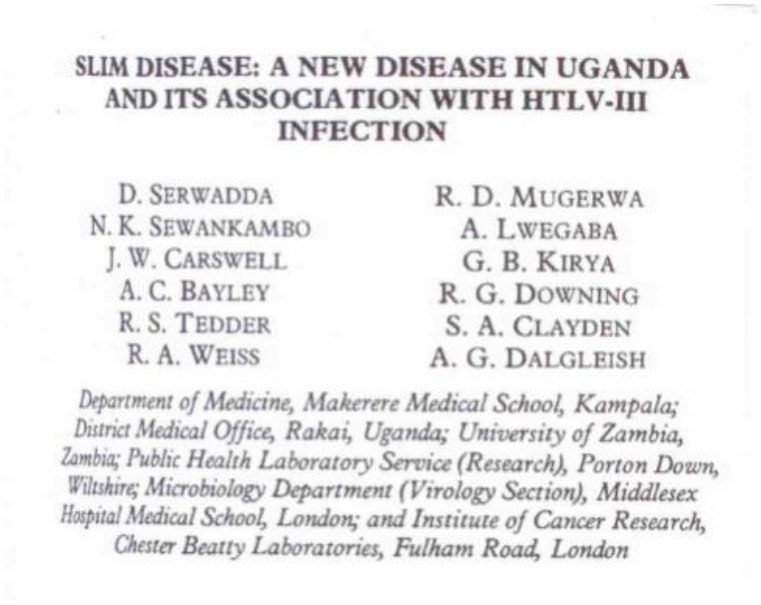
Global Progress and Success of HIV/TB Collaborative Activities

Diane V. Havlir, MD
Professor of Medicine
University of California, San Francisco
Chair, WHO HIV/TB Working Group

HIV and TB: A deadly synergy from the start

TB defined AIDS

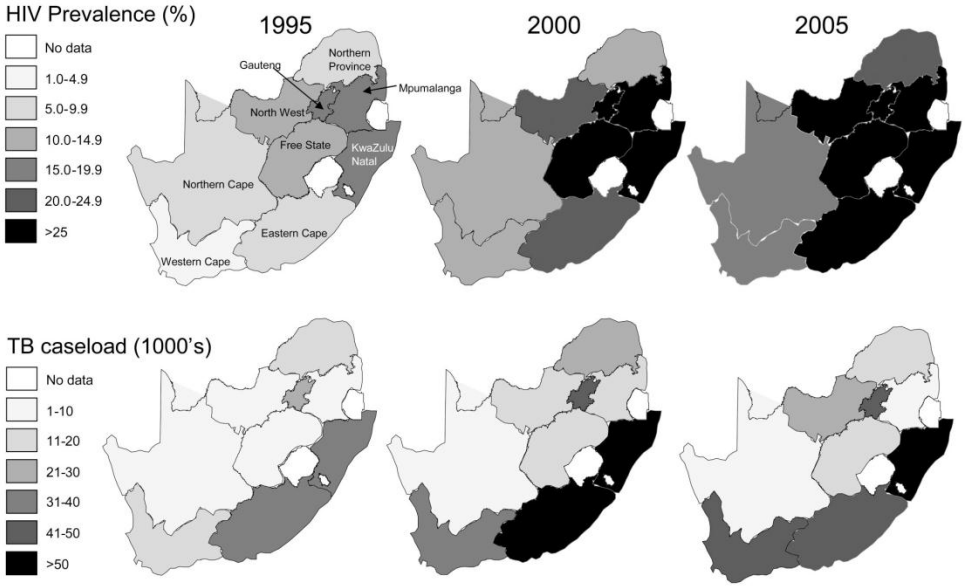
AIDS shaped TB



SLIM DISEASE: A NEW DISEASE IN UGANDA AND ITS ASSOCIATION WITH HTLV-III INFECTION

D. SERWADDA, N. K. SEWANKAMBO, J. W. CARSWELL, A. C. BAYLEY, R. S. TEDDER, R. A. WEISS, R. D. MUGERWA, A. LWEGABA, G. B. KIRYA, R. G. DOWNING, S. A. CLAYDEN, A. G. DALGLEISH

Department of Medicine, Makerere Medical School, Kampala; District Medical Office, Rakai, Uganda; University of Zambia, Zambia; Public Health Laboratory Service (Research), Porton Down, Wiltshire; Microbiology Department (Virology Section), Middlesex Hospital Medical School, London; and Institute of Cancer Research, Chester Beatty Laboratories, Fulham Road, London



Why the slow response early on?

Scientific Gaps

- **Diagnosis**
- **Epidemiology**
- **Use of ART**
  - When to start ART
  - What to start
  - Immune reconstitution
- **TB/HIV care delivery**

Politics

- **TB avoid HIV care**
  - Overburdened
- **HIV unwilling to treat TB**
  - Overburdened
  - Access to TB drugs limited
- **Funding silos for HIV and TB**

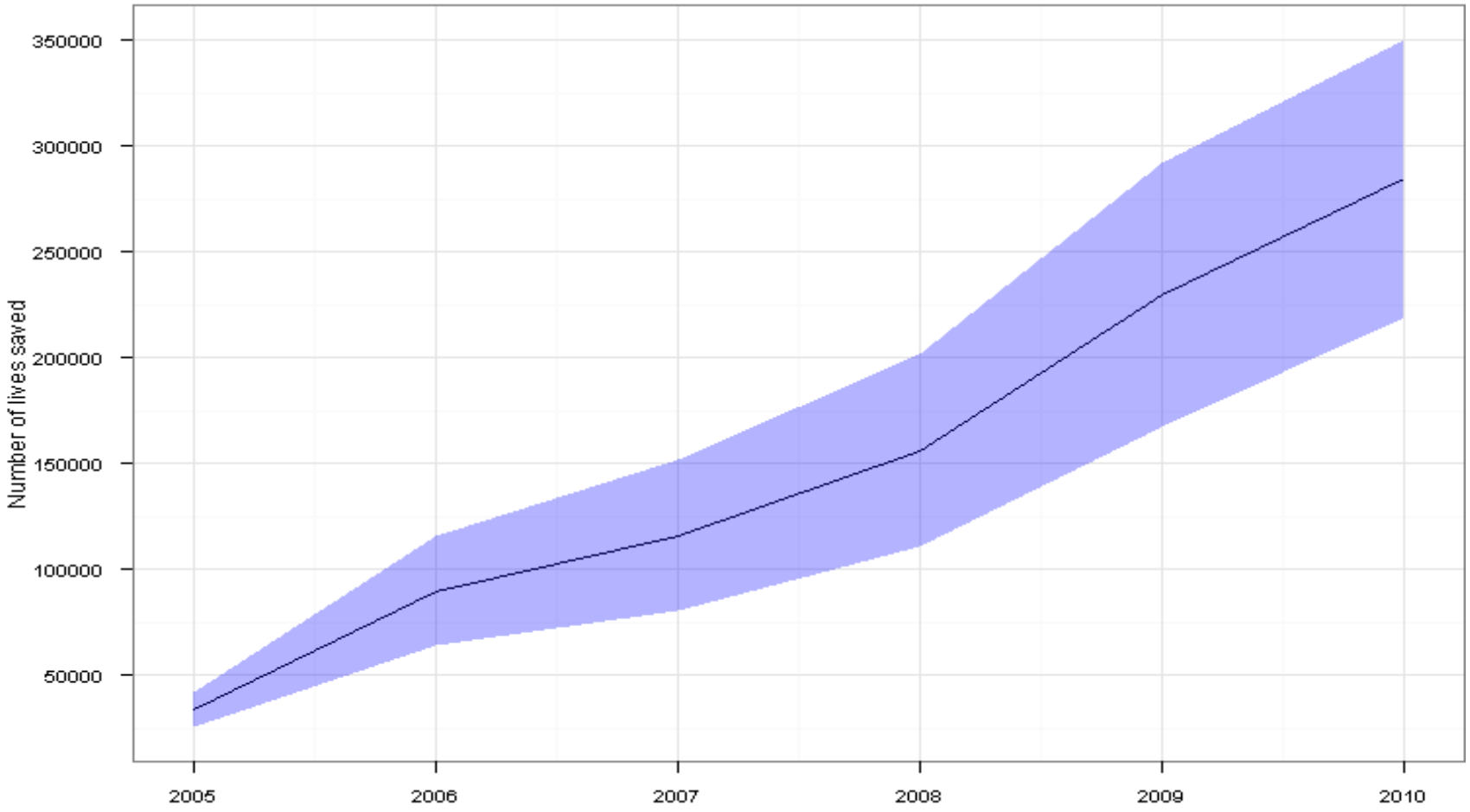
Key Drivers of Progress 2002-2012

- **Policy - WHO**
- **Funding-investment (PEPFAR, Global Fund)**
- **Advocacy-TAG, TB/HIV Working Group of the Stop TB Partnership**
- **Research support (NIH, ANRS, Gates)**
- **Visibility (IAC,CROI, UNAIDS)**

Measuring Success

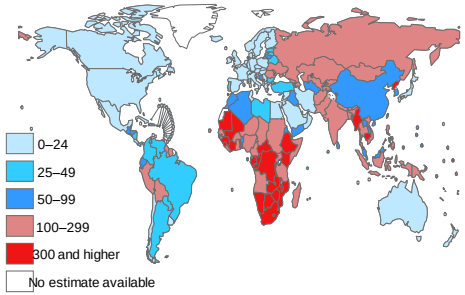
- **Processes**
  - HIV testing of TB patients
  - TB and septra treatment in HIV+ TB cases
  - ART in HIV+ TB cases
  - TB screening in HIV + patients
  - IPT in HIV + persons
  - ART in HIV + persons
- **Outcomes**
  - TB cases in HIV+ patients-- 2002-2012
  - TB deaths in HIV+ patients– 2002-2012
  - Composite estimate of number of lives saved 2002-2012

Estimated lives saved 2005-2010 (with uncertainty interval in blue band)



Cumulative 2005-10= 910,000 (800,000 – 1,100,000)

30 years later, TB is still the leading cause of death in HIV



	Estimated number of cases	Estimated number of deaths
All forms of TB	8.8 million	1.1 million
HIV-associated TB	1.1 million	350,000
Multidrug-resistant TB (MDR-TB)	650,000	150,000

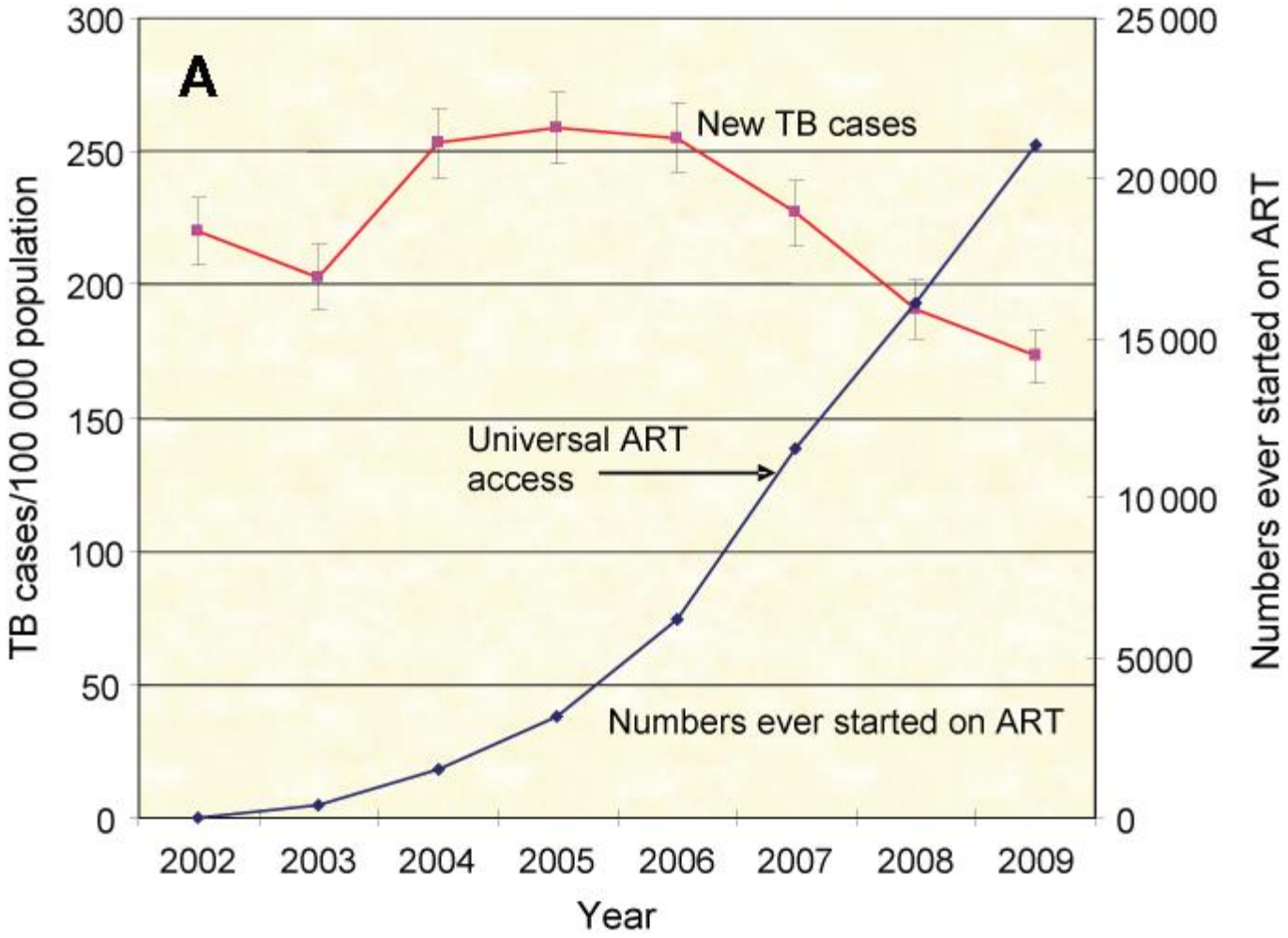
Global Burden of TB 2009, WHO/STOP TB

We can do more

- **New evidence that ART is extraordinarily effective to prevent TB**
- **New evidence that IPT can add to ART protection**
- **New evidence that early ART reduces mortality in TB patients**
- **New innovations in TB testing**
- **New TB drugs in the pipeline**
- **TB vaccines research moving forward**

If we wait, the toll will continue to rise and we will have failed to put evidence into action
If we **act now**, TB mortality rates will **plummet**

Evidence from Malawi– Less TB with more ART



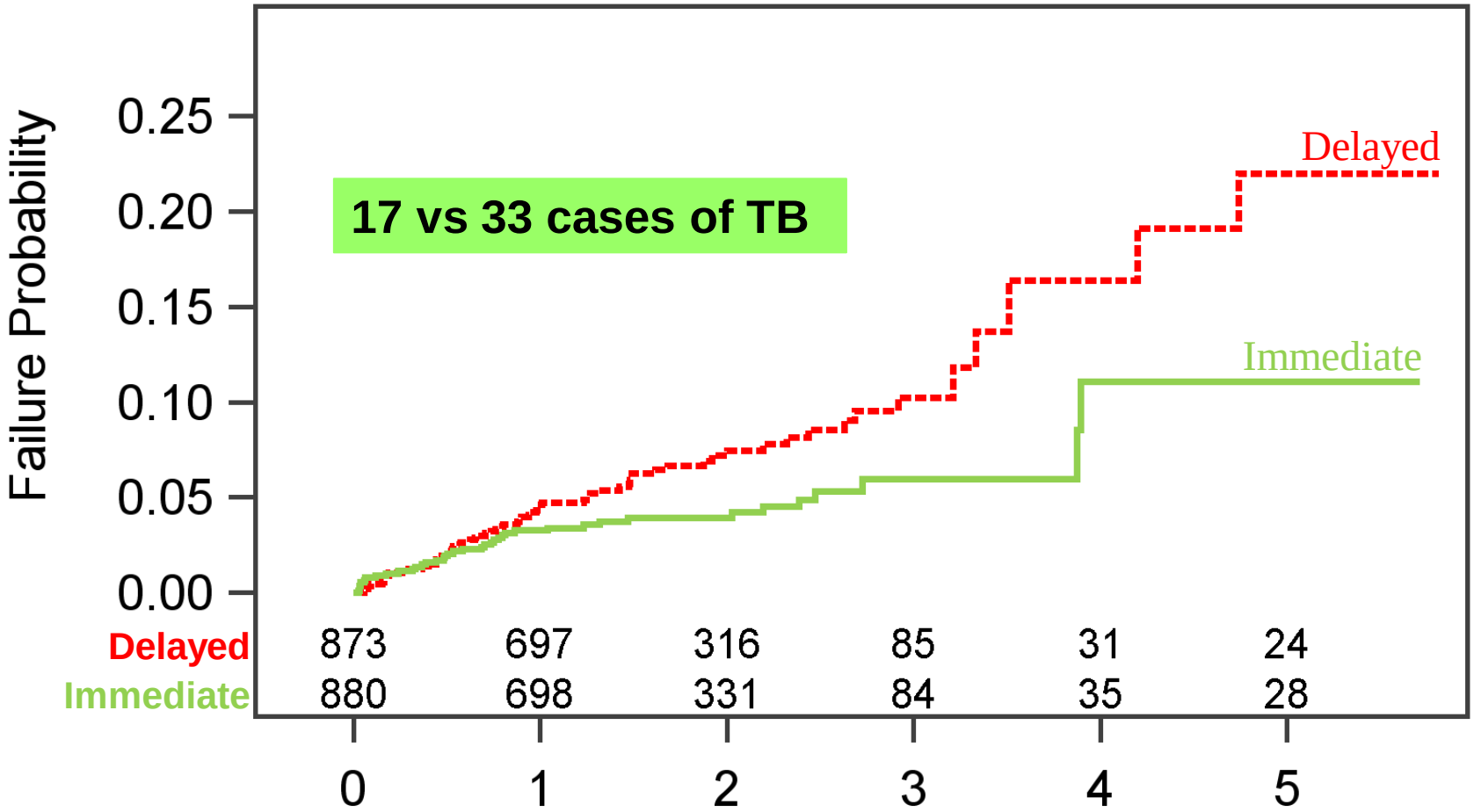
Zacharia, IJTLD, 2011

Clinical Studies show protection across wide CD4 range

	CD4 <200	CD4: 200-350	CD4>350
Studies (n)	2	4	3
Protection (%)	84	66	57

Suthar et al 2012 ,PLoS Medicine

HPTN 052: 40% reduction in probability of Death, AIDS or TB with immediate treatment



HR: 0.6 [0.4, 0.9], P=0.01

Years since randomization

Cohen, NEJM, 2011

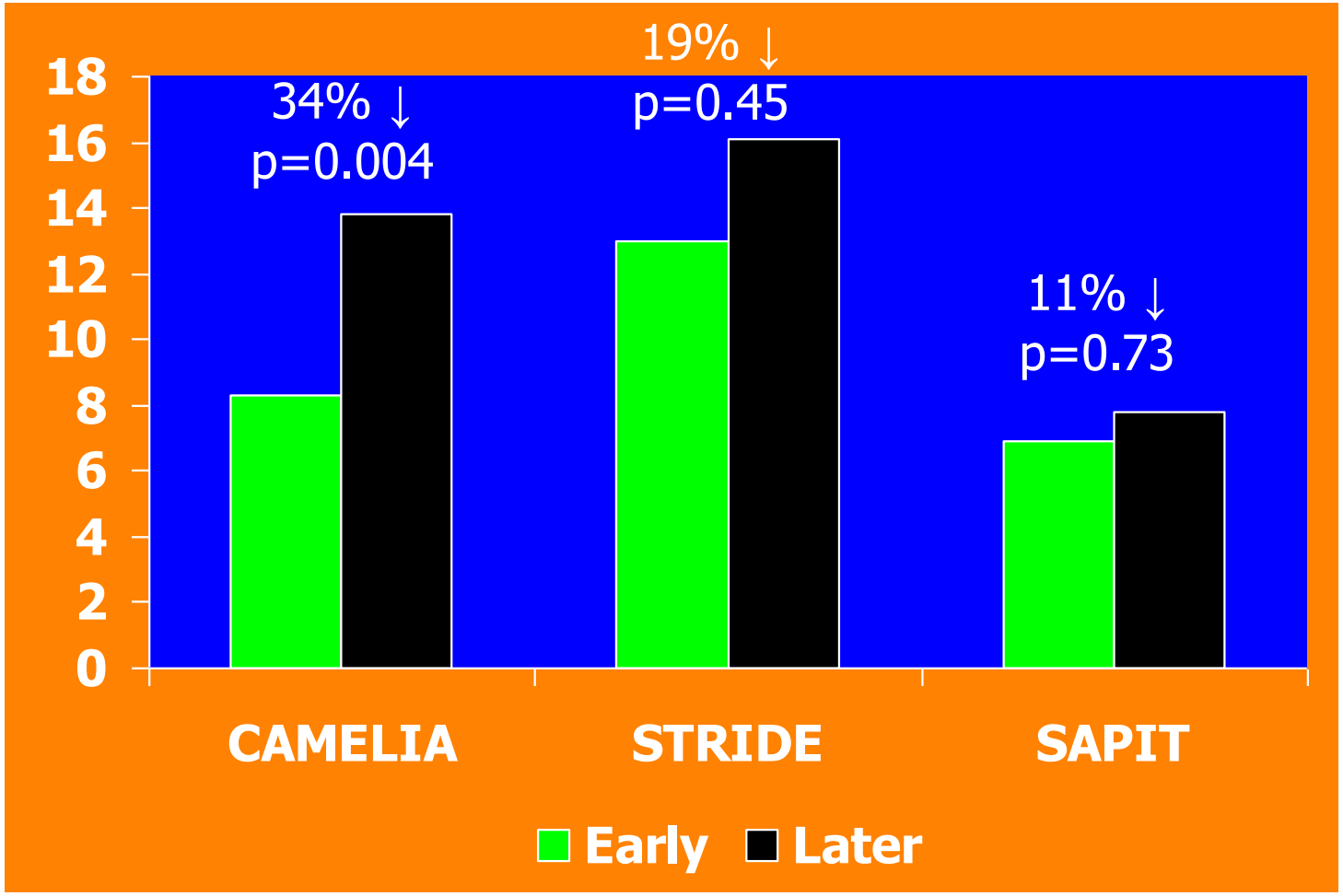
Combined ART and IPT for greater impact

Studies	IPT alone	ART alone	ART plus IPT
Brazil	68	52	80
South Africa	13	64	89
Botswana	65	67	97

AIDS 2007: 21: 1441-8;
AIDS 2009, 23:631–636;
Lancet 2011: 377:1588-98

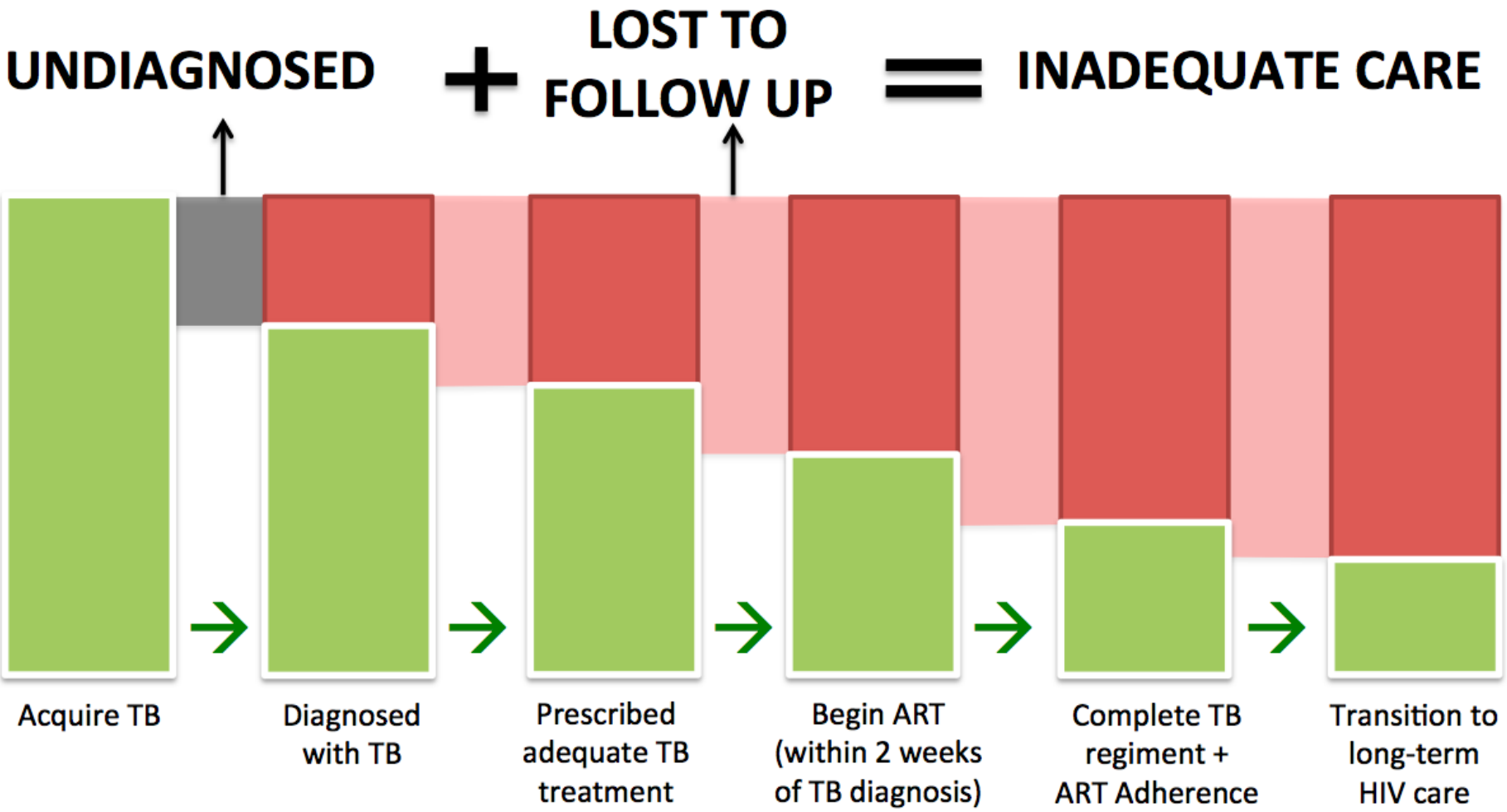
ART has significant impact when combined with IPT

Early ART reduces death (CAMELIA) or death/AIDS (STRIDE, SAPIT)



Blanc, NEJM, 2011; Havlir, NEJM, 2011, Karim , NEJM, 2011

Study and Fix and HIV/TB Care Cascade



TB Drug and Vaccine Development – HIV inclusive

New TB Drug Candidates

- TMC-207
- OPC-67683
- PA-824
- SQ-109
- PNU-100480
- AZD5847

Action

- Conduct drug interaction studies with new TB drugs and ART
- Include HIV patients in new TB drug clinical trials and permit ART

One vision: 2022

- **Massive scale of ART and IPT**
- **A POC TB diagnostic test**
- **TB treatment – entirely new drugs**
  - 2 weeks in duration
  - ART compatible
  - Effective for drug sensitive and drug resistant TB
- **A TB vaccine in trial for HIV-and HIV+ persons**

- **HIV/TB cases reduced 10 fold and TB no longer the entry point for HIV diagnosis**
- **HIV/TB deaths reduced 10 fold**

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Global incidence of HIV-positive TB cases 1990-2010