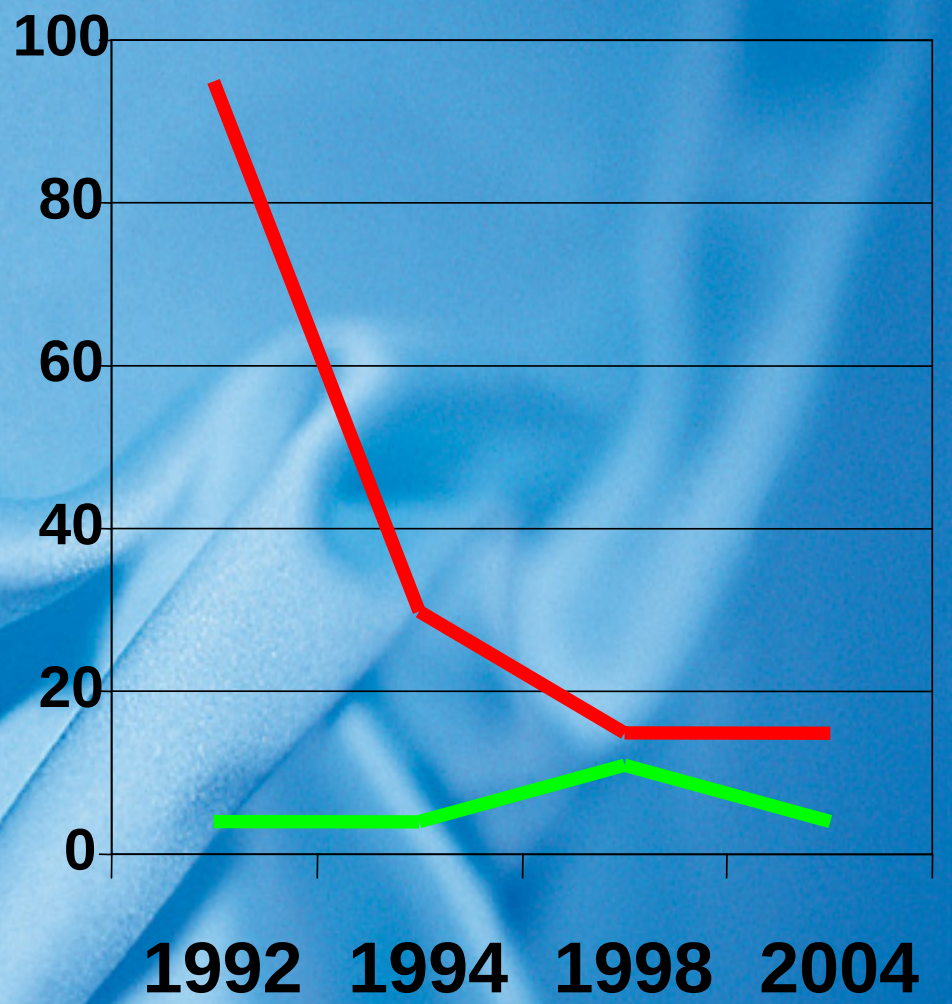

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FIREFIGHTING


AND FIREBREAKS

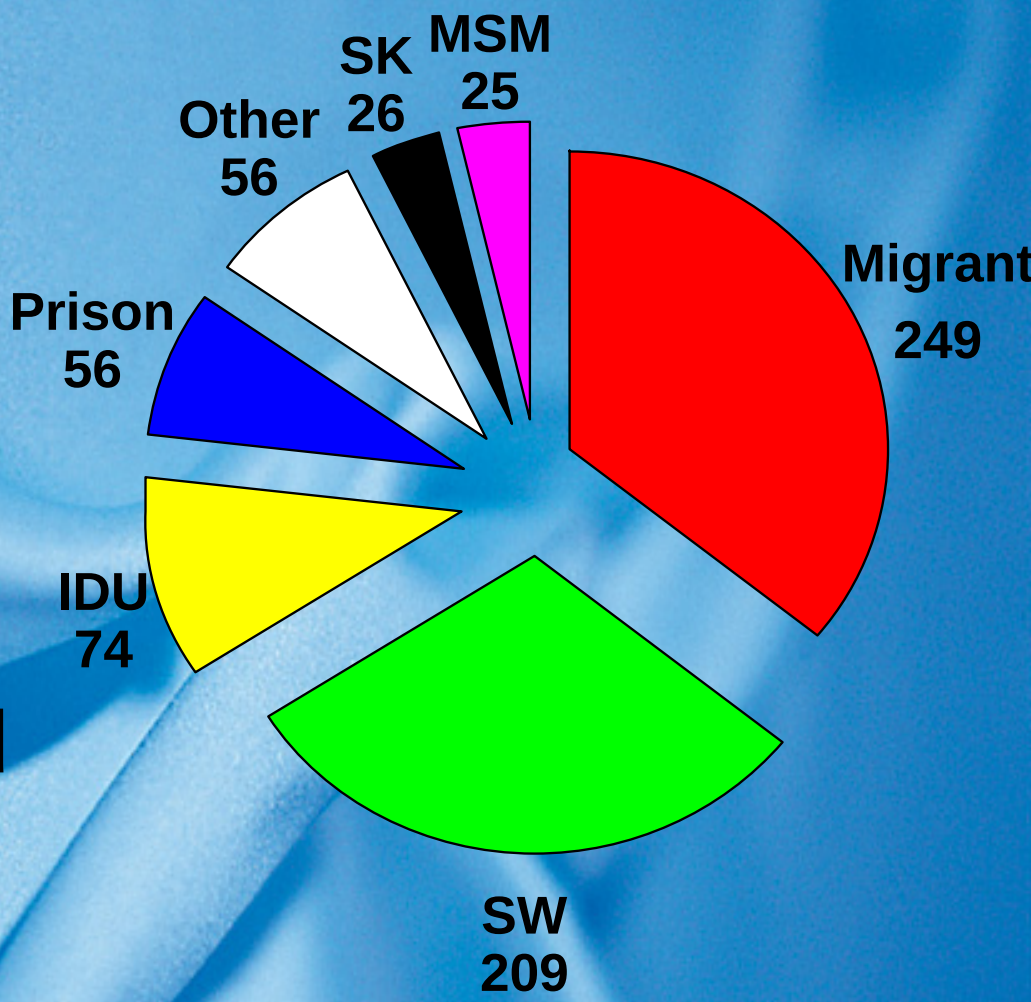

NOT ONE INFERNO BUT MANY LOCAL FIRES

RECOMMENDATIONS: FOCUS[1-2]

- Vital to understand heterogeneity of HIV and to focus – dissipation of focus major limitation of HIV programs – no wasted programming

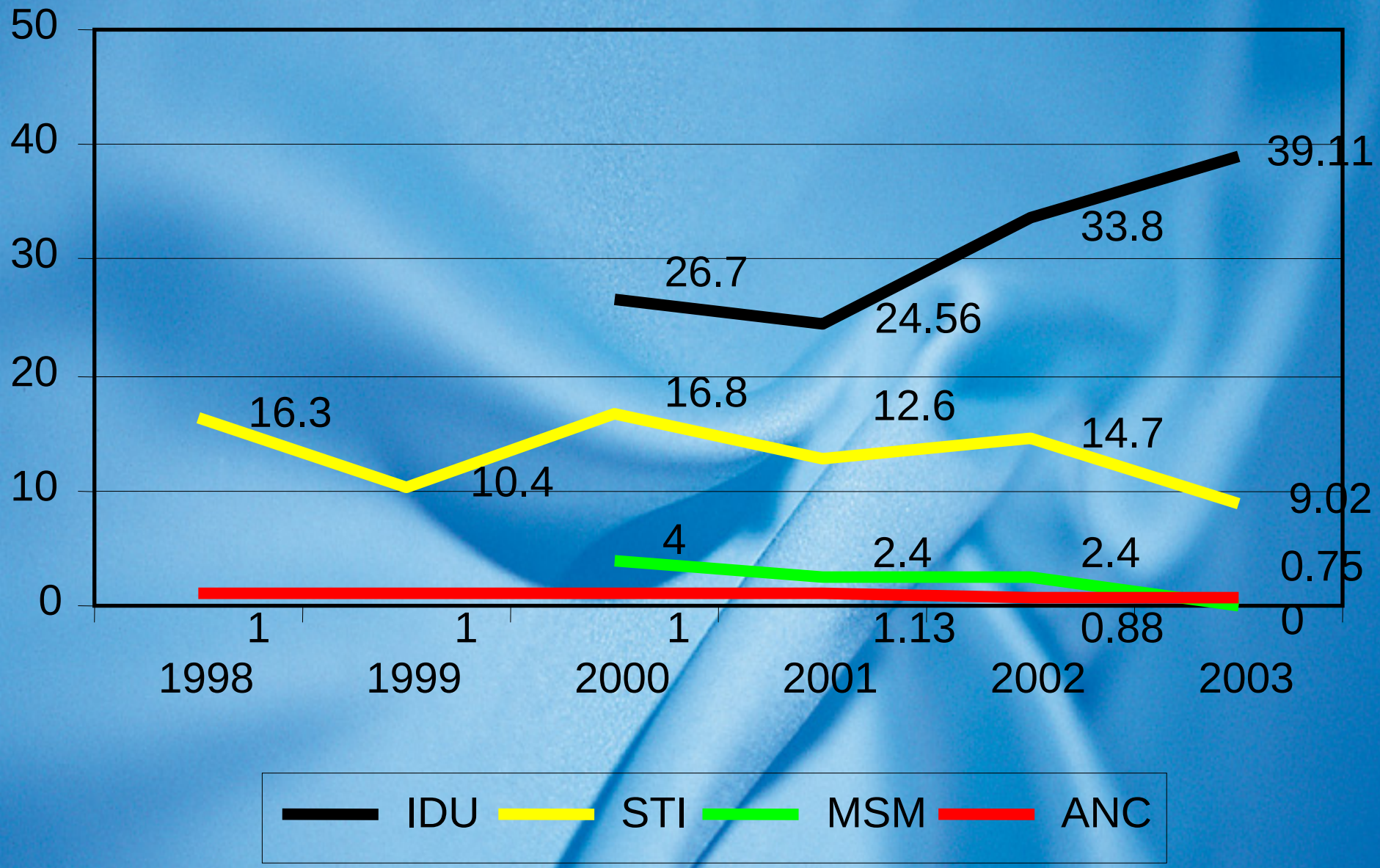
RECOMMENDATIONS: FOCUS(2-2)

- Thematic focus equally important
- India's NACO supports more interventions for migrants than SW - yet migrants have lower HIV rates and far fewer partners
- Too few MSM interventions



Sources: NACO, 2005

RECOMMENDATIONS: GREATER FOCUS ON IDU[1-1]



Sources: NACO, 2006

RECOMMENDATIONS GREATER FOCUS ON IDU(2-2)

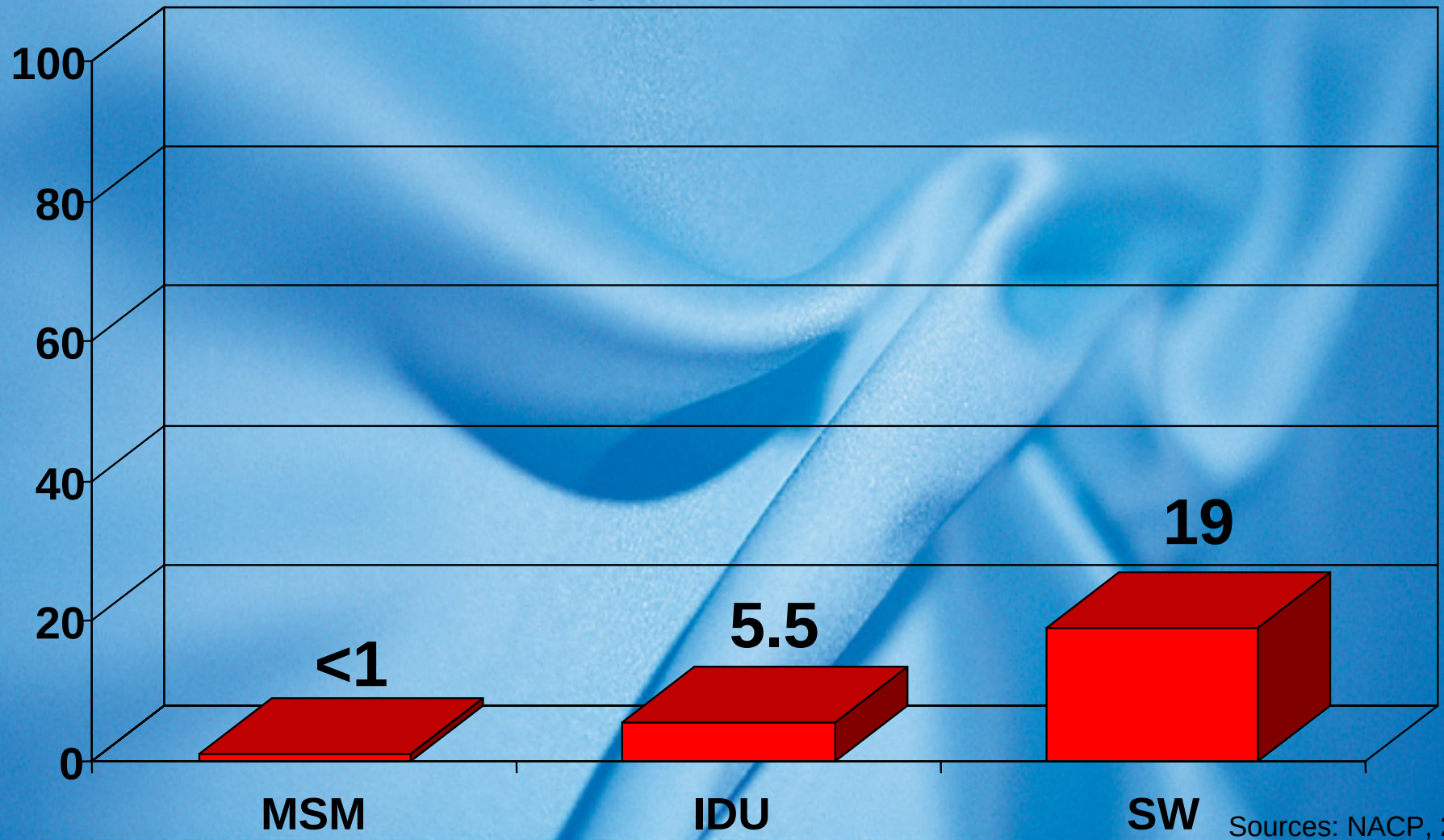
- Epidemic potential in North-East hugely influenced by effectiveness of IDU programs today

RECOMMENDATIONS: GREATER FOCUS ON MSM (1-1)

- MSM third pillar of epidemic and response – considerable MSM activity, increasing HIV rates, especially among *hijra* and MSW
- Yet, too little surveillance, analysis, modeling and programming – only 2% of Indian interventions

RECOMMENDATIONS: PROGRAM QUALITY AND COVERAGE[1-2]

- Across South Asia, coverage still low – especially among MSM



Sources: NACP, 2005

RECOMMENDATIONS PROGRAM QUALITY AND COVERAGE(2-2)

- Combine laser focus on highest prevalence areas and communities with commitment to expand coverage nationwide

- High coverage of adequate interventions better than low coverage of perfect interventions – small behavior change on large scale better than large behavior change on small scale

RECOMMENDATIONS STRUCTURAL INTERVENTIONS(1-1)

- Easier to achieve scale with contextual than individual level interventions - examples include:
  - Legal/policy interventions - protecting vulnerable groups and undocumented migrants, reducing trafficking, removing risk and stigma from carrying condoms or needles
  - Regulatory interventions - 100% condom use programs, regulating enterprises to mitigate induced risk
  - Institutional interventions - institutionalizing safe injecting rooms, detoxification and substitution programs
  - Market interventions - liberalizing needle or condom sales, subsidized condom, syringe or bleach social marketing programs
  - Voucher programs - for needles, STI or BBV treatment
  - Normative interventions – to promote safer sexual and gender norms

RECOMMENDATIONS RURAL PROGRAMMING(1-1)

- Growing evidence of rural epidemics – greater focus on rural programming vital

CONCLUSION[1-2]

- HIV in South Asia eminently preventable – 99.6% of South Asians uninfected
- Notwithstanding challenges, South Asia deserves credit for growing commitment and action
- With better use of existing knowledge, focus, implementation and coverage, HIV containable

CONCLUSION(2-2)

- The core challenge for policy makers and economists working on AIDS in Asia
- How to convince governments to invest in programs to protect vulnerable groups – injecting drug users, sex workers and men having sex with men