

Treatment as Prevention

The beginning of “The End of AIDS”

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Jamaican Delegation Debrief

November 28th, 2012



BRITISH COLUMBIA
CENTRE *for* EXCELLENCE
in HIV/AIDS

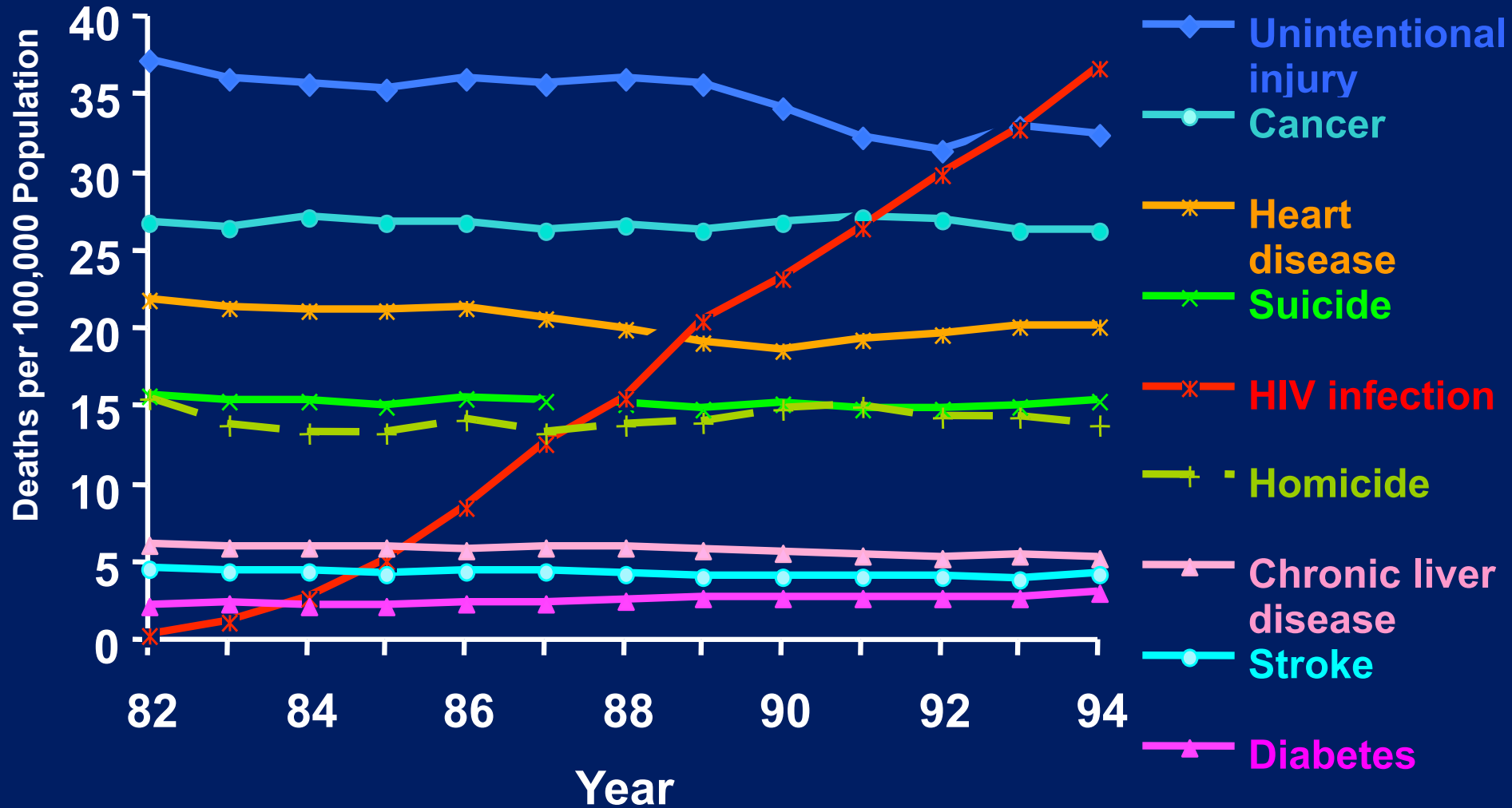


a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

Providence
HEALTH CARE
How you want to be treated.

USA - Trends in Annual Rates of Death

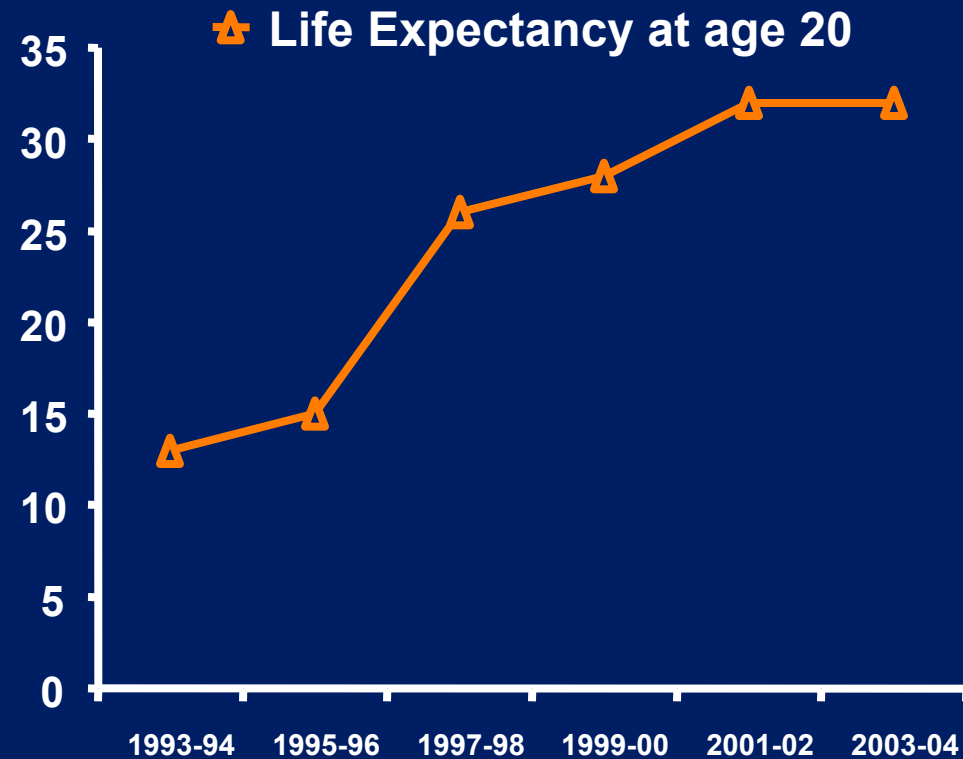
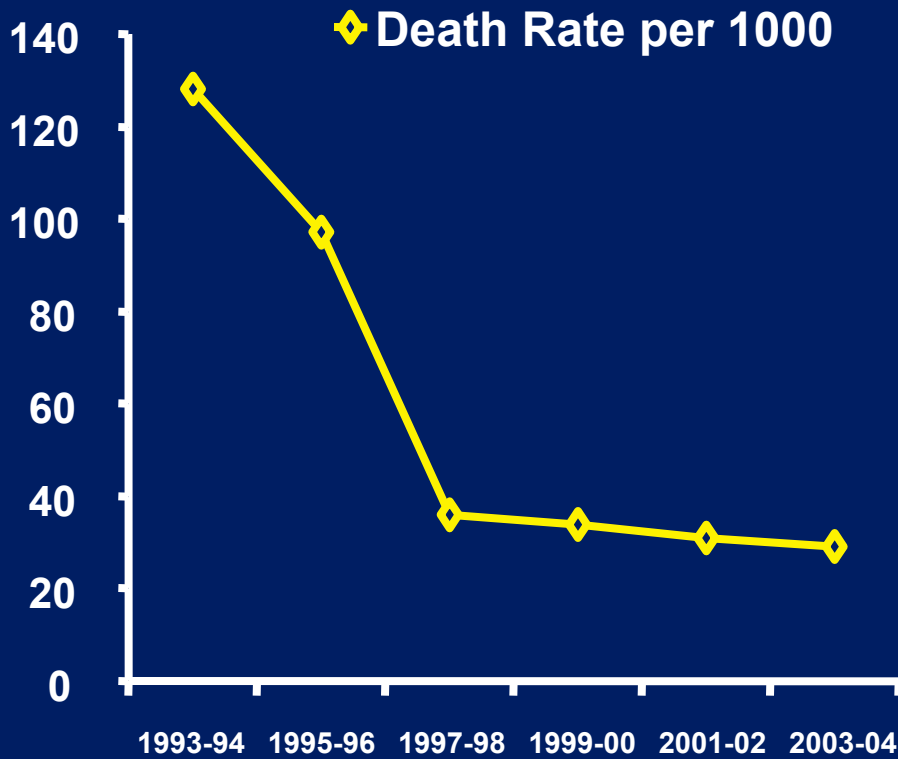
Ages 25 to 44



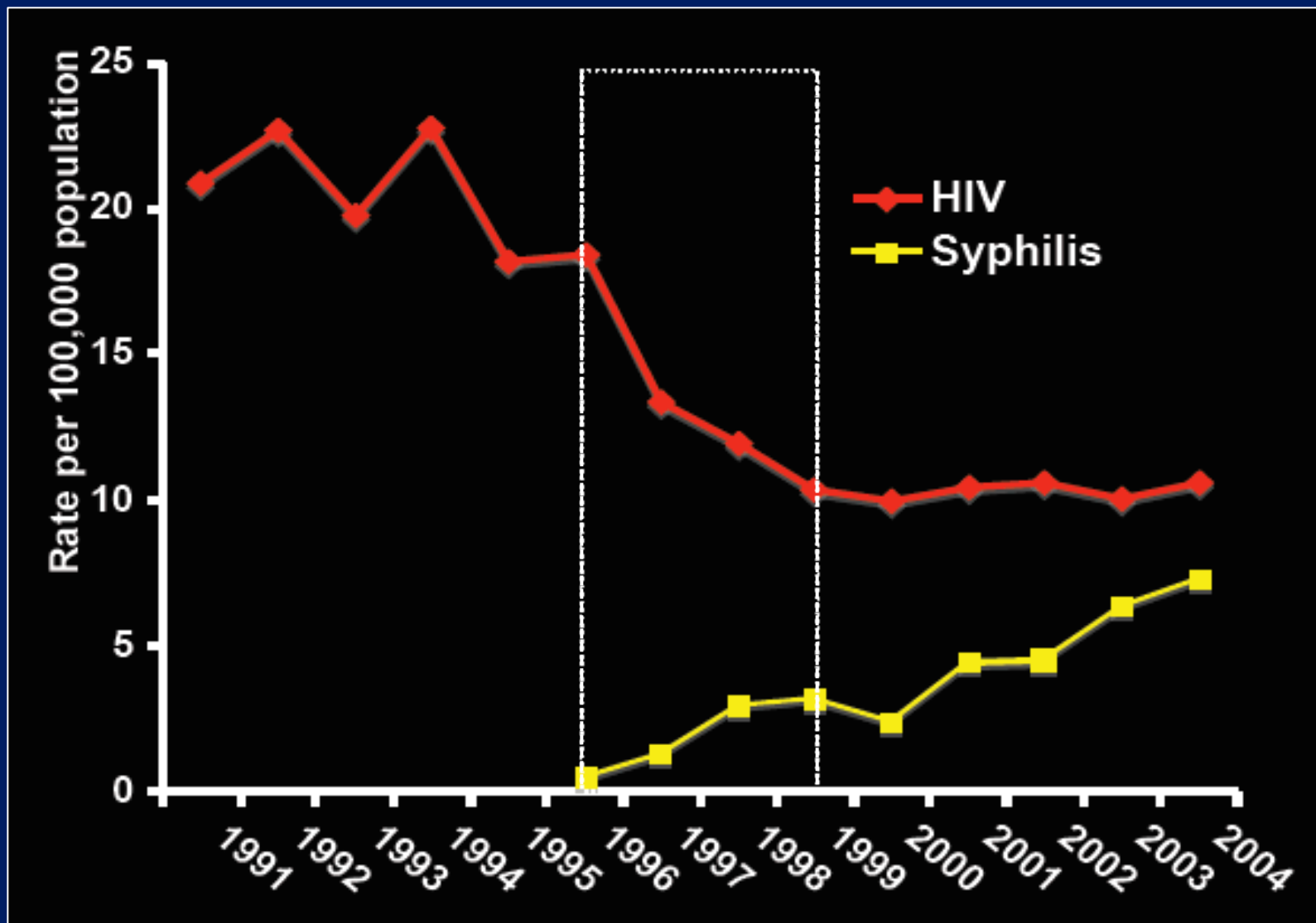
Vancouver 1996
“One World One Hope”



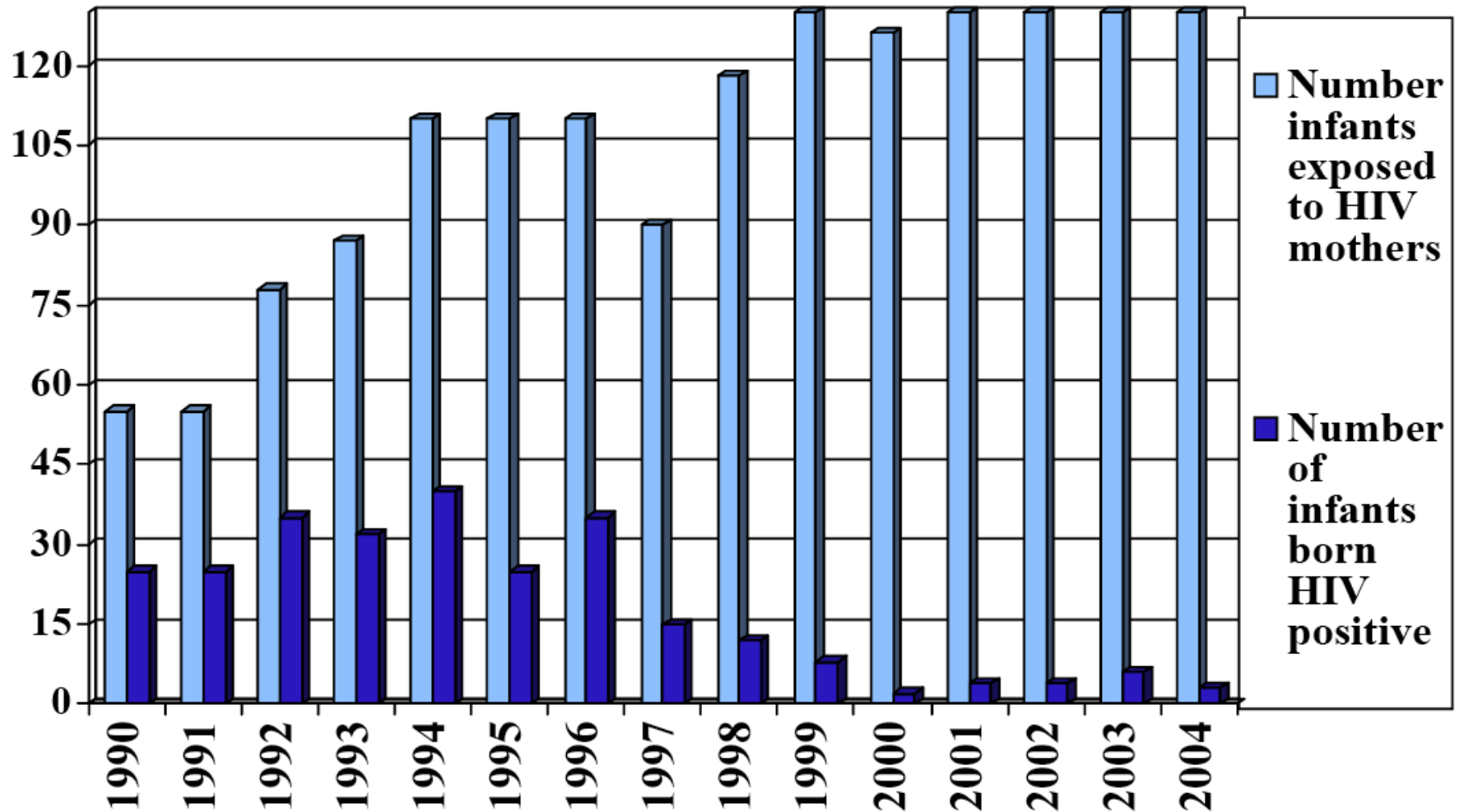
Impact of HAART in BC-CfE



New HIV and Syphilis in BC



Canada: Infants Exposed to HIV and Born HIV Positive



The case for expanding access to highly active antiretroviral therapy to curb the growth of the HIV epidemic

Julio S G Montaner, Robert Hogg, Evan Wood, Thomas Kerr, Mark Tyndall, Adrian R Levy, P Richard Harrigan

“The upshot of this widespread failure to recognize that AIDS is an exceptional crisis and threat is that the response to the pandemic is not made commensurate to the challenges—and so the epidemic escalates even while it erodes our capacities to check it.”

Dr Peter Piot, UNAIDS Executive Director¹



The case for expanding access to highly active antiretroviral therapy to curb the growth of the HIV epidemic

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HAART stops HIV replication



HIV load falls to undetectable levels in plasma
as well as in sexual fluids



Sharp reduction in HIV transmission

AUGUST 5, 2008

Clinton Urges More AIDS Efforts

By MARILYN CHASE

MEXICO CITY -- Former U.S. President Bill Clinton, fresh from a tour of his foundation's projects in Africa, took the stage of the International AIDS Conference here to tell thousands that "we must do more."

"AIDS is a big dragon," Mr. Clinton said Monday, but unlike the mythical dragon slain by St. George, "this dragon must be slain by millions and millions of foot soldiers."



Bill Clinton

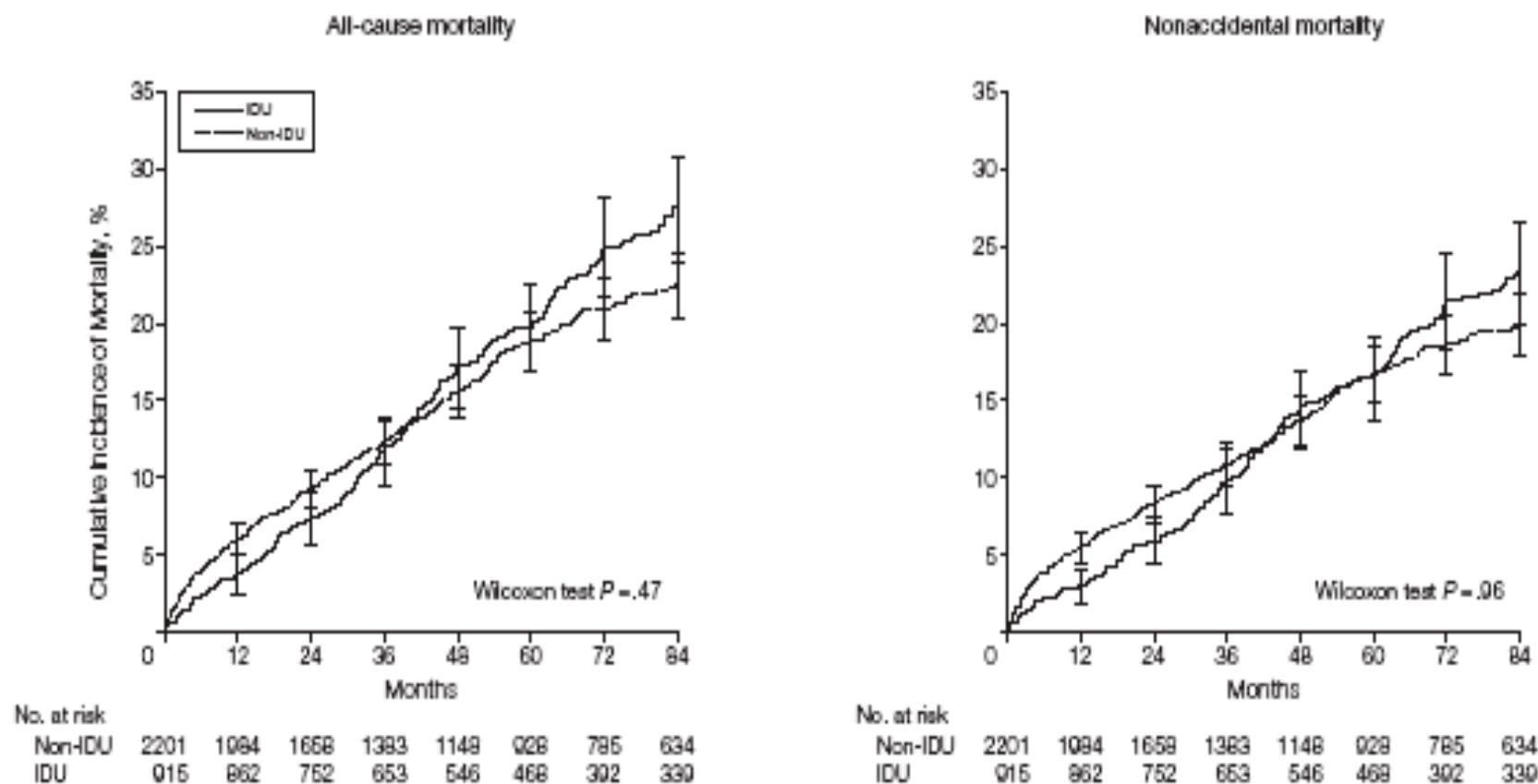
Until there is a vaccine, Mr. Clinton said, studies show that suppressing blood levels of HIV with potent antivirals can help block the disease's transmission. The Chair of AIDS Research at the University of British Columbia, Julio Montaner, who is the incoming president of the International AIDS Society that sponsors this conference, is a leading champion of using drugs as preventatives.

HAART Outcomes among Injection Drug Users

The Vancouver Experience

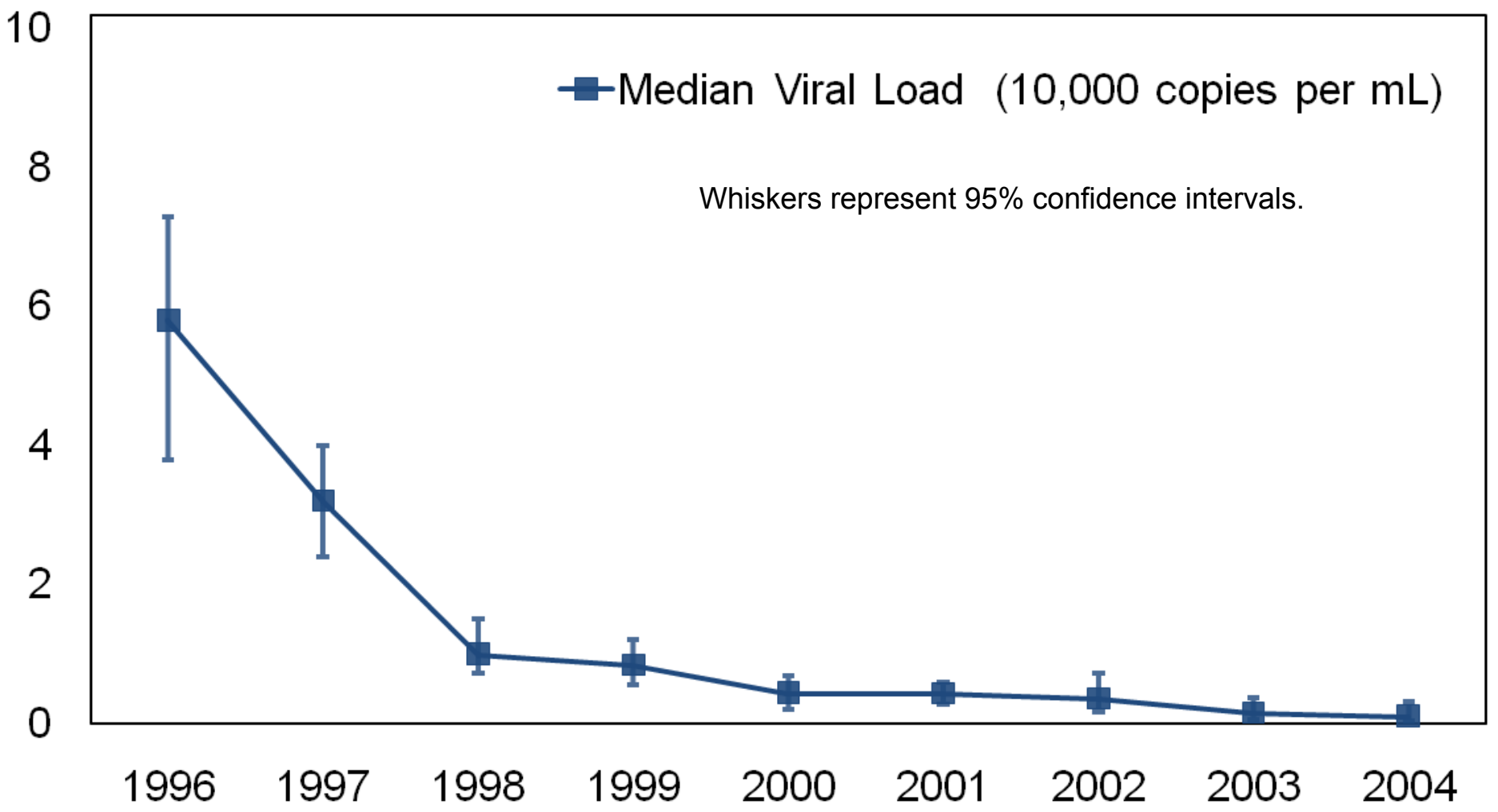
Highly Active Antiretroviral Therapy and Survival in HIV-Infected Injection Drug Users

Figure. Mortality Rate Among 3116 Antiretroviral-Naive Patients Initiating HAART

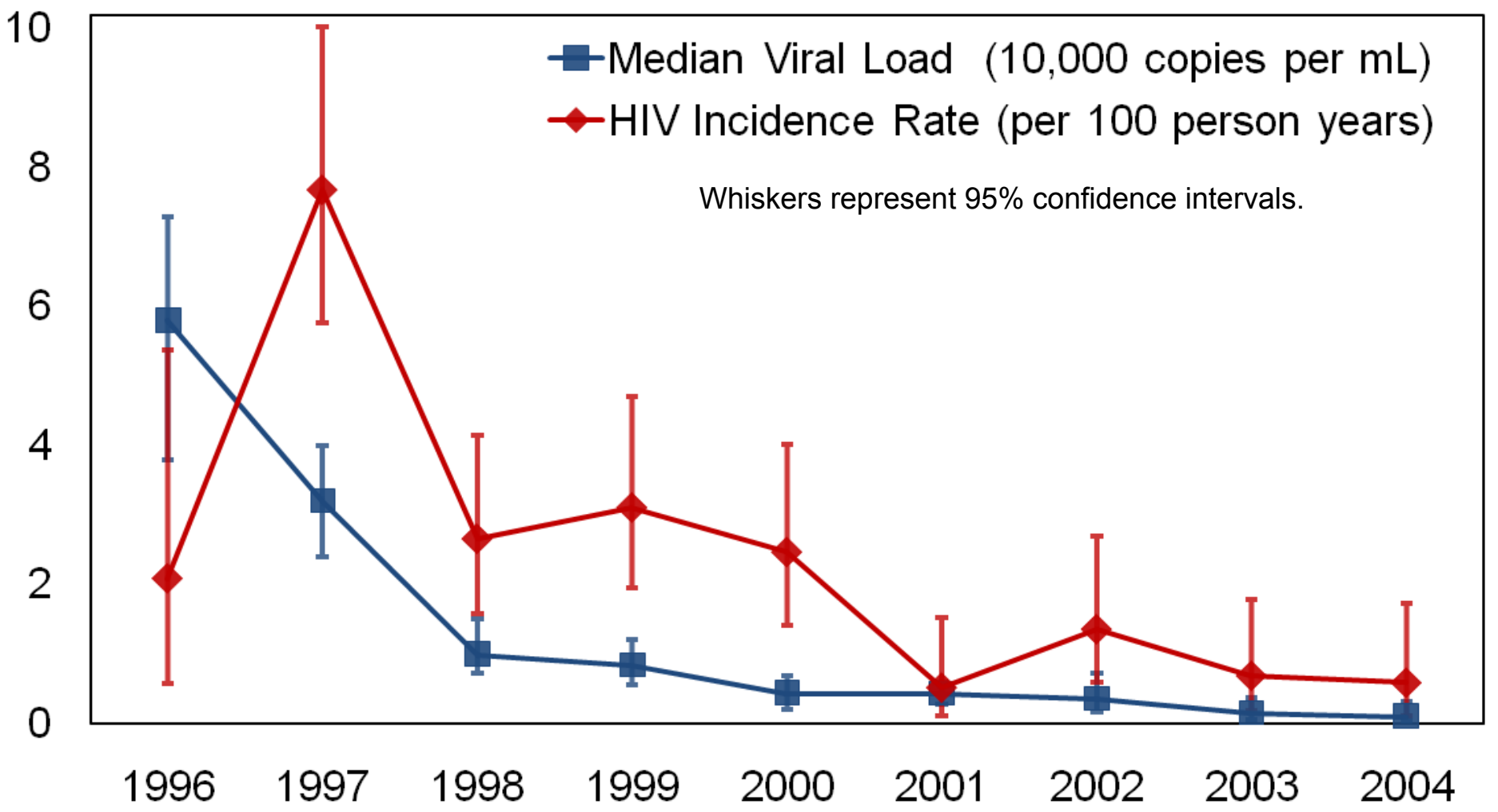


Overall, there were 622 deaths and the analysis of nonaccidental mortality censored 87 deaths (14.0%) as nonevents among which 62 deaths (71.2%) were accidental poisonings, 16 were suicides (18.3%), 6 were traumas (<0.1%), and 3 were classified as other (<0.1%). Survival curves were compared using the Wilcoxon test and all follow-up data for all participants. Error bars indicate 95% confidence intervals; HAART, highly active antiretroviral therapy; IDU, injection drug user.

Longitudinal community plasma HIV-1 RNA concentrations and incidence of HIV-1 among injecting drug users: prospective cohort study



Longitudinal community plasma HIV-1 RNA concentrations and incidence of HIV-1 among injecting drug users: prospective cohort study

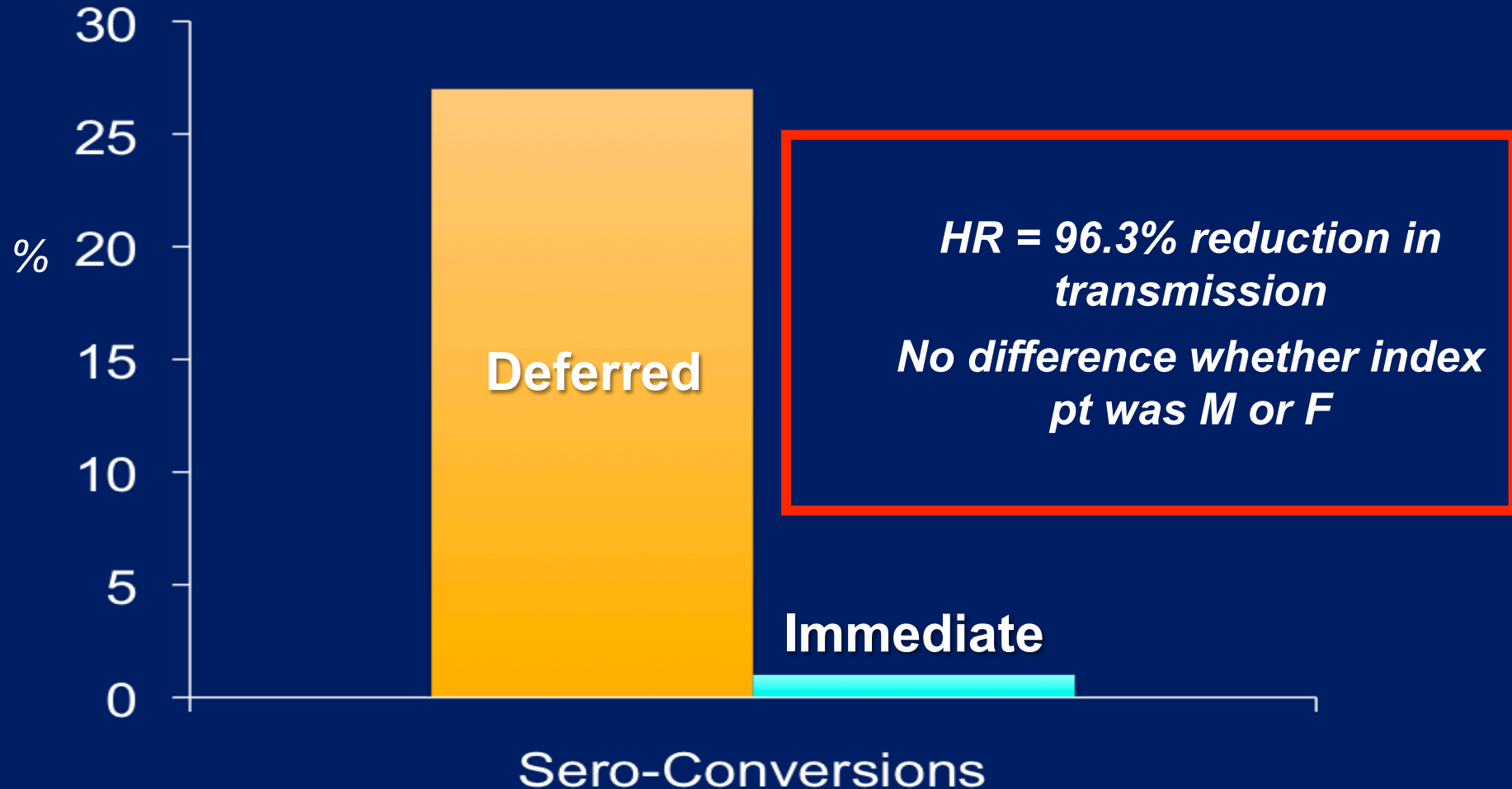


HAART Reduces HIV incidence in IDUs

- From 1997, HIV incidence decreased by 74% for each log decline in community HIV viral load
- In a separate model, HIV incidence decreased by 5% for each 1% increase in HAART coverage

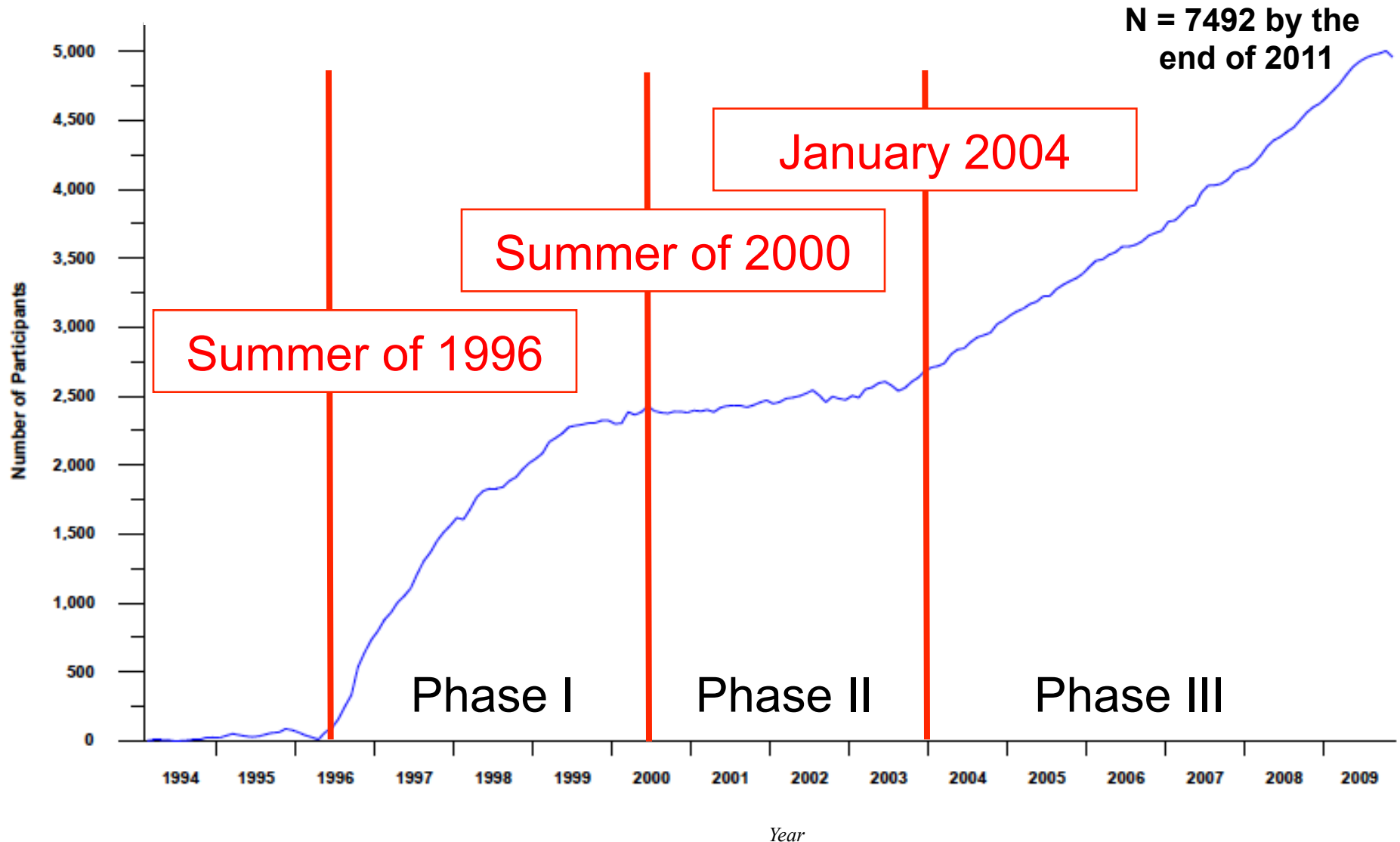
TasP in Serodiscordant Couples

HPTN 052: Immediate vs Delayed ART in Sero-discordant Couples



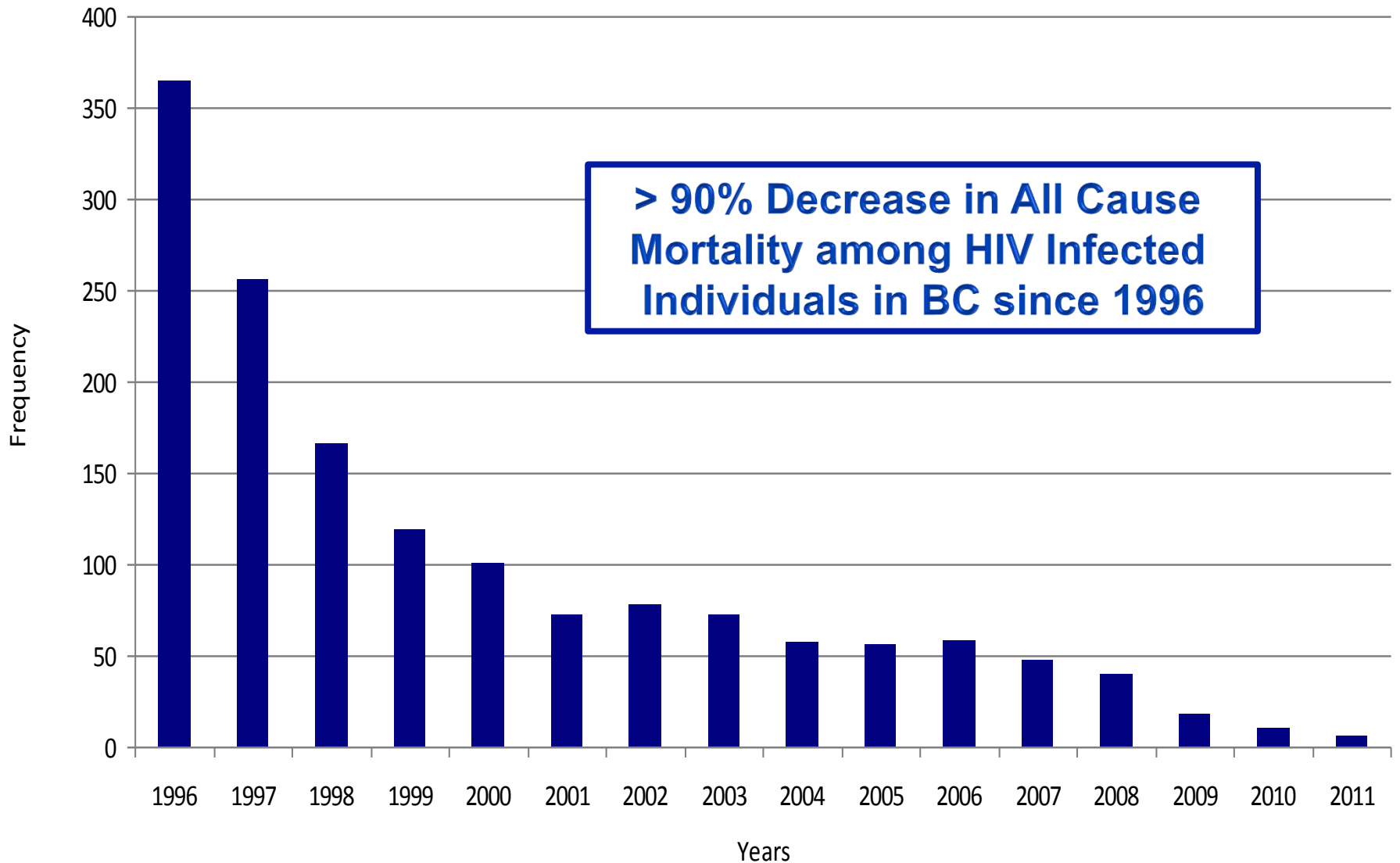


Increasing HAART Coverage within Evolving Guidelines in BC





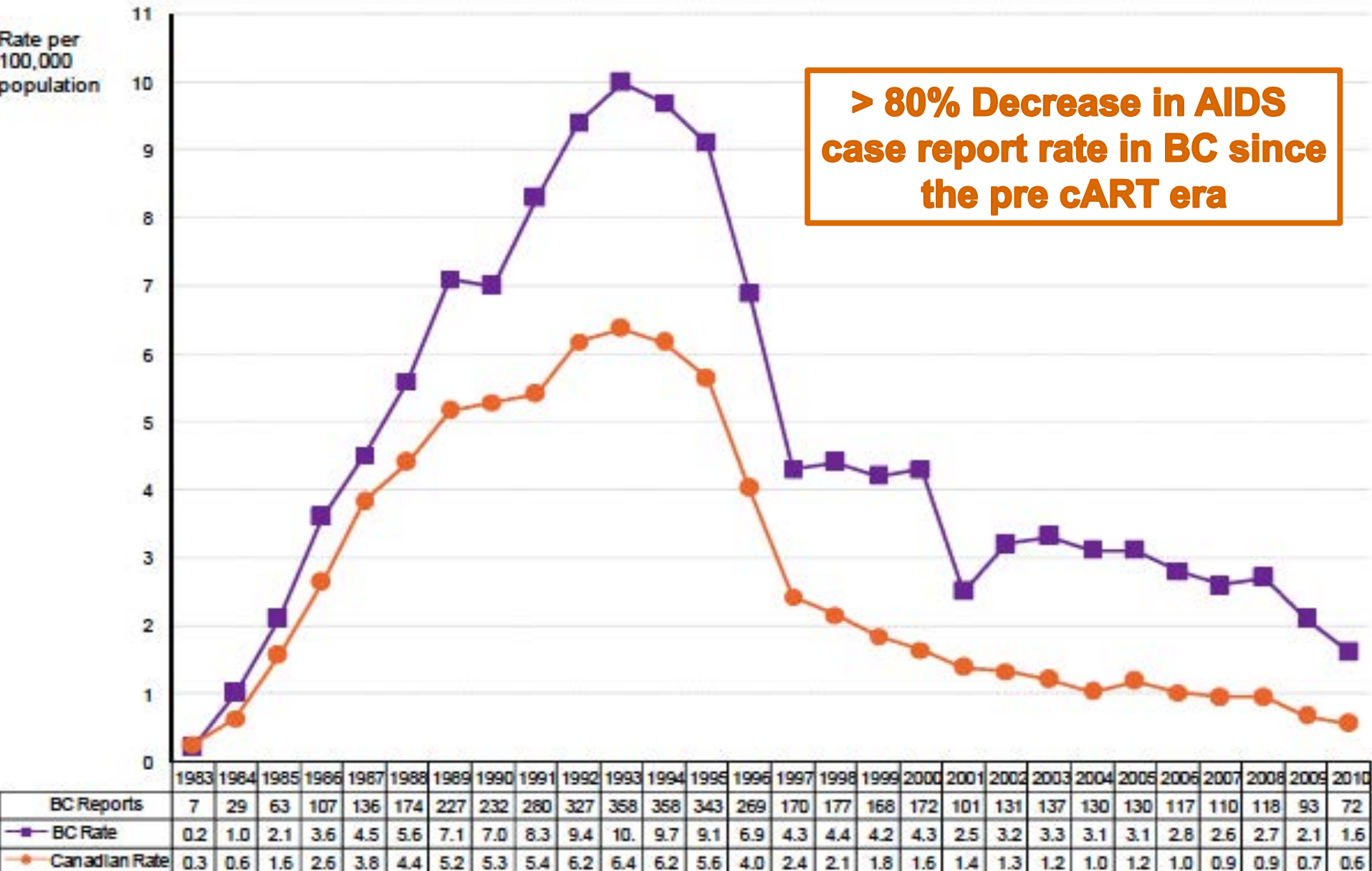
BC: All Cause Mortality (#)





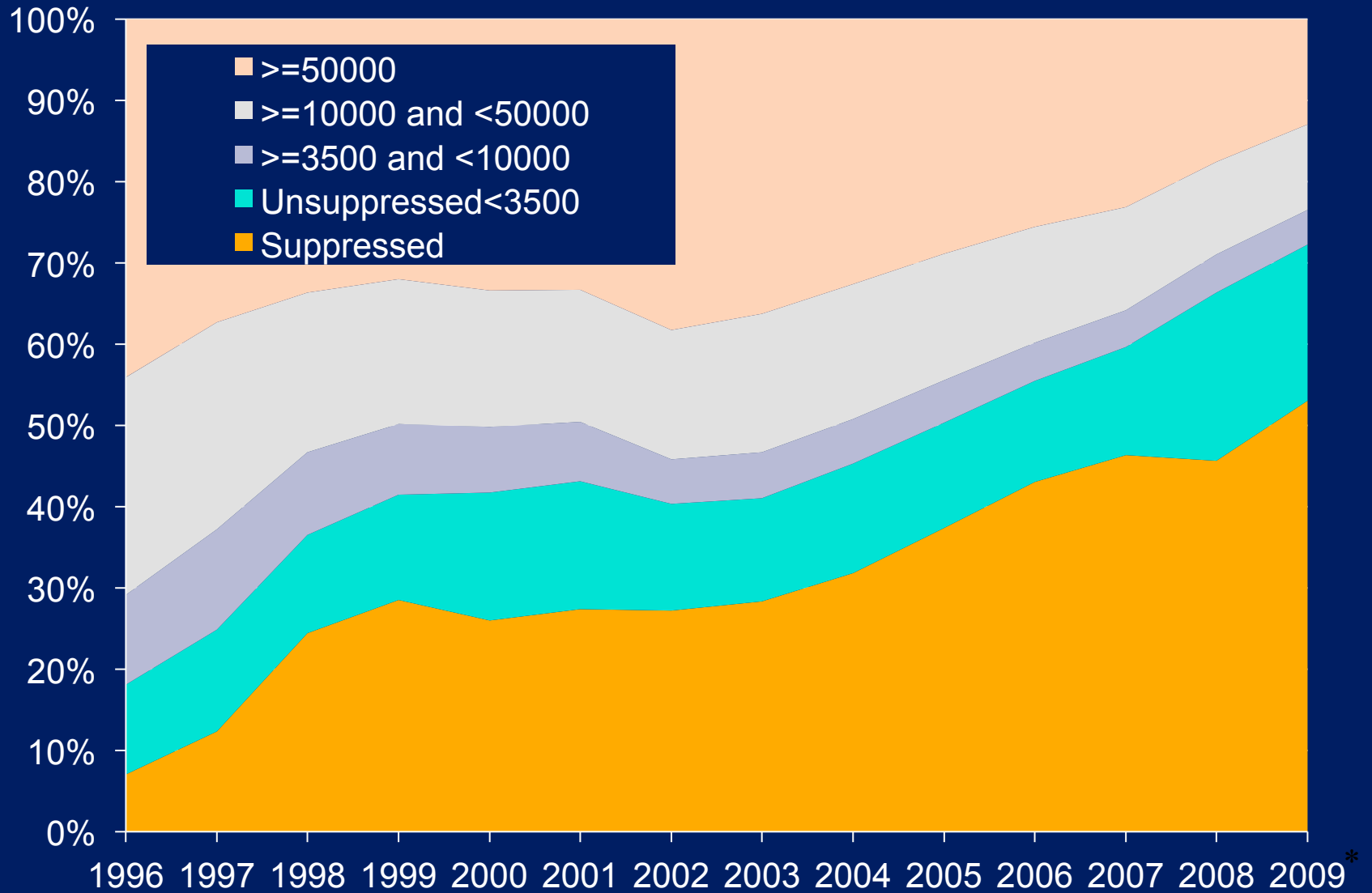
BC: AIDS cases Diagnosed

(Rate per 100K)

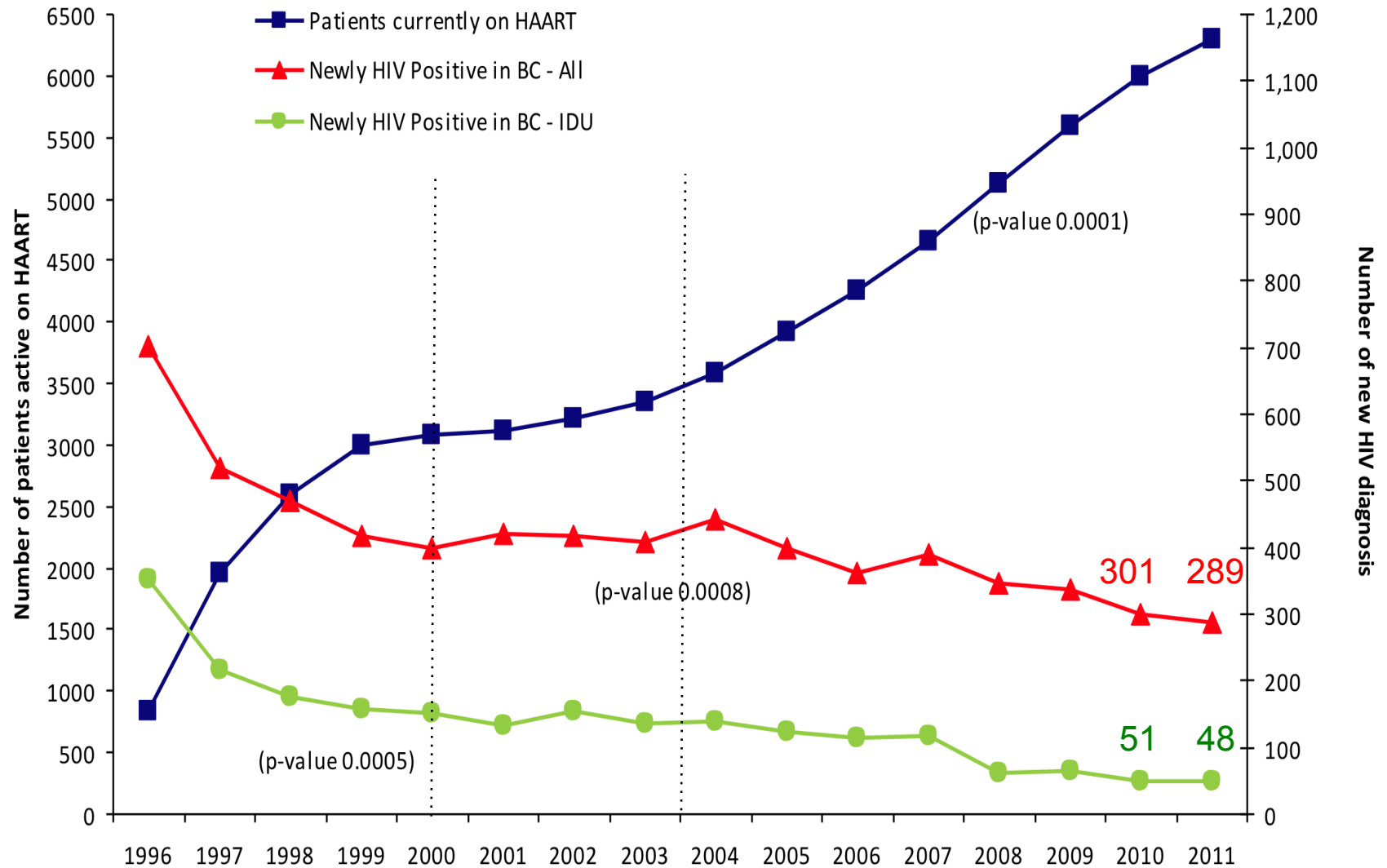




Cascade of Care- HIV-RNA levels

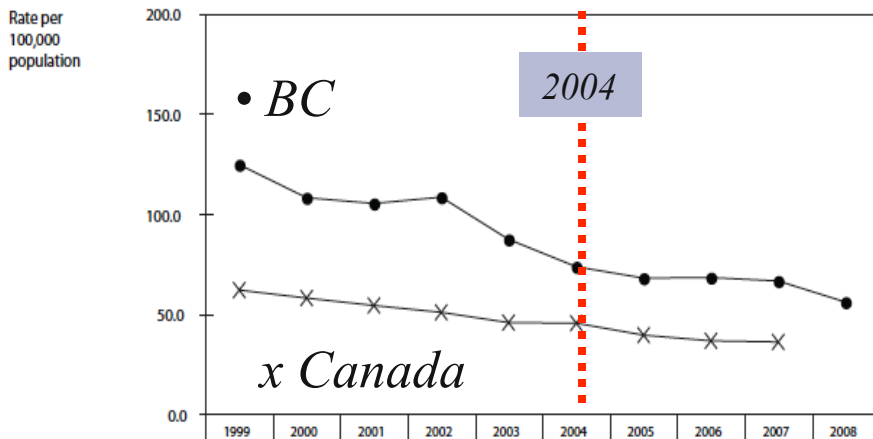


Increasing HAART Coverage within Evolving Guidelines in BC - Impact on New Diagnoses



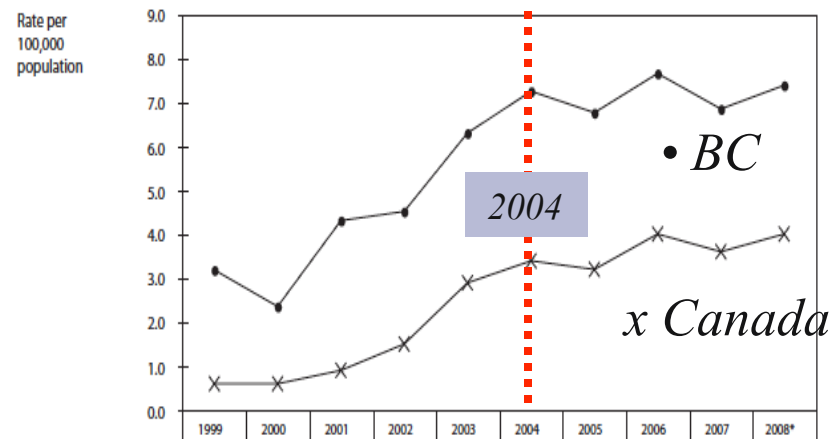
Updated from Montaner et al, Lancet, 2010, presented at TasP-Workshop, Vancouver 2012

Hepatitis C, 1999-2008



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
BC Hepatitis C Reports	4984	4359	4282	4446	3617	3086	2879	2935	2898	2479
● BC Hepatitis C Rate	124.3	107.9	105.0	108.0	87.0	73.4	67.6	67.9	66.2	55.8
✕ Canadian Hepatitis C Rate	61.7	57.8	54.1	50.7	45.5	45.1	39.3	36.5	35.8	

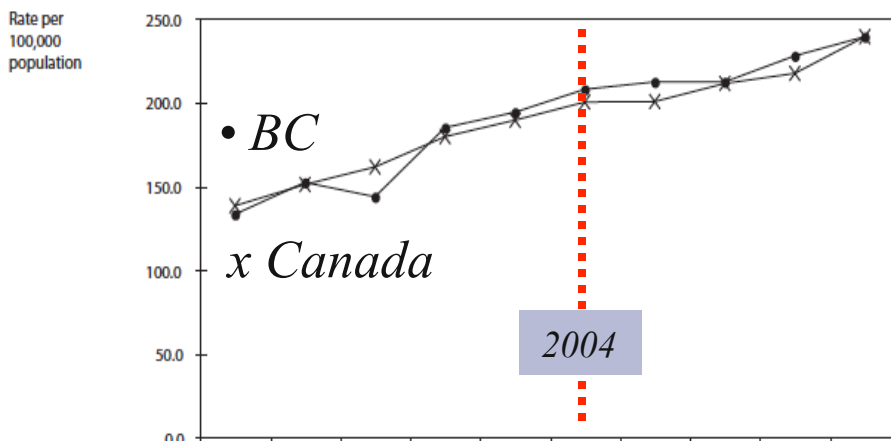
Infectious Syphilis, 1999-2008



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008*
BC Syphilis Reports	128	95	176	186	262	305	288	331	300	328
● BC Syphilis Rate	3.2	2.4	4.3	4.5	6.3	7.3	6.8	7.7	6.8	7.4
✕ Canadian Syphilis Rate	0.6	0.6	0.9	1.5	2.9	3.4	3.2	4.0	3.6	4.0

*2008 Canadian rate is projected and is subject to change (Public Health Agency of Canada, 2009).

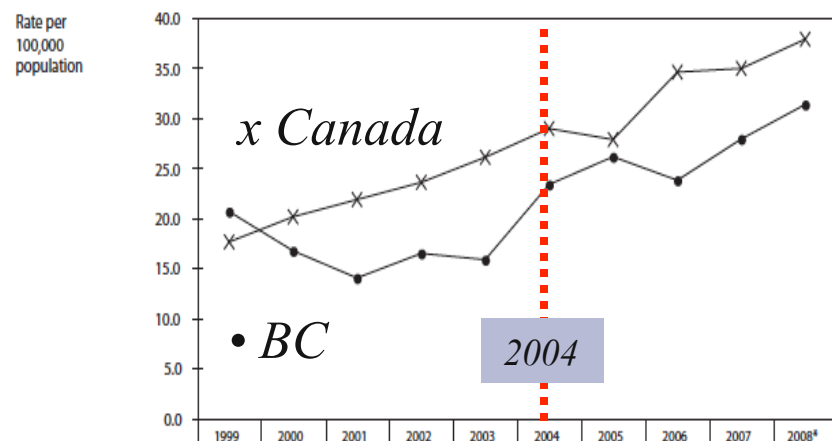
Genital Chlamydia, 1999-2008



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008*
BC Chlamydia Reports	5,343	6,150	5,855	7,603	8,071	8,733	9,045	9,172	9,971	10,629
● BC Chlamydia Rate	133.2	152.3	143.6	184.7	194.2	207.7	212.3	212.3	227.6	239.3
✕ Canadian Chlamydia Rate	138.2	150.9	161.4	179.4	189.4	200.1	200.4	211.4	217.3	239.3

2008 Canadian rate is projected and is subject to change (Public Health Agency of Canada, 2009).

Gonorrhoea, 1999-2008



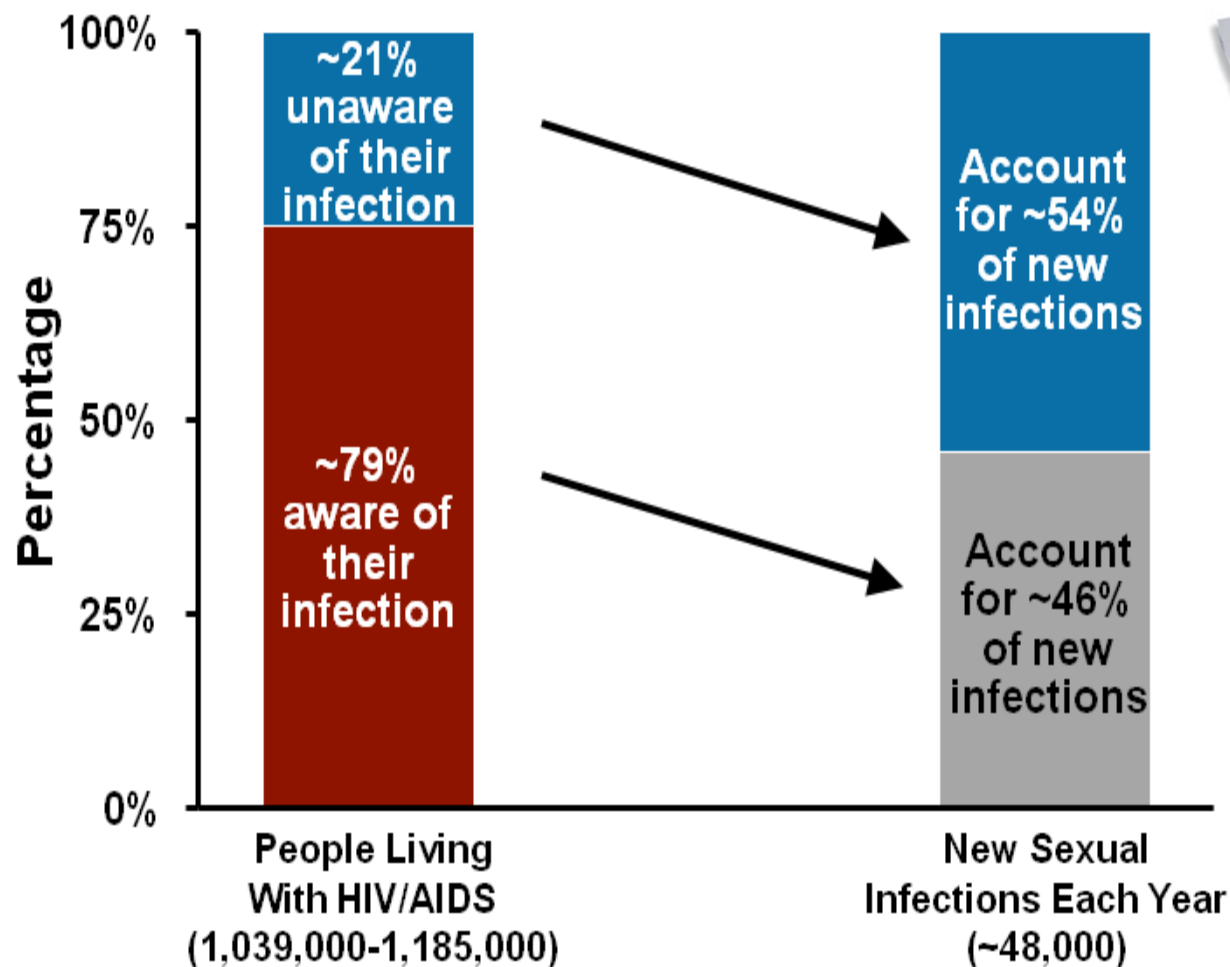
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008*
BC Gonorrhoea Reports	827	675	571	675	656	979	1,111	1,026	1,220	1,391
● BC Gonorrhoea Rate	20.6	16.7	14.0	16.4	15.8	23.3	26.1	23.7	27.9	31.3
✕ Canadian Gonorrhoea Rate	17.6	20.1	21.8	23.5	26.0	28.9	27.8	34.5	34.9	37.8

*2008 Canadian rate is projected and is subject to change (Public Health Agency of Canada, 2009).



HIV Testing

Majority of HIV Transmissions From People Unaware of Their Infection





HIV Treatment



WHO Guidance on couples HIV testing and counselling

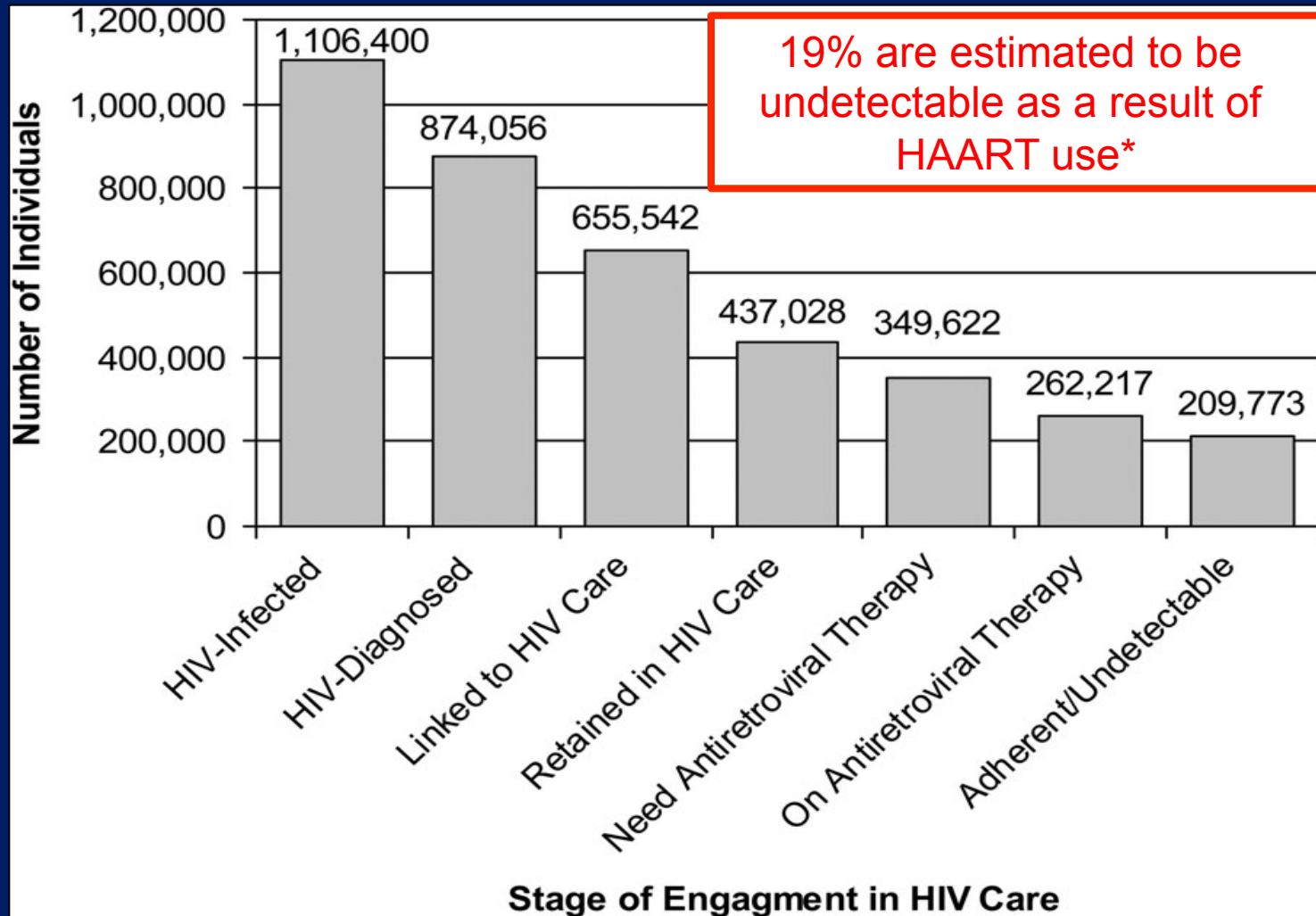
RECOMMENDATIONS

1. Couples and partners should be offered voluntary HIV testing and counselling with support for mutual disclosure. *Strong recommendation, low-quality evidence.*
2. Couples and partners in antenatal care settings should be offered voluntary HIV testing and counselling with support for mutual disclosure. *Strong recommendation, low-quality evidence.*
3. Couples and partner voluntary HIV testing and counselling with support for mutual disclosure should be offered to individuals with known HIV status and their partners. *Strong recommendation, low-quality evidence for all people with HIV in all epidemic settings / Conditional recommendation, low-quality evidence for HIV-negative people depending on country-specific HIV prevalence.*
4. People with HIV in serodiscordant couples and who are started on antiretroviral therapy (ART) for their own health should be advised that ART is also recommended to reduce HIV transmission to the uninfected partner. *Strong recommendation, high-quality evidence.*
5. HIV-positive partners with >350 CD4 cells/ μ L in serodiscordant couples should be offered ART to reduce HIV transmission to uninfected partners. *Strong recommendation, high-quality evidence.*

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Strong recommendation, high quality evidence.

Spectrum of Engagement in care - USA

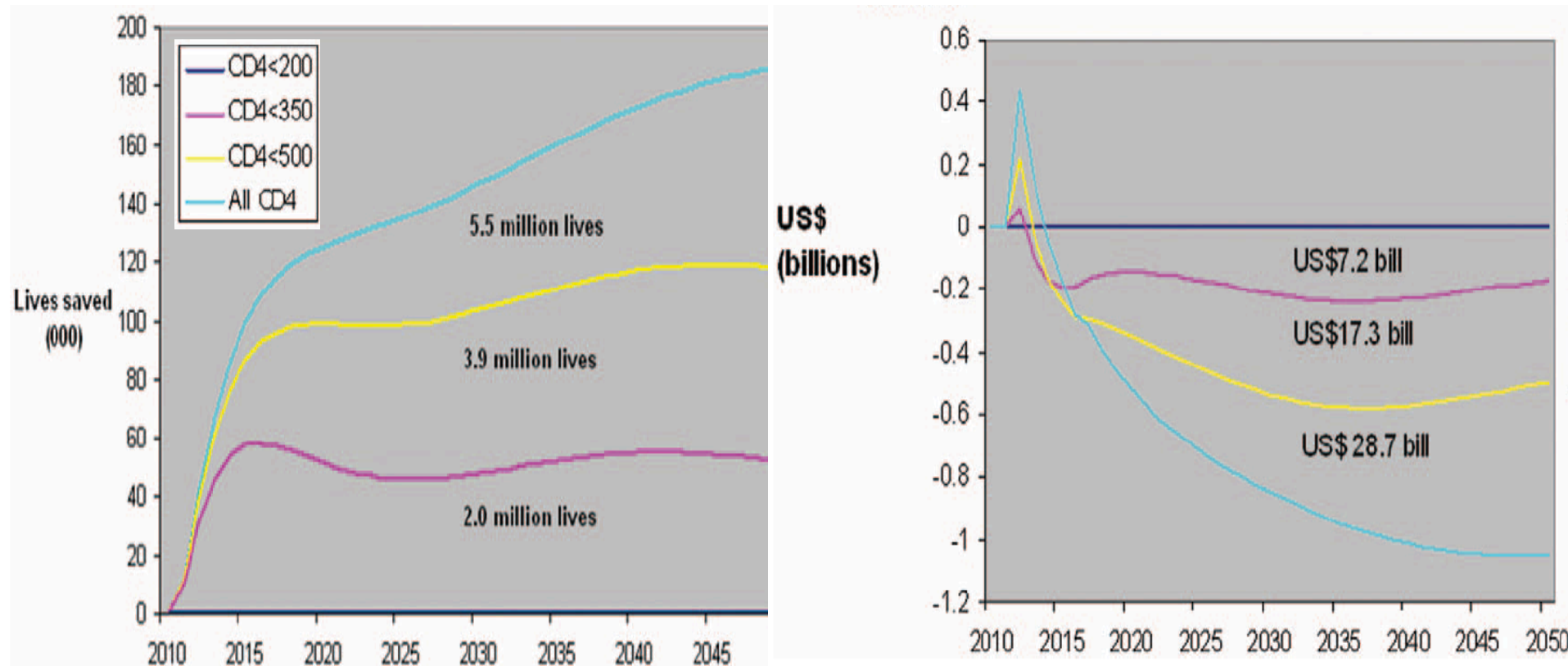


* More recently CDC-USA revised the estimate to 28%

Let's talk about \$\$\$

Expanding ART for Treatment and Prevention of HIV in South Africa: Estimated Cost and Cost-Effectiveness 2011-2050

Reuben Granich^{1*}, James G. Kahn², Rod Bennett³, Charles B. Holmes⁴, Navneet Garg⁵, Celicia Serenata⁶, Miriam Lewis Sabin¹, Carla Makhlof-Obermeyer¹, Christina De Filippo Mack⁷, Phoebe Williams¹, Louisa Jones¹, Caoimhe Smyth¹, Kerry A. Kutch¹, Lo Ying-Ru¹, Marco Vitoria¹, Yves Souteyrand¹, Siobhan Crowley¹, Eline L. Korenromp^{8,9}, Brian G. Williams¹⁰



Antiretroviral prophylaxis: a defining moment in HIV control

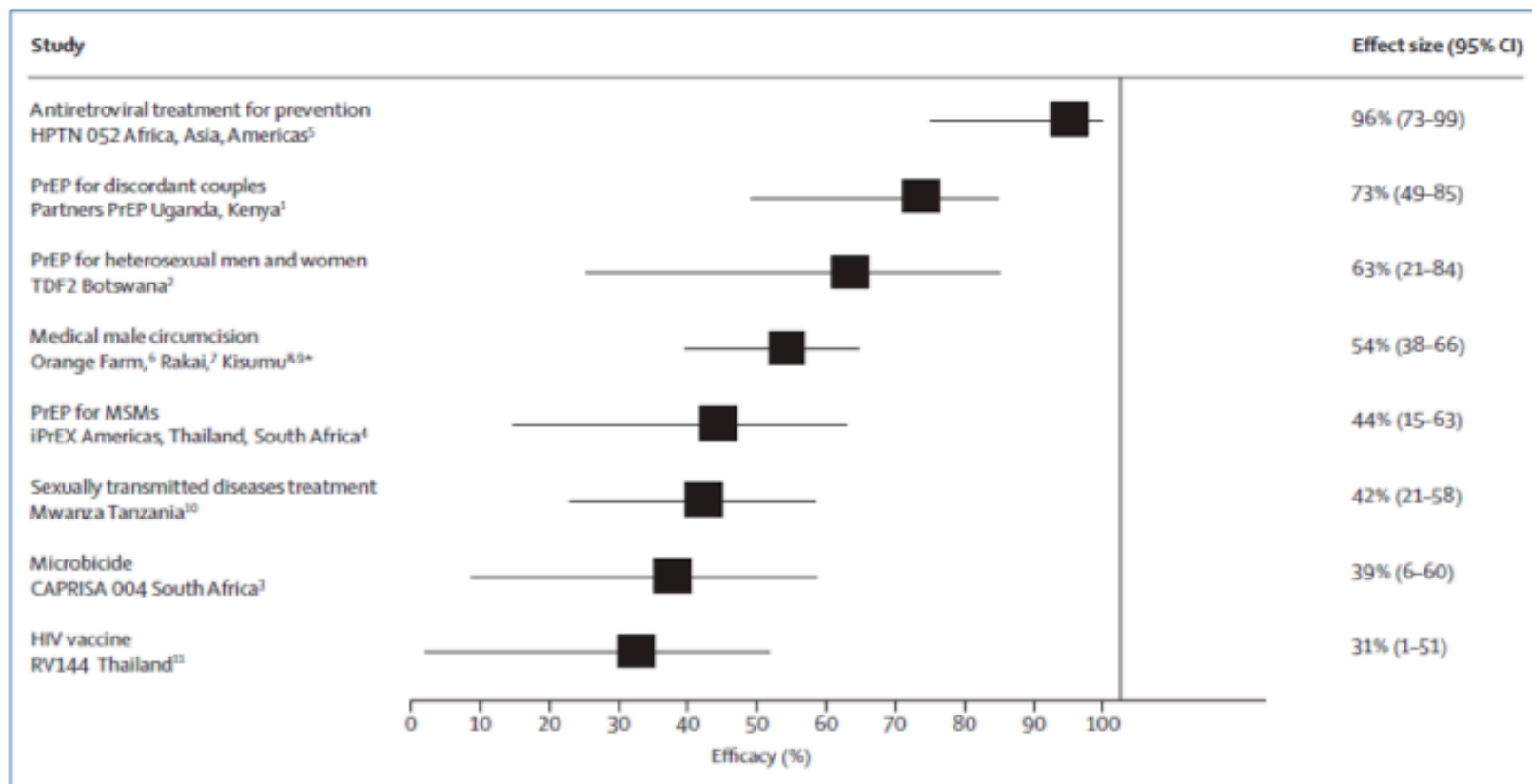


Figure: HIV prevention technologies shown to be effective in reducing HIV incidence in randomised controlled trials¹⁻¹¹

PrEP=Pre-exposure prophylaxis. *Meta-analysis of circumcision trials.

ZERO NEW INFECTIONS—TREATMENT FOR EVERYONE WHO NEEDS IT

LETTER TO PARTNERS | 2010



Michel Sidibé
Executive Director
UNAIDS

**Treatment 2.0:
A new
prevention-
treatment
paradigm in the
global response
to HIV/AIDS**

**UNGASS
New York - 9 June 2010**

The role of antiretroviral treatment in stopping new infections and how it can be effectively used as part of combination HIV prevention approaches must be further explored, as shown by Dr Julio Montaner, President of the International AIDS Society.



Few could have imagined that we'd be talking about the real possibility of an AIDS-free generation. But that's what we're talking about...make no mistake, we are going to win this fight.

President Obama, December 1, 2011

PS: By the end of 2013, PEPFAR will directly support more than 6 M people on HAART— 2M more than previously targeted.



"To cut new infections in half, we'll have to heed Julio Montaner's years of pleas to implement Treatment as Prevention and implement combination prevention programs. We can save a lot of lives if all this is done..."

President Clinton, Washington AIDS Conference, 2012



BRITISH COLUMBIA CENTRE *for* EXCELLENCE *in* HIV/AIDS



In Collaboration with PHC, VCHA,
NHA, PHSA, Community, and MoH



Supported by \$48M (+ARV Drugs) 4 year award from the MoH, Gov of British Columbia, \$2.5M 5 year Avant-Garde Award (No 1DP1DA026182-01) from the National Institute for Drug Abuse (NIDA) at the NIH, \$110K Knowledge Translation Award from CIHR, and grants from