

The UNC Fogarty Program: DISCOVERY

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China 1949: “Sick Man of Asia”

- Life expectancy 35
- 9 of 10 leading causes of death were due to infectious diseases
 - Dysentery, typhoid, cholera, schistosomiasis, TB
- 1 of every 4 children died before age
- *STDs were 4th most common admitting diagnosis in urban hospitals*



Ratio of Syphilis Patients and First Consultation Dermatology Patients in Seven Cities after the Eradication Campaign

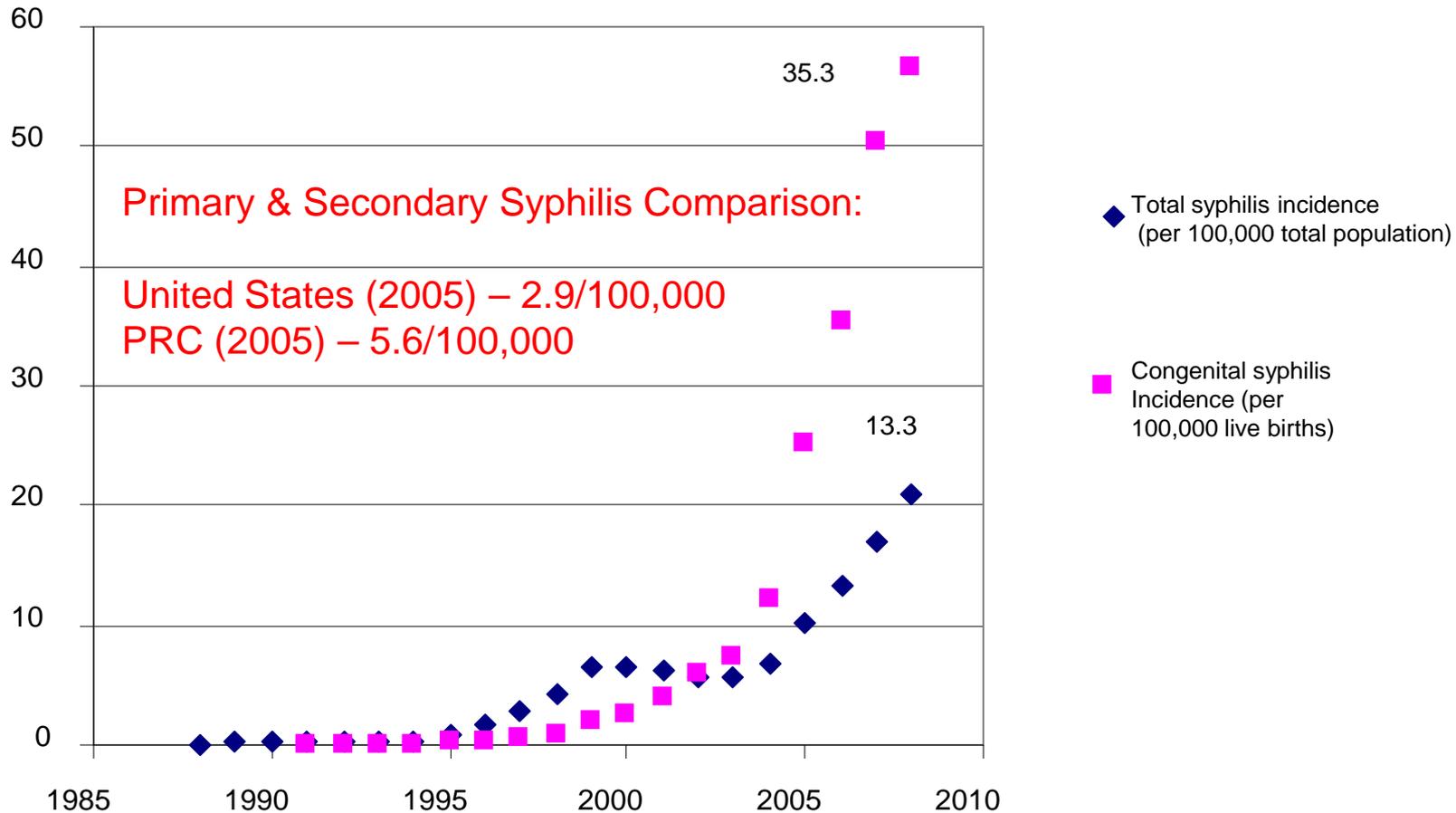
City	# Hospital	# of Dermatology Patients	Syphilis		Primary Syphilis	
			#	%	#	%
Beijing	3	206,362	1,195	0.58	7	0.0034
Shanghai	1	114,499	517	0.45	0	0
Tianjin	5	126,028	912	0.72	0	0
Shenyang	3	105,963	164	0.16	1	0.0009
Wuhan	4	112,843	732	0.65	16	0.014
Chongchin	2	46,302	194	0.42	1	0.002
Lanzhou	6	60,696	476	0.78	1	0.0017

Total	24	772,693	4,190	0.54	26	0.004

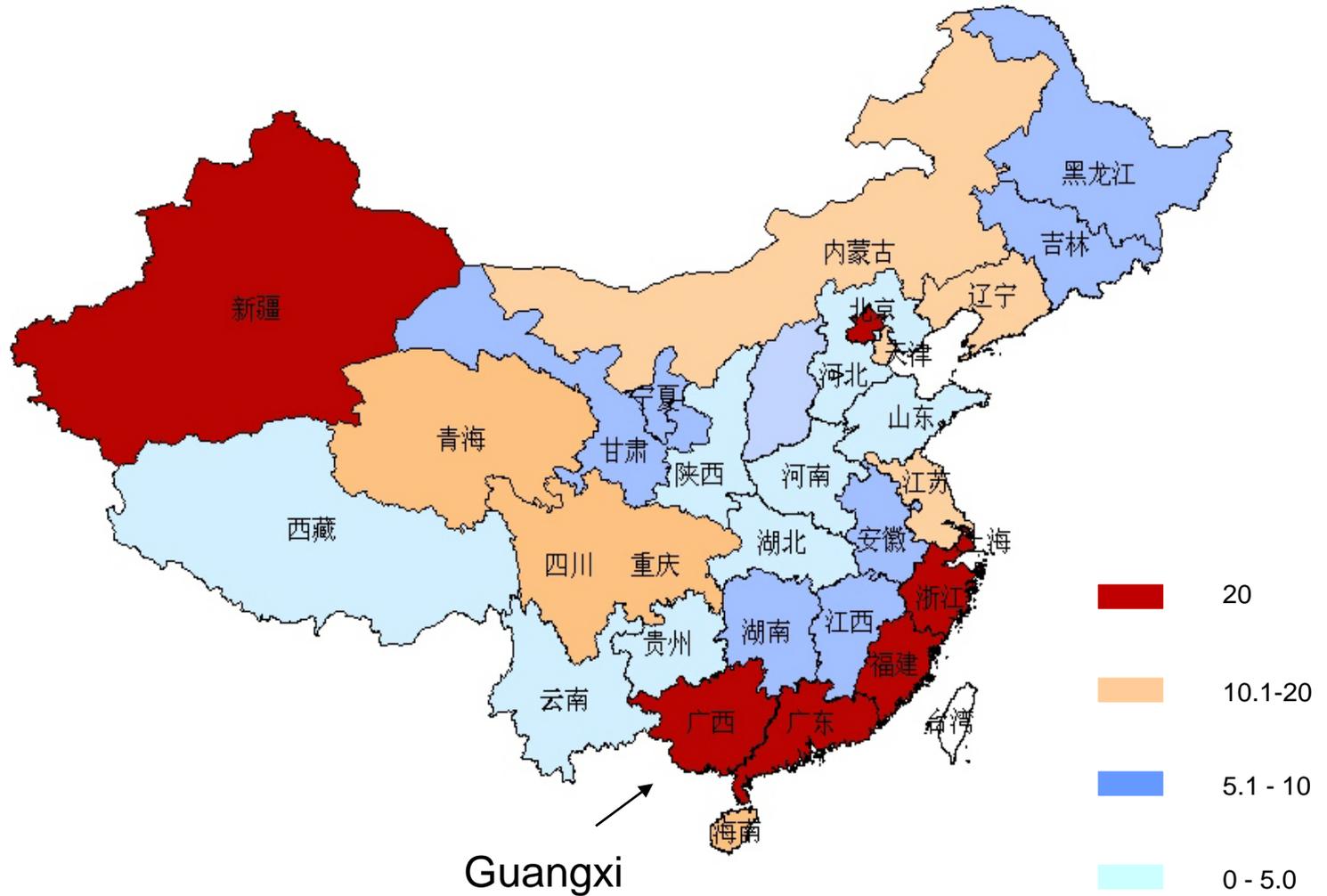
Hu CK, Ye GY, and Chen SF. Control and eradication of syphilis in China. Thesis collection of Beijing Science Conference. 126:167-177, 1964.



南京大学
NANJING UNIVERSITY



Reported overall syphilis and congenital syphilis incidence per 100,000 population and per 100,000 live births respectively. Data are from the National Center for STD Control and Prevention in Nanjing, China. adapted from Chen, Cohen et al . Lancet, 2007



Syphilis incidence per 100,000 population by province. Data from the National Center for STD Control in Nanjing, China adapted from Chen, Cohen et al . Lancet, 2007

Why has Syphilis Returned?

- Lack of Immunity??
- Changes in sexual practices?
- Sex for money?
- Sex for drugs?
- The “floating population” and “surplus men”

UN Syphilis Research Projects

- Research training (Fogarty)
- Syphilis prevalence measure by different methods (RDS vs. Place, NIH R24, R01)
- Rapid treponemal tests (WHO)
- Clinical syphilis (Sparling, Sena)
- Azithromycin (Zhu)
- HIV testing in patients with syphilis (Tucker)
- Prevention interventions (MSM, SWs)
- China Megaproject: HIV incidence after STD intervention (Chen)

China Recognizes Syphilis!!

Planning, Prevention and Control of syphilis in China (2010-2020) issued June 22, 2010

Available online:

<http://stock.sohu.com/20100621/n272945797.shtml>

Huang Yingying



- UNC 2003-2004: PhD Candidate
- ***“HIV/AIDS risk among brothel-based FSW in China: Assessing the terms, content and knowledge of sex work. Sex Transm Dis. 2004”***
- Since 2004:
Associate Professor, People’s University, Beijing
Co-investigator on NICHD R-24 2007-2012
9 publications on FSW, male clients, sex behavior

Malawi



DEMOCRATIC
REPUBLIC
OF THE
CONGO

TANZANIA

Muchinga Mountains

ZAMBIA

MOZAMBIQUE

MOZAMBIQUE

ZIMBABWE

Lake Kariba

28° E

32° E

36° E

12° S

16° S

Chitipa

Karonga

Chilumba

Nyika
National
Park

Rumphi

Mzuzu

Mzimba

Nkhata
Bay

Likoma Island

Lake Malawi
(Lake Nyasa)

Kasungu
National
Park

Kasungu

Nkhatakota

Dowa

Mchinji

Lilongwe

Dedza

Monkey Bay

Mangochi

Ntcheu

Machinga

Lake Chiuta

Lake Chilwa

Zomba

Blantyre

Sapitwa

Thyolo

Mwanza

Chikwawa

Lengwe
National
Park

Nsanje

Lago de Cabora Bassa

Zambezi

Zambezi

Save

Lugenda

Kafue

Luangwa

Chambeshi

Shire

9,849 ft. (3,002 m)

Malawi MOH

Priority HIV Research Areas

- HIV clinical management
- HIV sexual transmission prevention
- PMTCT
- Epidemiology and surveillance

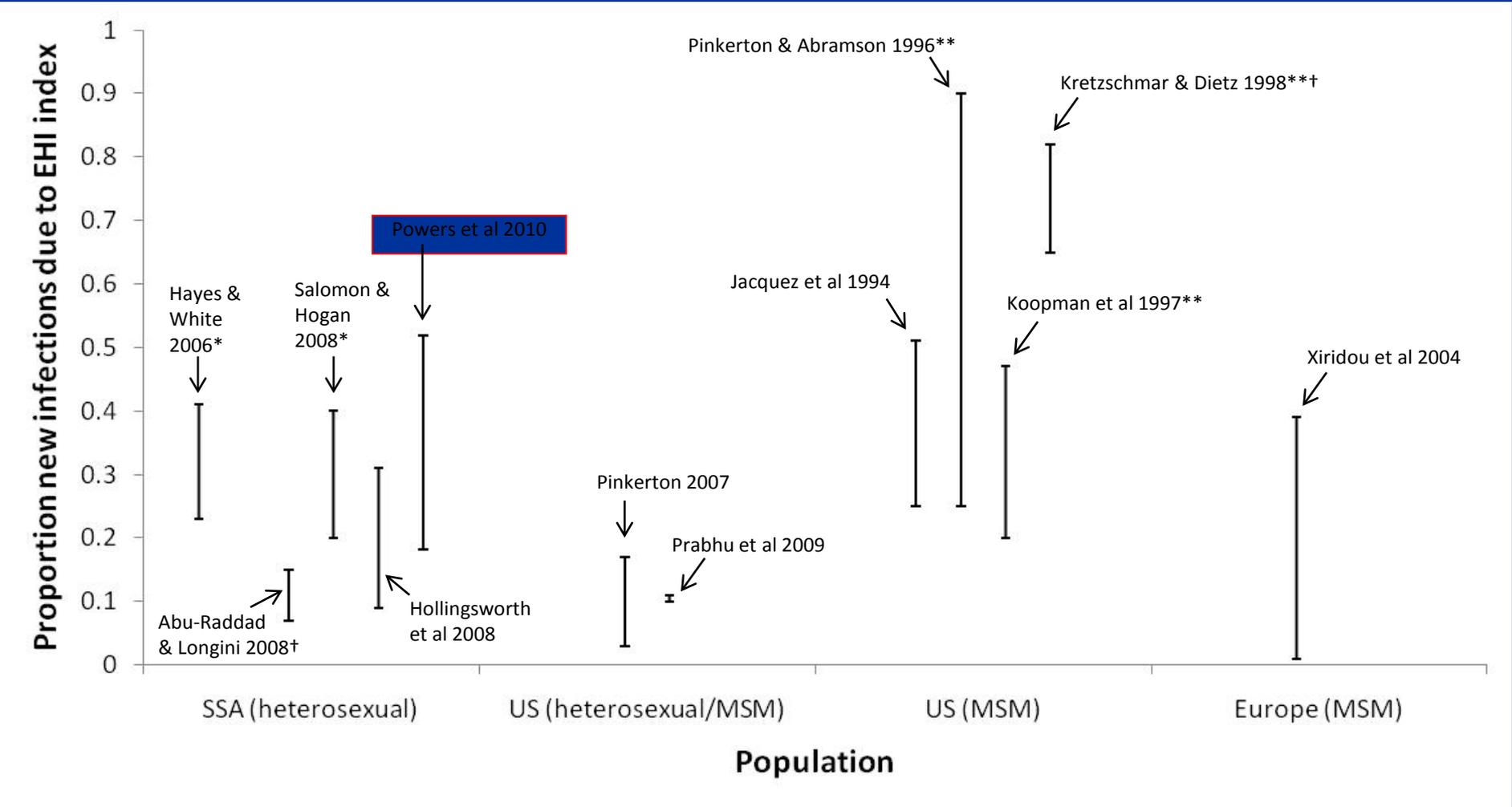
Acute HIV Infection Malawi

NIDDK, HPTN, CHAVI and MP3 Support
Projects led by Sam Phiri, Gift Kaminga

- ***Testing strategies***
- ***Prevalence***
- ***Natural history***
- ***Consequences***
- ***Intervention and Prevention***

Effect of Acute and Early HIV Infection on Spread

Cohen et al, NEJM, 2011, Powers Lancet 2011



* Range of estimates reflects the proportion of all transmissions *during an individual's entire infectious period* that occur during EHI. The extent to which this proportion corresponds with the proportion of all transmissions that occur during EHI *at the population level* will depend on the epidemic phase and the distribution of sexual contact patterns in the population.

** Transmission probabilities were drawn from the population category shown, but the reported estimates result from a range of hypothetical sexual behavior parameters that do not necessarily reflect a specific population.

† The range of estimates shown was extracted from the endemic-phase portion of graphs showing the proportion of new infections due to EHI over calendar time.

ORIGINAL ARTICLE

Prevention of HIV-1 Infection with Early Antiretroviral Therapy

Myron S. Cohen, M.D., Ying Q. Chen, Ph.D., Marybeth McCauley, M.P.H.,
Theresa Gamble, Ph.D., Mina C. Hosseinipour, M.D.,
Nagalingeswaran Kumarasamy, M.B., B.S., James G. Hakim, M.D.,
Johnstone Kumwenda, F.R.C.P., Beatriz Grinsztejn, M.D., Jose H.S. Pilotto, M.D.,
Sheela V. Godbole, M.D., Sanjay Mehendale, M.D., Suwat Chariyalertsak, M.D.,
Breno R. Santos, M.D., Kenneth H. Mayer, M.D., Irving F. Hoffman, P.A.,
Susan H. Eshleman, M.D., Estelle Piwowar-Manning, M.T., Lei Wang, Ph.D.,
Joseph Makhema, F.R.C.P., Lisa A. Mills, M.D., Guy de Bruyn, M.B., B.Ch.,
Ian Sanne, M.B., B.Ch., Joseph Eron, M.D., Joel Gallant, M.D.,
Diane Havlir, M.D., Susan Swindells, M.B., B.S., Heather Ribaud, Ph.D.,
Vanessa Elharrar, M.D., David Burns, M.D., Taha E. Taha, M.B., B.S.,
Karin Nielsen-Saines, M.D., David Celentano, Sc.D., Max Essex, D.V.M.,
and Thomas R. Fleming, Ph.D., for the HPTN 052 Study Team*

HPTN 052

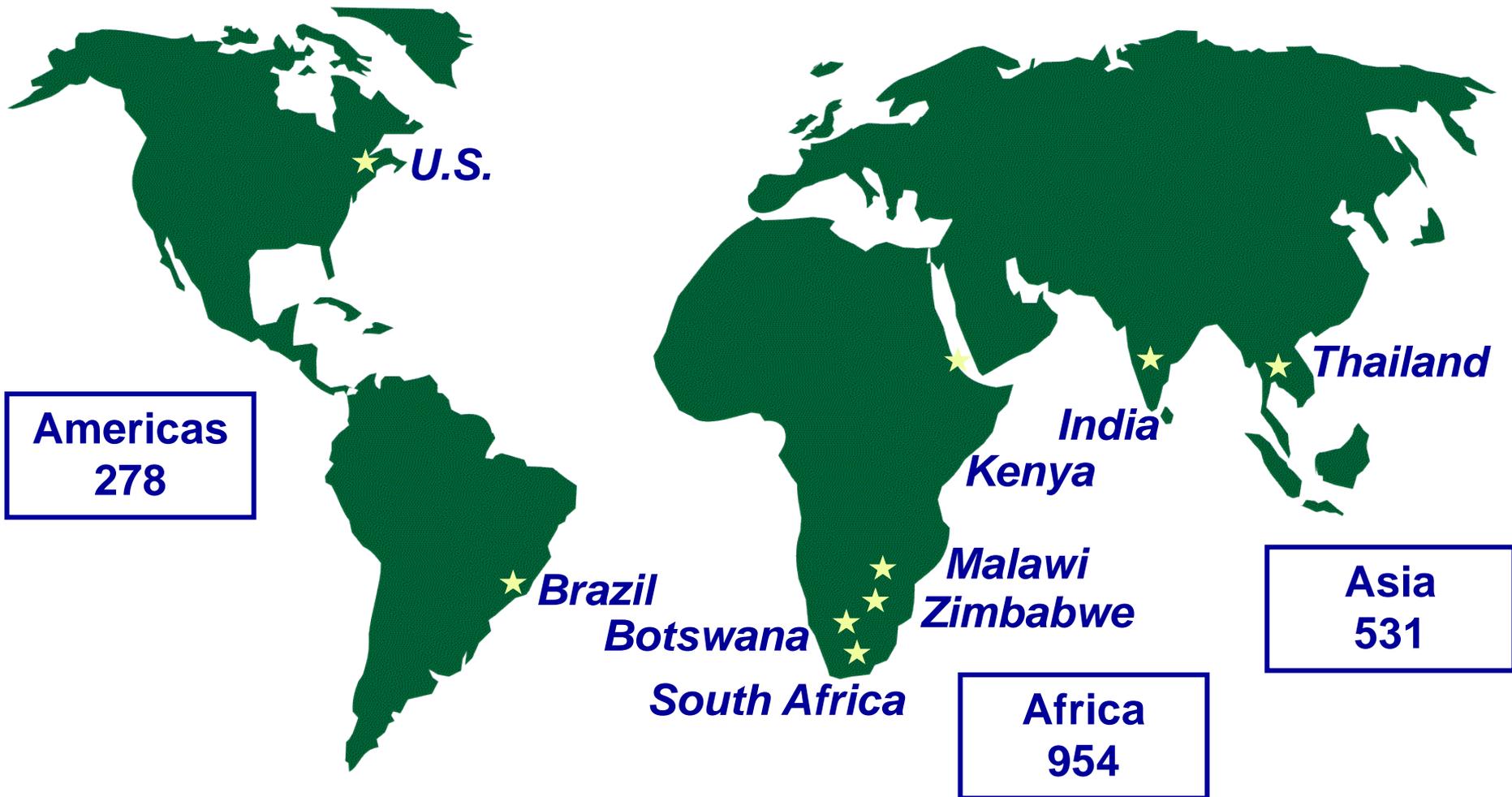
Bruce Alberts, Editor of Science explains the choice of this work

“The results have galvanized efforts to end the world’s AIDS epidemic in a way that would been inconceivable even a year ago”



HPTN 052 Enrollment

(Total Enrollment: 1763 couples)



96%

Results of the HPTN052 trial announced on 12 May 2011 show that if an HIV-positive person adheres to an effective antiretroviral therapy regimen, the risk of transmitting the virus to their uninfected sexual partner can be reduced by 96%

HPTN052研究组在2011年5月12日宣布，如果一位HIV阳性患者坚持接受有效的抗逆转录病毒治疗，他将病毒传播给其未受感染的性伴的几率将减少96%

**UNAIDS 2011 *AIDS at 30*
*SMARTER , FASTER , BETTER CAMPAIGN***

“Treatment for prevention is a game changer”.

Michel Sidibe
Executive Director
of UNAIDS

“将治疗作为预防措施是游戏规则的改变。”

Michel Sidibe
UNAIDS执行理事

Lilongwe, Malawi



Front: Tiwonge Mtande, Mwayi Chipeta, Hellen Masowo, Ida Shumba, Emma Kachipapa, Lucy Dzama, Dorothy Sichali and Kenneth Kasambara

Standing: Victor Palichina, Laston Kayuni, Thoko Nkhalamba, Bertha Chisale, Geoffrey Singini, Pax Mkupa, Steve Mphonda, Tiwonge Kamvaunamwali, Felix Namalueso, Robert Mponela, Lebbah Lugalia, Tchangani Tembo, Madalitso Maliwichi, Eustacia Msumba, Burnet Mpasu, Mina Hosseinipour, Gabriel Banda and Noel Mumba.

Not pictured: Francis Martinson, Wiza Kumwenda, Bertha Maseko, Esnath Mkandawire

Blantyre, Malawi





The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Maternal or Infant Antiretroviral Drugs to Reduce HIV-1 Transmission

Charles S. Chasela, Ph.D., Michael G. Hudgens, Ph.D.,
Denise J. Jamieson, M.D., M.P.H., Dumbani Kayira, M.B., B.S.,
Mina C. Hosseinipour, M.D., M.P.H., Athena P. Kourtis, M.D., Ph.D.,
Francis Martinson, M.B., Ch.B., Ph.D., Gerald Tegha, B.Sc.,
Rodney J. Knight, Ph.D., Yusuf I. Ahmed, B.M., Deborah D. Kamwendo, M.Sc.,
Irving F. Hoffman, P.A., M.P.H., Sascha R. Ellington, M.S.P.H.,
Zebrone Kacheche, B.Sc., Alice Soko, R.N., Jeffrey B. Wiener, Ph.D.,
Susan A. Fiscus, Ph.D., Peter Kazembe, M.B., Ch.B., Innocent A. Mofolo, M.Sc.,
Maggie Chigwenembe, R.N., Dorothy S. Sichali, B.Sc.,
and Charles M. van der Horst, M.D., for the BAN Study Group*

Charles Chasela PhD: AITRP
2008-2010, Fogarty Fellow
2010-12

Chasela New Engl J Med.
2010; 362:2271-81.

Current Position: Assistant
Professor School of Public
Health Wits University

Lessons Learned

- Training integrated with critical projects
- Local passion
- Local ownership
- Dissemination of research results
- Sustainability