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Cancer Care and Prevention in Africa: Lessons from HIV/AIDS

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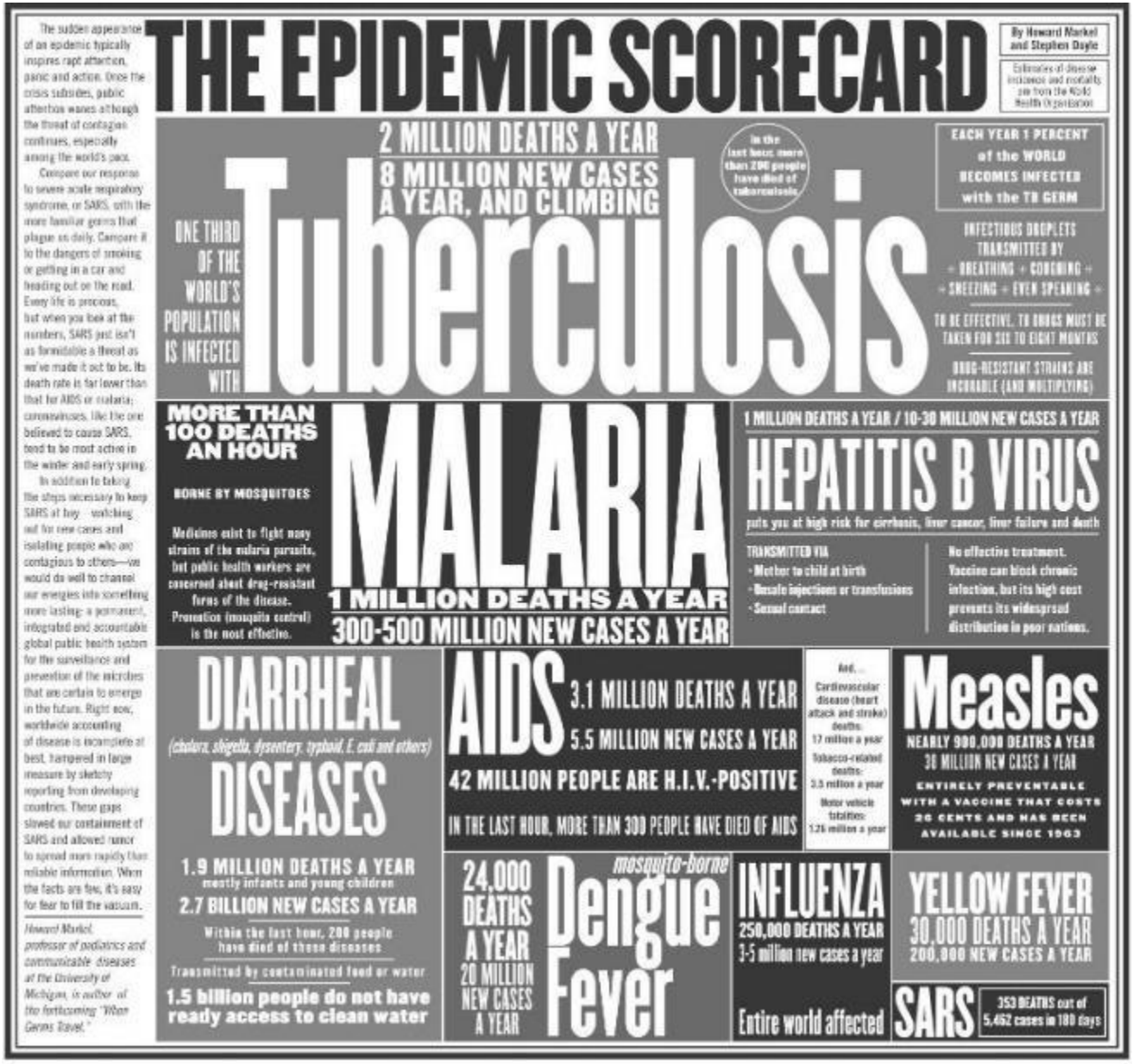
Henry Rutgers Professor of Global Health
Director, Rutgers Global Health Institute

Bristol-Myers Squibb Foundation Grantee Summit
April 16, 2019



Howard Markel and Stephen Doyle, New York Times (Op-Ed, April 30, 2003)

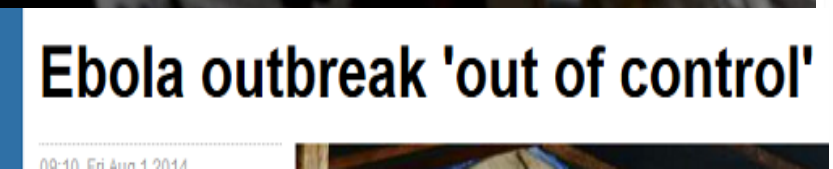

Ebola Virus Kills Liberian In Lagos


DAILY TRUST
Boko Haram overruns Gwoza, Kill dozens
As FG declares emergency...
Ebola kills nurse, 5 others infected
•Minister advises against handshake
•Saudi man dies after S/Leone trip


PUNCH
Lagos female doctor contracts Ebola virus
Pages 8, 9 & 17
• Victim among health workers who treated Sawyer
• Eight people quarantined, 70 under surveillance
• Nigeria has four out of 1,603 cases –WHO


DAILY NEWS
NEW YORK'S HOMETOWN NEWSPAPER
EBOLA SCARE IN CITY
PAGES 4-5

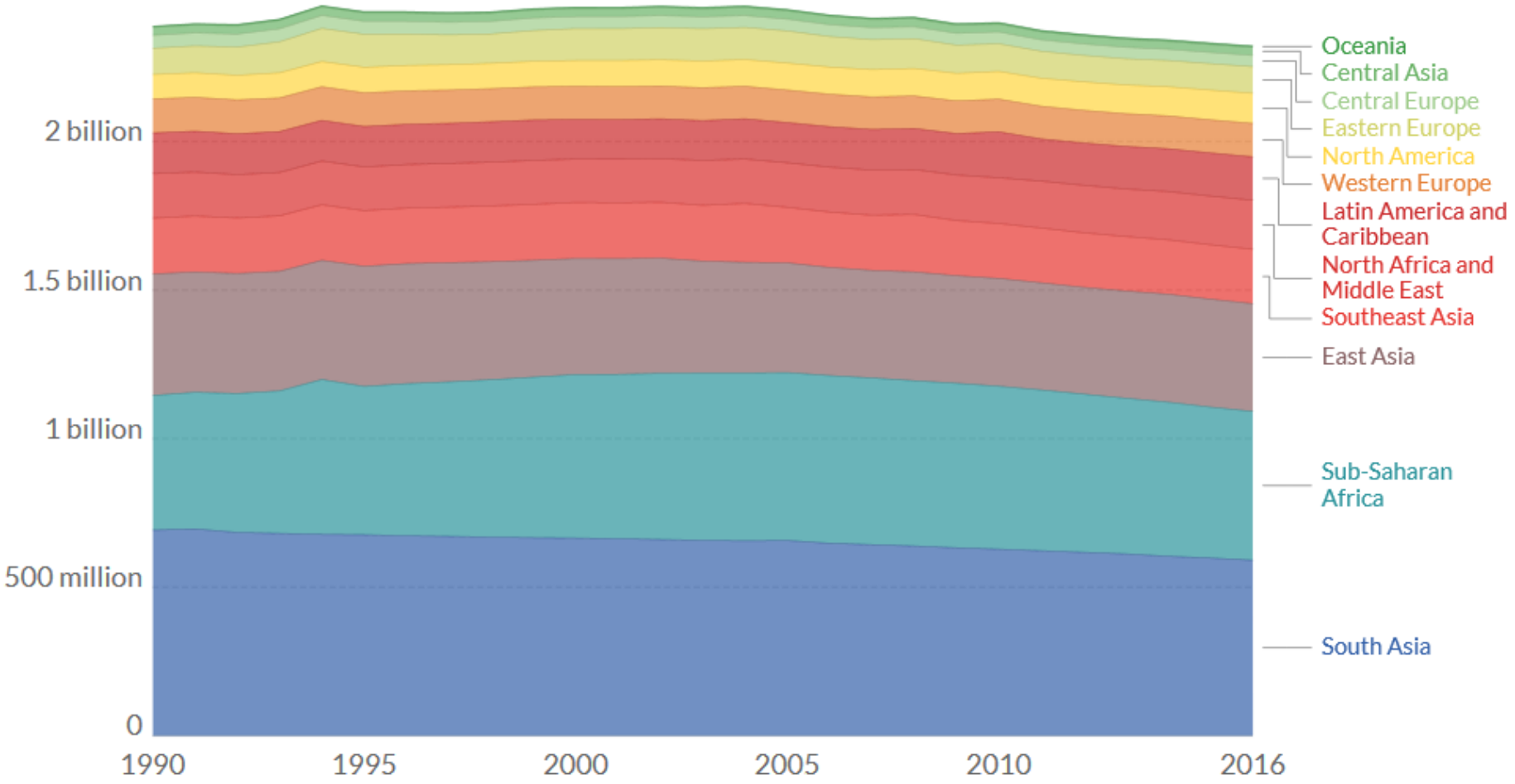

Headlines of the Week


Ebola outbreak 'out of control'

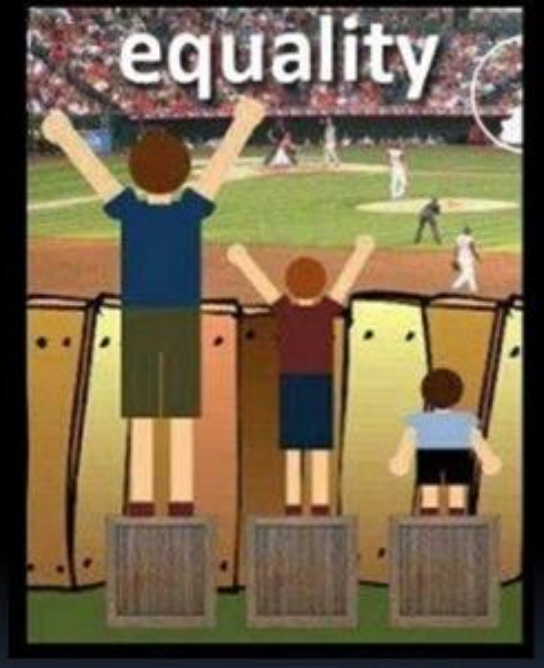
Global disease burden by region

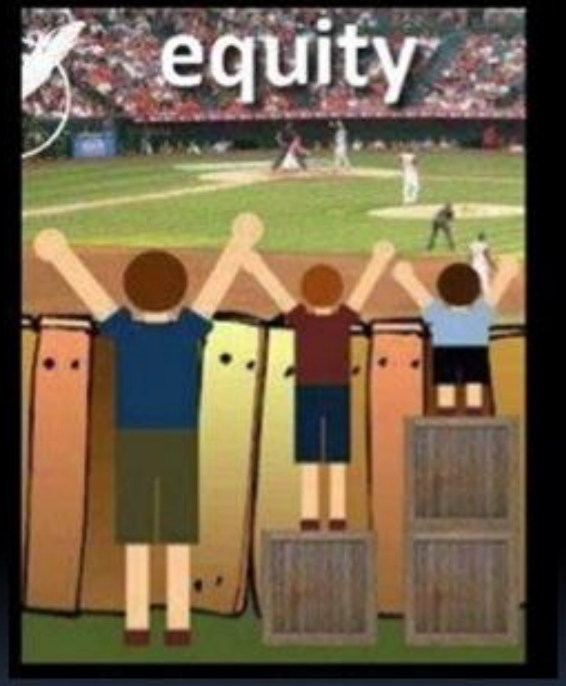
Total disease burden from all causes, disaggregated by region. Total disease burden measured as the number of DALYs (Disability-Adjusted Life Years) per year. DALYs are used to measure total burden of disease - both from years of life lost and years lived with a disability. One DALY equals one lost year of healthy life.

Our World in Data



Equality vs. Equity





EQUALITY=*SAMENESS*

GIVING EVERYONE THE SAME THING → It only works if everyone starts from the same place

EQUITY=*FAIRNESS*

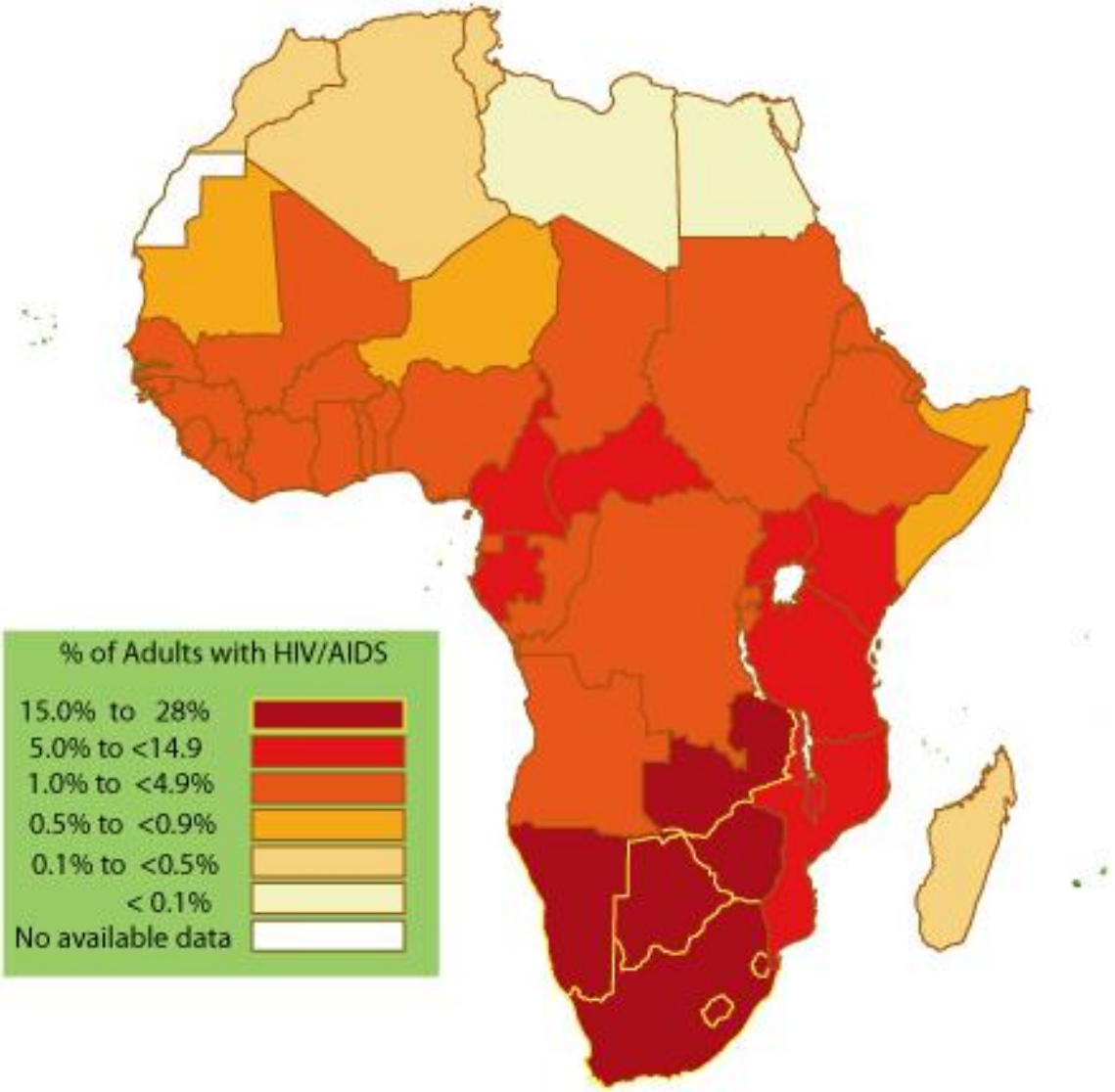
ACCESS to SAME OPPORTUNITIES → We must first ensure equity before we can enjoy equality

Multidisciplinary Partnerships in AIDS Care and Prevention:

1) Enhancing Care Initiative (ECI)	1996-2001
2) Secure the Future (Bristol-Myers Squibb)	1999-present
3) African Comprehensive HIV/AIDS Partnerships (ACHAP)	2000- present
4) President's Emergency Plan for AIDS Relief (PEPFAR)	2003- present
> *Project HEART, Track 1.0*	*2004-2012*
> *Harvard PEPFAR Partnerships, Track 1.0*	*2004-2013*

Estimated HIV Infection in Africa in 2007

based on statistics from the Joint UN Programme on HIV/AIDS



Secure the Future

Secure the Future

- In 1999, Bristol-Myers Squibb Foundation distinguished itself amongst its peers as the first to make a $100 million dollar commitment to advancing HIV/AIDS research and community outreach programs
  - > By 2014, the program's 15th anniversary, Secure the Future had committed $180 million to over 250 projects

- Efforts initially focused in seven African countries: Botswana, Burkina Faso, Lesotho, Namibia, South Africa, Swaziland, and Tanzania
  - > Efforts have expanded to 22 countries

Secure the Future

NIH U.S. National Library of Medicine

ClinicalTrials.gov

Find Studies

Home > Search Results > Study Record Detail

The Adult Antiretroviral Treatment and Resistance Study (Tshepo)

Sponsor:

Harvard School of Public Health

Collaborators:

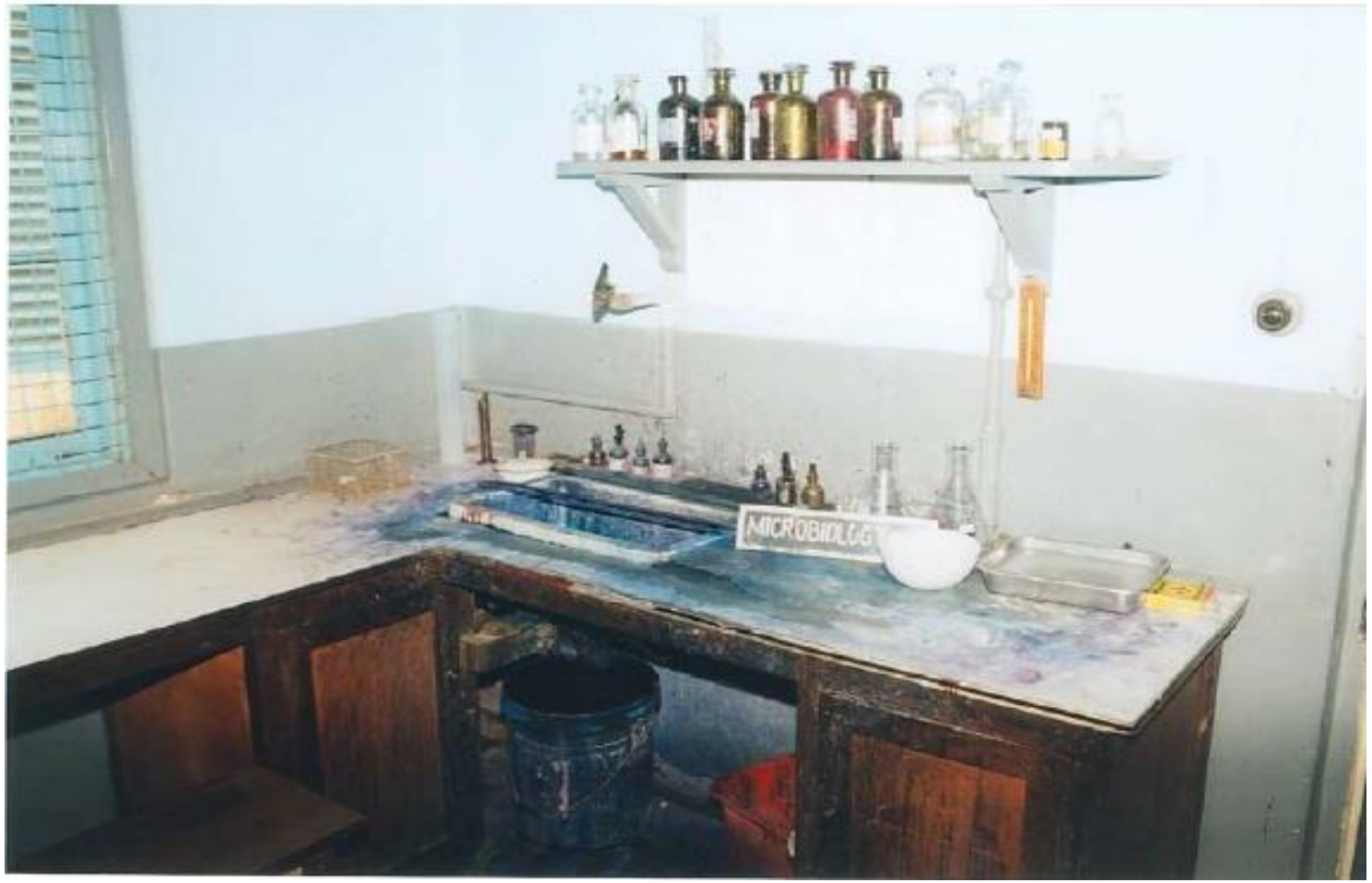
Princess Marina Hospital, Botswana

Botswana Ministry of Health

McGill University Health Center

Bristol-Myers Squibb

Secure the Future



Secure the Future

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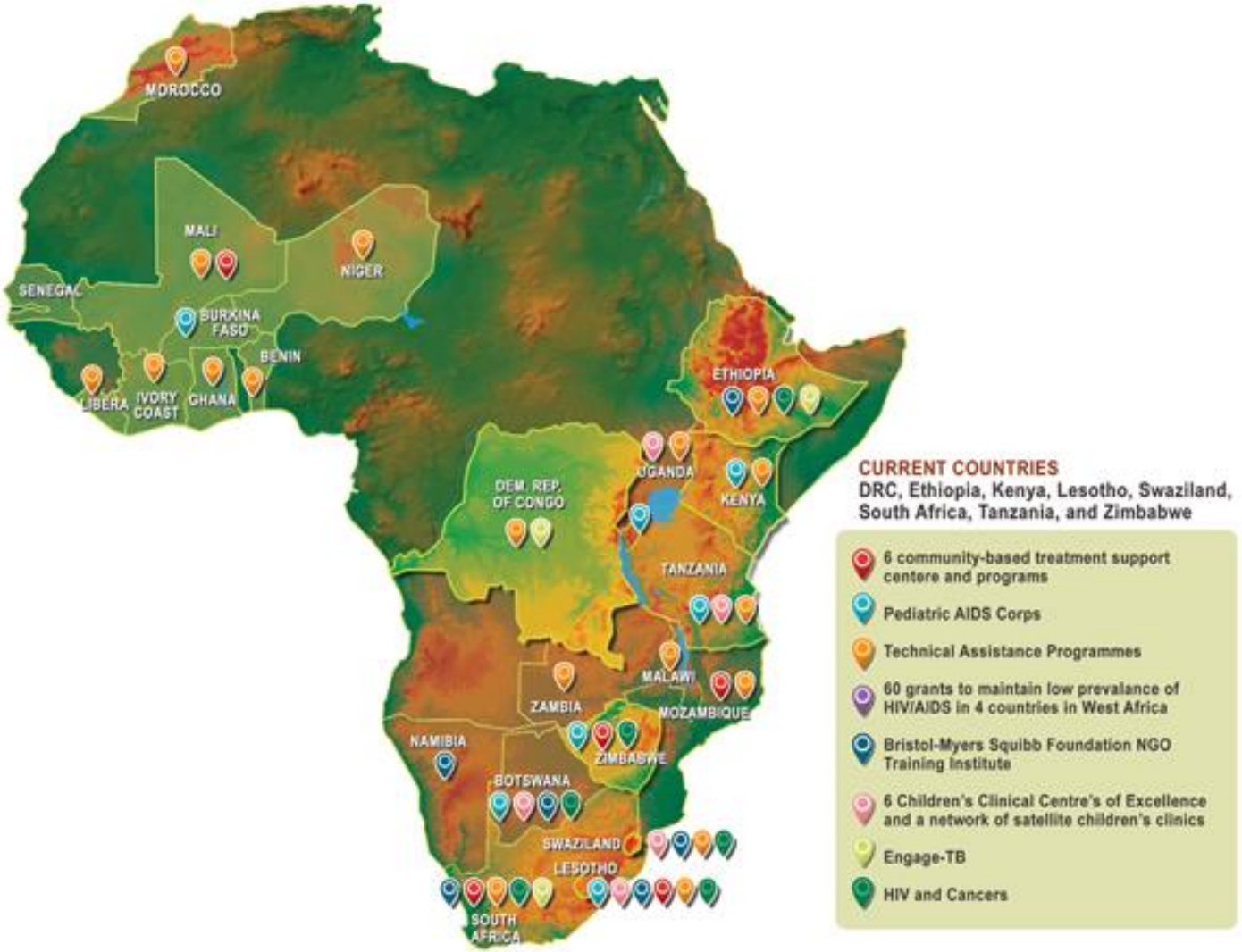
Secure the Future

The Tshepo Study

- First large-scale antiretroviral treatment study in southern Africa, founded by Bristol-Myers Squibb Foundation's Secure the Future initiative

- Foundational clinical trial that evaluated different antiretroviral treatment options, their efficacy, and drug resistance among Botswana AIDS patients

Secure the Future



What Works and Why

- Partnerships – The actual work getting done
- Monitoring - What is happening?
- Evaluation - Why?

PEPFAR 1

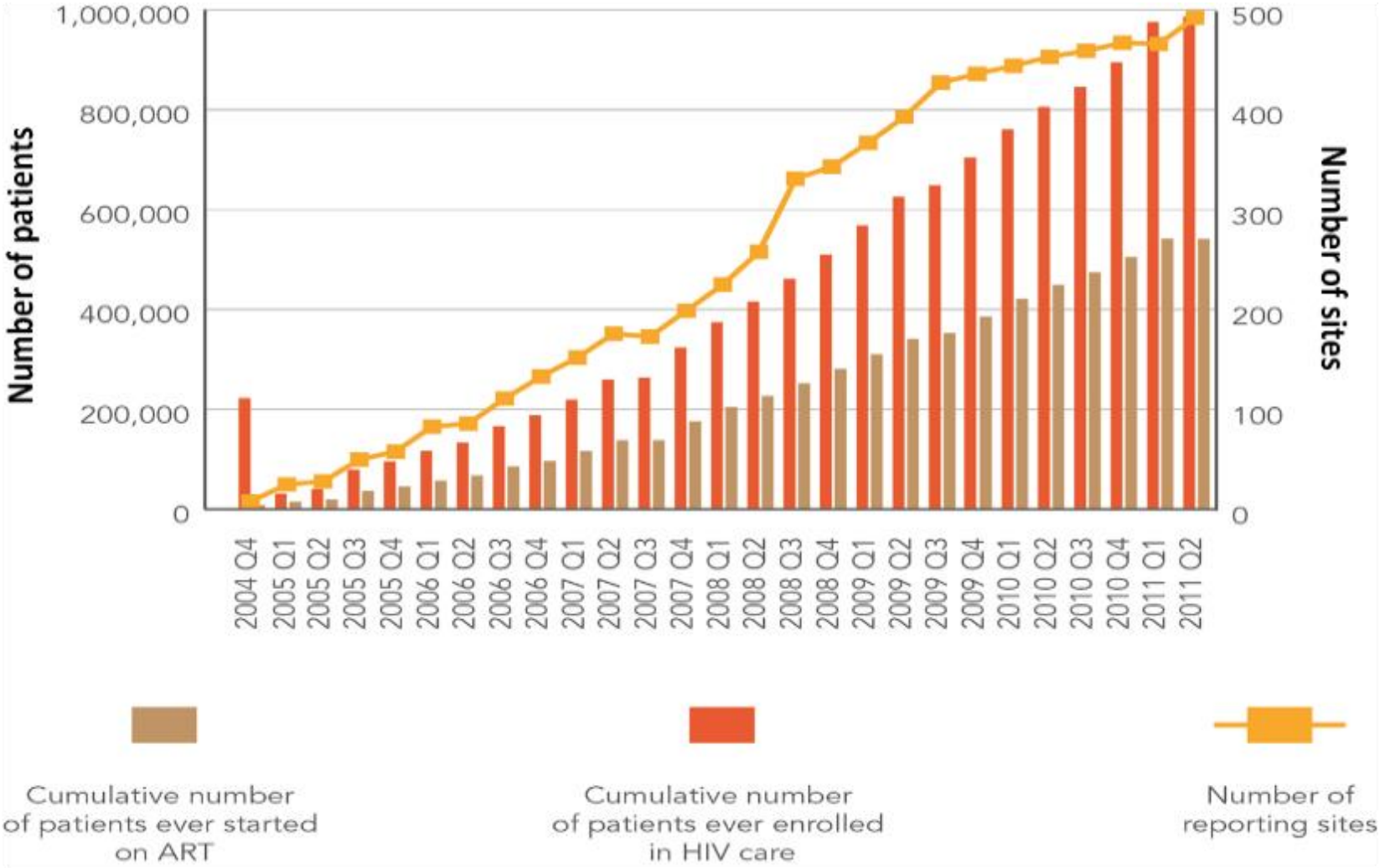
- United States Leadership against HIV/AIDS, Tuberculosis, and Malaria Act of 2003
  - > *FY 2004 - FY 2008*
- $15 billion ($3 billion/year)
  - > *$1 billion for Global Fund in FY 2004 (and such sums as necessary for FY 2006-2008)*
- Monitoring and evaluation resources **not** encouraged
  - > *The word "research" actively **not** allowed to be used*

PEPFAR 2

- Tom Lantos and Henry J. Hyde United States Leadership against HIV/AIDS, Tuberculosis, and Malaria Act of 2008
  - > *FY 2009 - FY 2013*
- $48 billion (in total)
  - > *$2 billion for Global Fund in FY 2008 (and such sums as necessary for FY 2010-2013)*
  - > *$4 billion for tuberculosis (in total)*
  - > *$5 billion for malaria (in total)*
- IOM studies require data evaluation plan, performance assessment, and impact evaluations

EGPAF: Project HEART Countries and Number of Sites, 2004-2011

EGPAF: Project HEART Care and Treatment Results 2004-2011



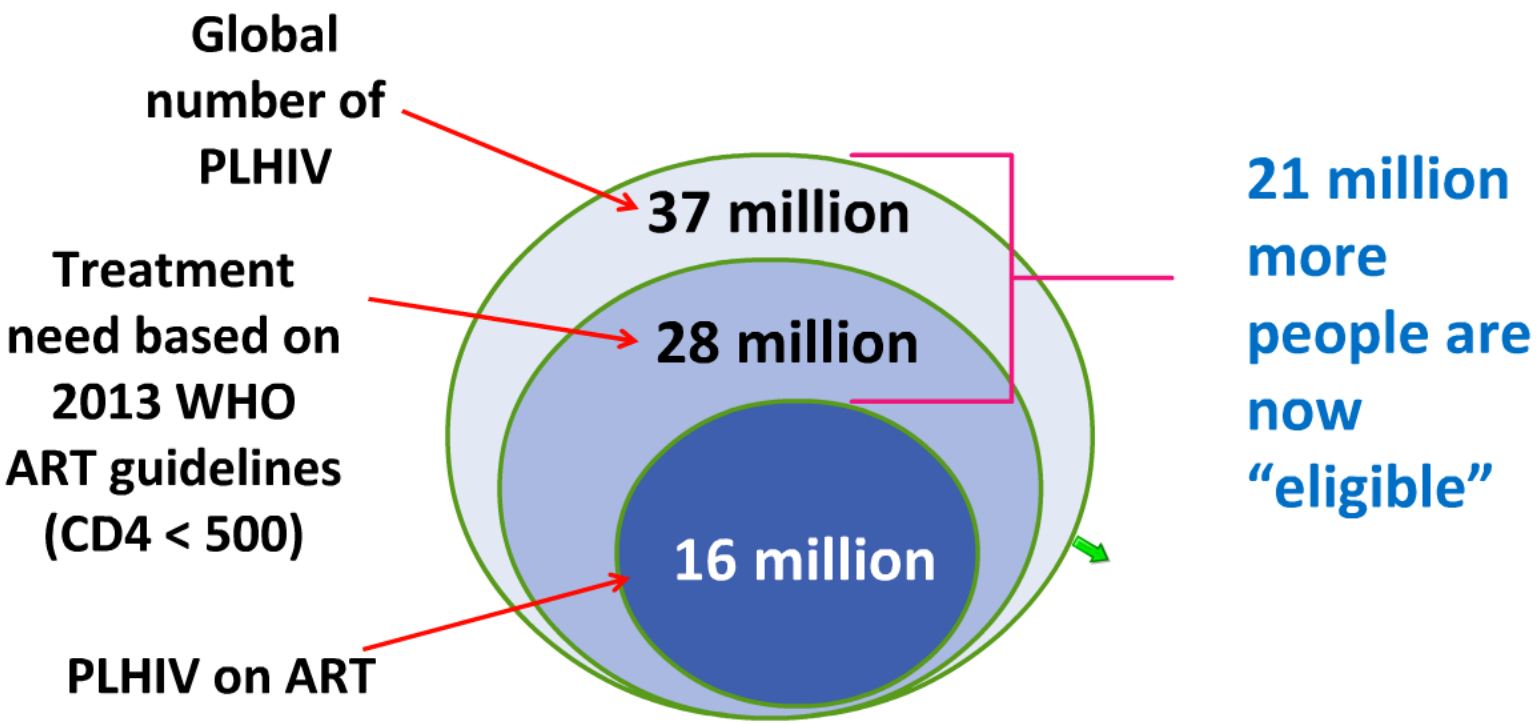
"Ending AIDS by 2030"

- Success in the global campaign to treat HIV/AIDS in the last decade has led to the development of a Fast-Track strategy to "end" the AIDS epidemic by 2030

- One of the challenges to achieve this goal is mobilization of the essential resources

- **A Winning "Trifecta" of Global Health Studies**
  - **2006 – The SMART Study: "The virus is worse than the drugs"**
  - **2011 – The HPTN 052 Study: "Treatment as Prevention" really works better than we thought**
  - ***2015 – The START Study: "Get on the drugs as soon as you know you are infected with HIV"***

HIV TREATMENT



World Health Organization

HIV TREATMENT TARGET

* The 90–90–90 target provides that by 2020: (a) 90% of all people living with HIV will know their HIV status; (b) 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy; and (c) 90% of people receiving antiretroviral therapy will achieve viral suppression.

How do Botswana's Results Compare to UNAIDS Targets?

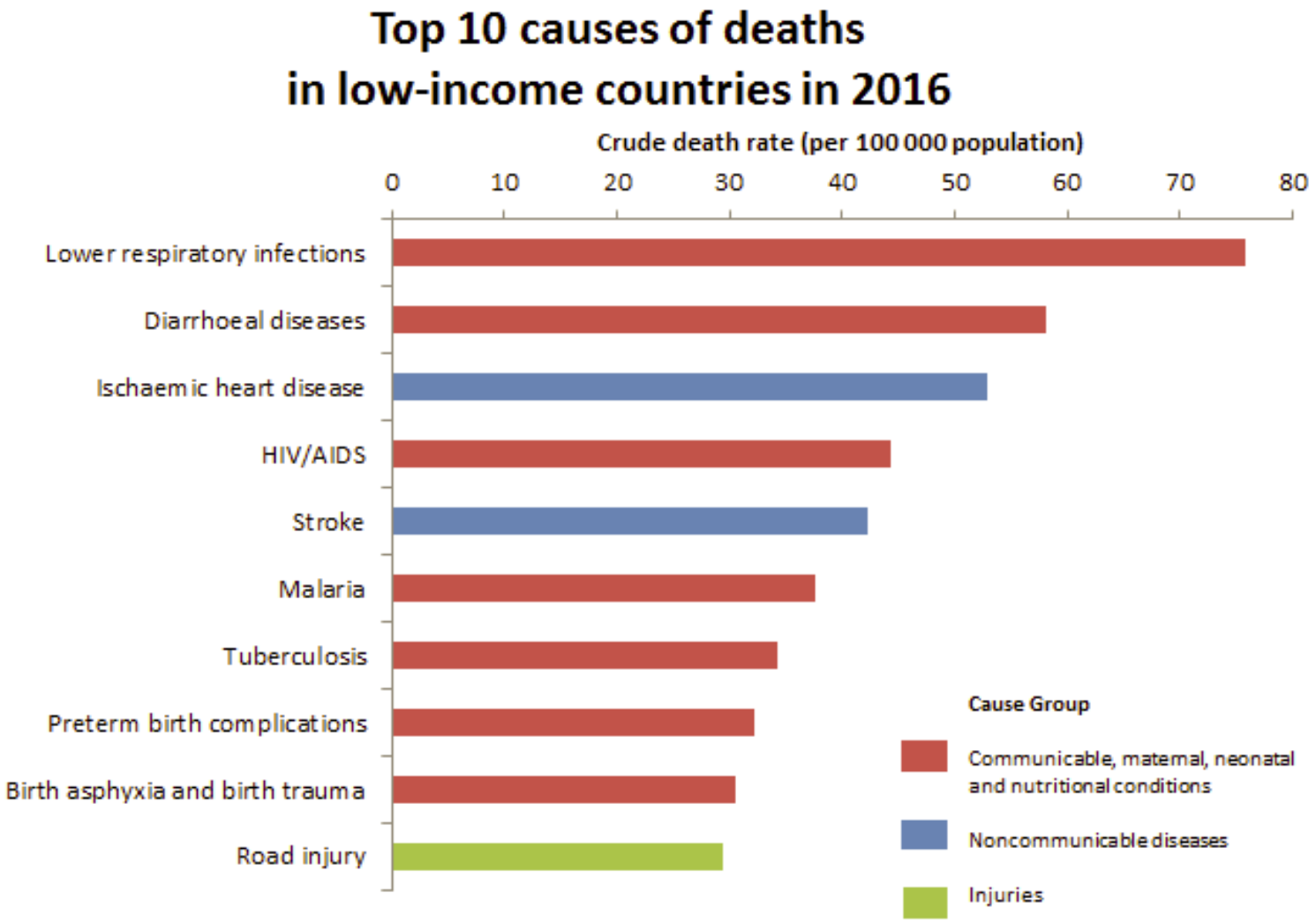
HIV positive who know their status	Currently on ART (among HIV+ who know status)	Virologically suppressed (among persons on ART)	Virologically suppressed (among all HIV-positive)

UNAIDS Targets:

90% x 90% x 90% = 73%

Current status in Botswana Communities:

83% x 87% x 96% = 70%



Source: Global Health Estimates 2016: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2016. Geneva, World Health Organization; 2018.
World Bank list of economies (June 2017). Washington, DC: The World Bank Group; 2017 (https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups).

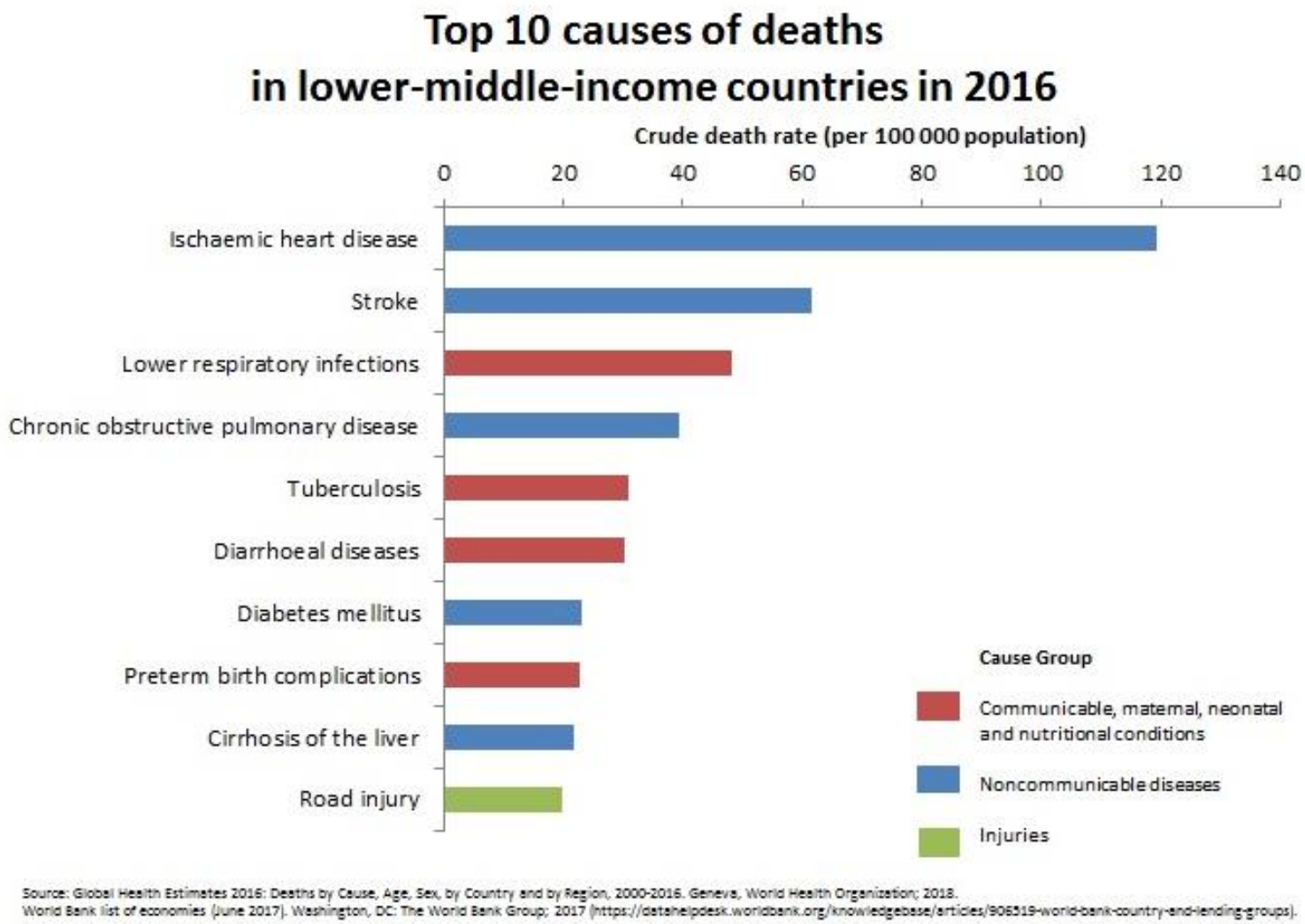


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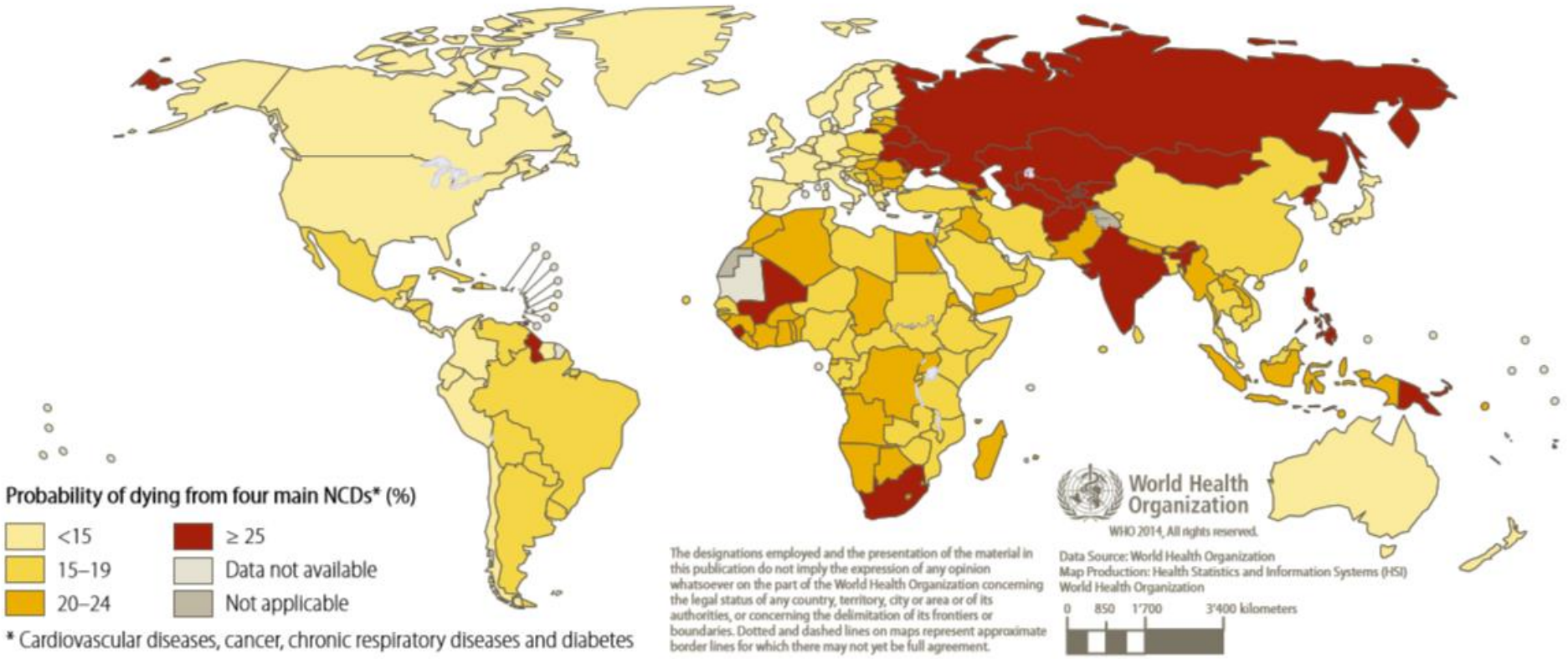
Fig. 1.5a Probability of dying from the four main noncommunicable diseases between the ages of 30 and 70 years, comparable estimates, 2012



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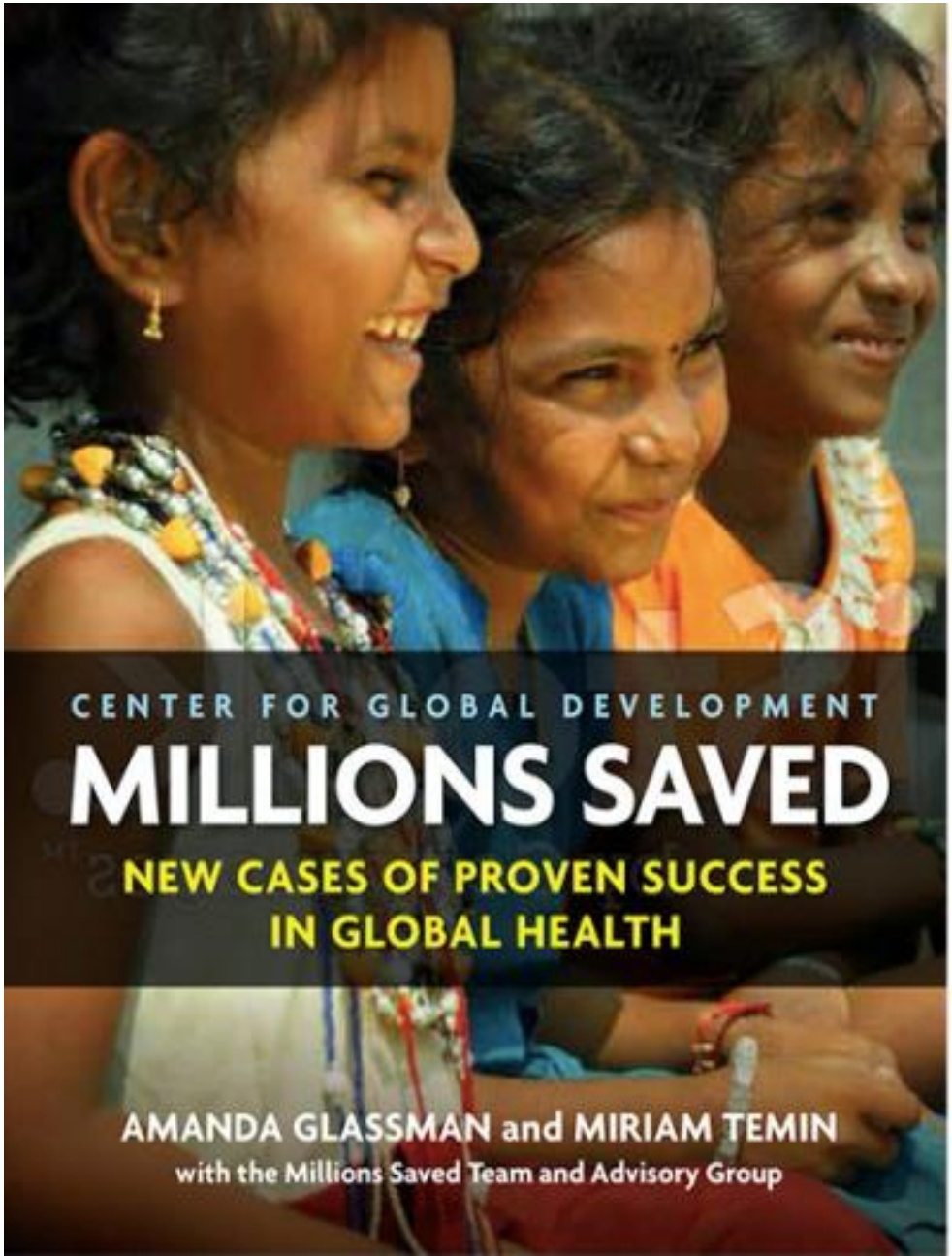

CENTER FOR GLOBAL DEVELOPMENT
MILLIONS SAVED
NEW CASES OF PROVEN SUCCESS IN GLOBAL HEALTH
AMANDA GLASSMAN and MIRIAM TEMIN
with the Millions Saved Team and Advisory Group

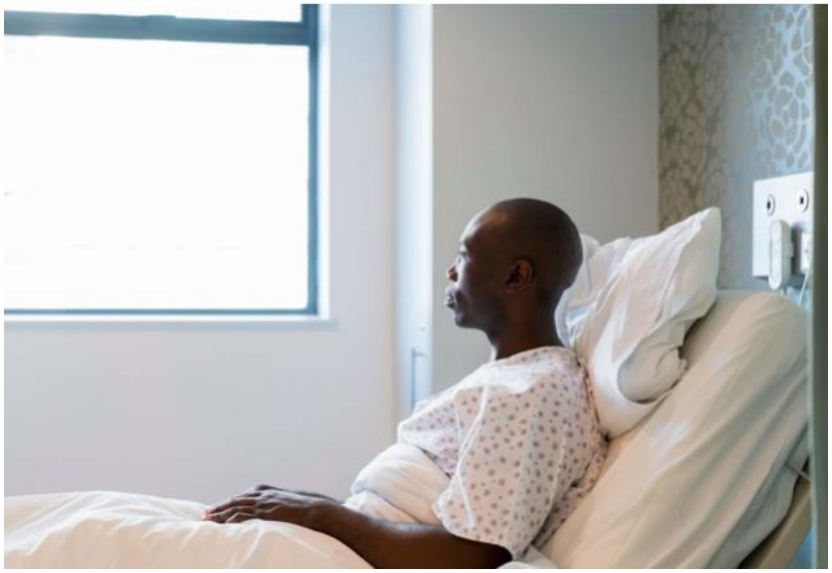
Key Lessons from "Millions Saved"

The Center for Global Development pulled the following key lessons from the 22 cases with 18 million years of lives saved "at a remarkably low cost":

- In nearly all cases, country government led the way
- Incentives matter for health results
- What works: efficacy is not the same as effectiveness
- Some health programs assess health impact, but many do not, and many needed types of data are unavailable – such as cost-effectiveness data
- Evidence requires its own advocacy; good evaluation is not enough
- Evidence must be translated into advocacy that results in policy change

Global Cancer: Data and Projections

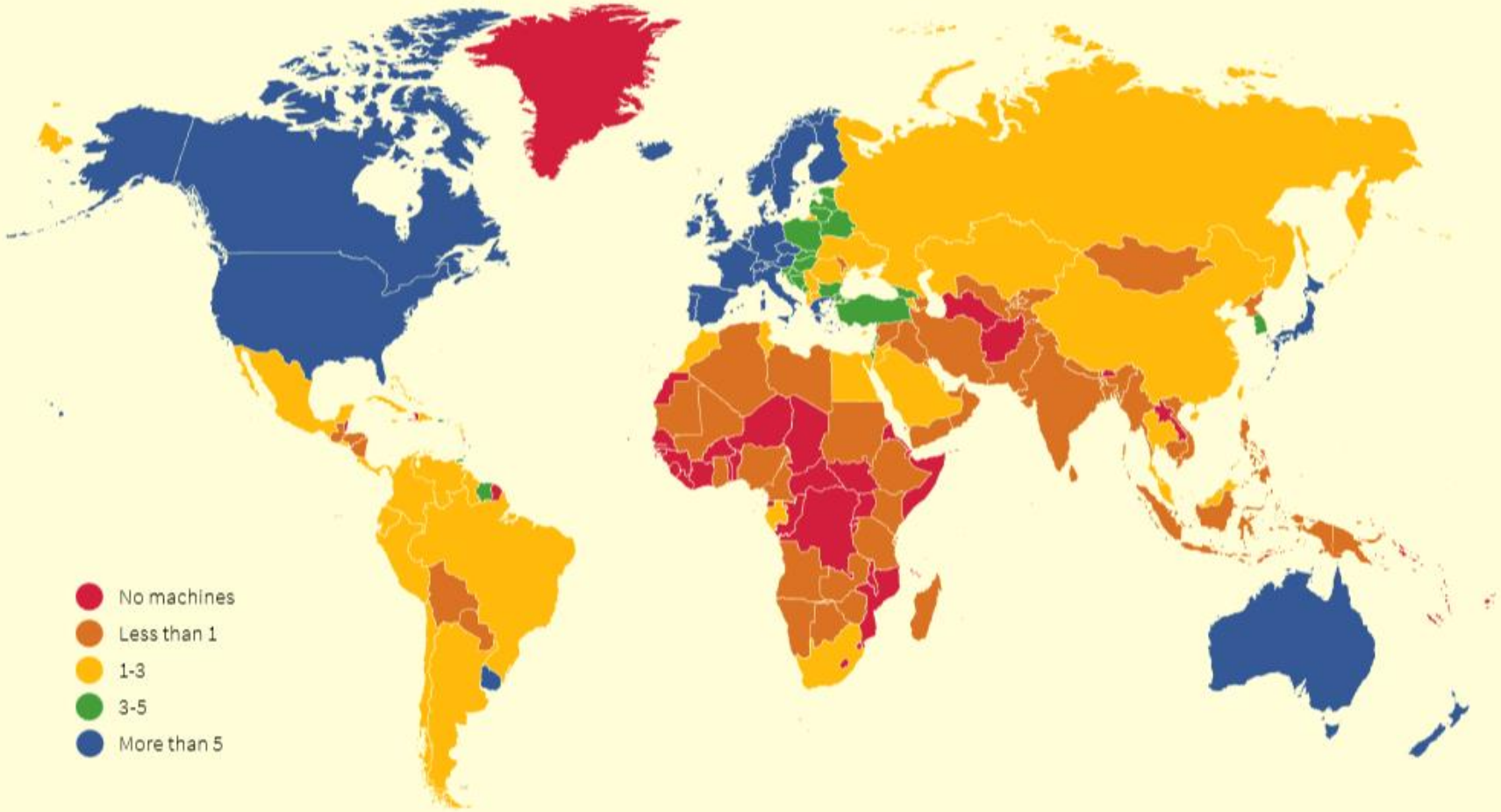
- In 2018, 18.1 million new cases and 9.6 million deaths were estimated
  - Top 3 cancers: lung, breast, prostate
  - 30% of cancer deaths are preventable
- More than 2/3 of all cancer deaths occur in low- and middle-income countries
- By 2040, the global burden of cancer is expected to grow to 27.5 million new cancer cases and 16.3 million cancer deaths
- Worldwide, one in 5 men and one in 6 women develop cancer during their lifetime



Case Fatality Rates

Region	Case Fatality Rate
Africa	**66%**
Eastern Africa	70%
Middle Africa	72%
Northern Africa	63%
Southern Africa	56%
Western Africa	67%
Northern America	**37%**
Europe	**46%**
Northern Europe	44%
Southern Europe	48%
Western Europe	45%
Australia/New Zealand	**36%**

Figure 5. Number of Radiotherapy Machines per 1 Million People, 2017



Source: Directory of Radiotherapy Centers (DIRAC). International Atomic Energy Agency, 2017.

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Botswana


GABON
RWANDA
BURUNDI
TANZANIA
SOUTH
ATLANTIC
OCEAN
ANGOLA
ZAMBIA
MALAWI
MOZAMBIQUE
MADAGASCAR
ZIMBABWE
NAMIBIA
BOTSWANA
SWAZILAND
SOUTH AFRICA
LESOTHO
MAURITIUS
RÉUNION

Cancer Care and Prevention in Botswana

Republic of Botswana

- **70%** of deaths from cancer occur in low- and middle-income countries
- People with cancer go undiagnosed or untreated
- Health systems lack personnel, training, and resources to provide chronic health care
- Comprehensive care and treatment is lacking

The fight against cancer urgently needs equitable and global approaches.

Cancer Care and Prevention in Botswana

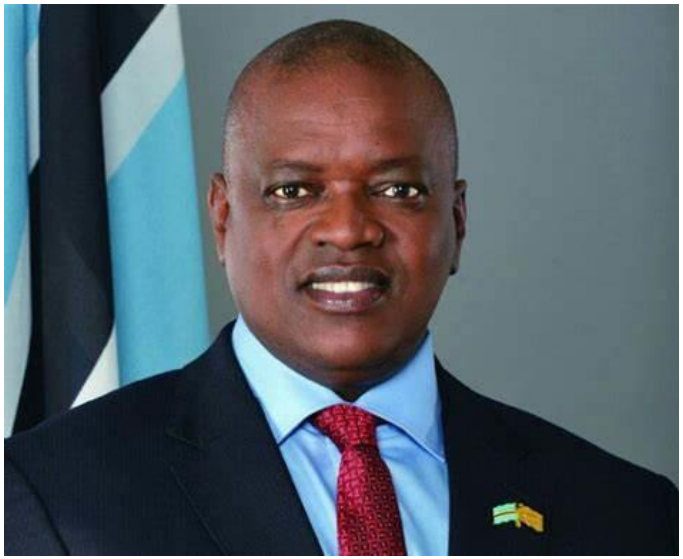
Botswana-Rutgers Partnership

Joint effort of the Government of Botswana, the University of Botswana, and Rutgers University

- specialty medical training
- health care workforce capacity building
- biomedical engineering education

Leadership and Commitment

- Presidential leadership on combatting HIV/AIDS
- Commitment to prevention HIV infection and caring for those affected across Ministries and sectors of Batswana society



Partnership

- National culture to partner to overcome epidemic, while maintaining control and guiding priorities

Innovation

- New HIV/AIDS therapies demonstrated dramatic results
- Innovative partnerships and financing – with Botswana also a fiscal partner
- New diagnostics and disease monitoring helped expand HIV/AIDS treatment
- Innovative, national training programs applying new technologies, expanded task sharing, and responsive, standardized evaluation were utilized
- Social marketing and media campaigns, in addition to investment in known, traditional communication forms were used

Program Components

- *Evidence-based HIV/AIDs components*: covering known prevention, care, and treatment interventions
- Importance of the existing clinic- and district-based leadership and management realized
- Patient-centered approach is implemented, allowing differentiated care and prevention efforts
- National scaling up of training, laboratory capacity, clinical capacity, pharmacy and supply chain management
- Simple or basic guidelines, messages, or other components so national scalability and consistency possible
- *Monitoring*: EMR for HIV/AIDS patients actually implemented, which also could monitor program outcomes and supply needs
- *Evaluation*: Eventually evaluations of both patient and program outcomes and impact were achieved, with findings used to advance program improvements

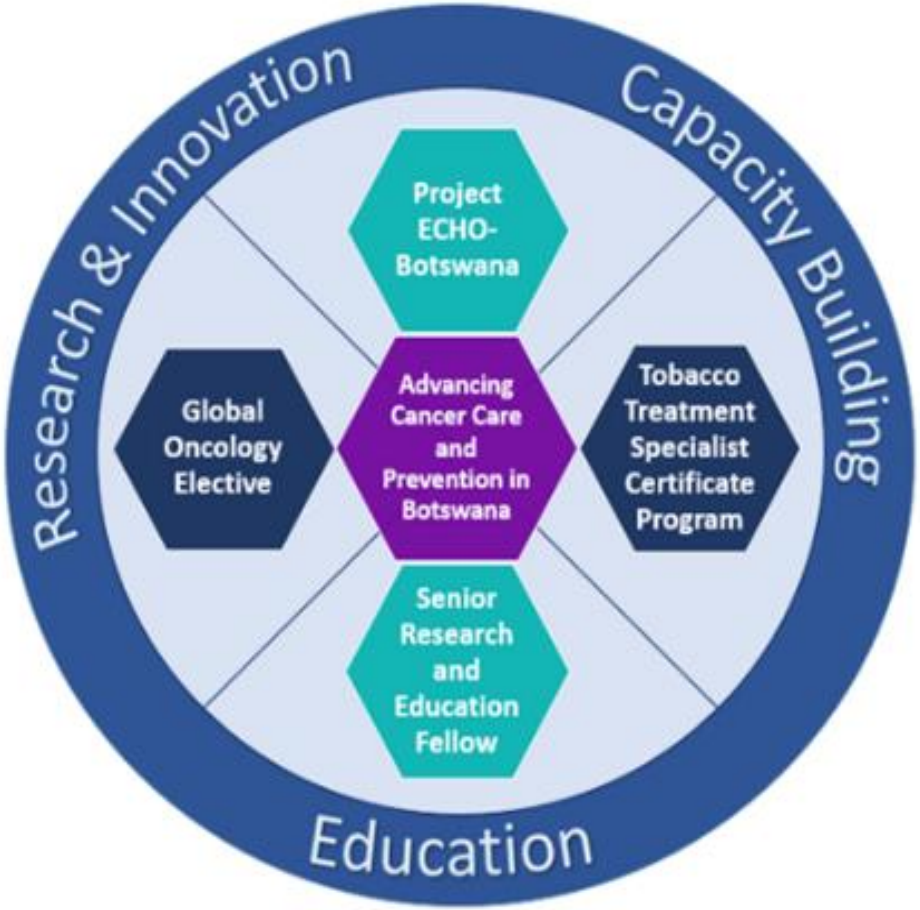
Communication

- Engagement of and communication with multiple sectors of society were critical
- New tools for communication developed, especially for health care training and specialized training
- HIV/AIDS program able to effectively communicate its successes and failures
- Media and private sector marketing were utilized to better tell the stories needed to communicate what the program meant and how the people could benefit
- Stigma reduction was a key goal in the communications activities

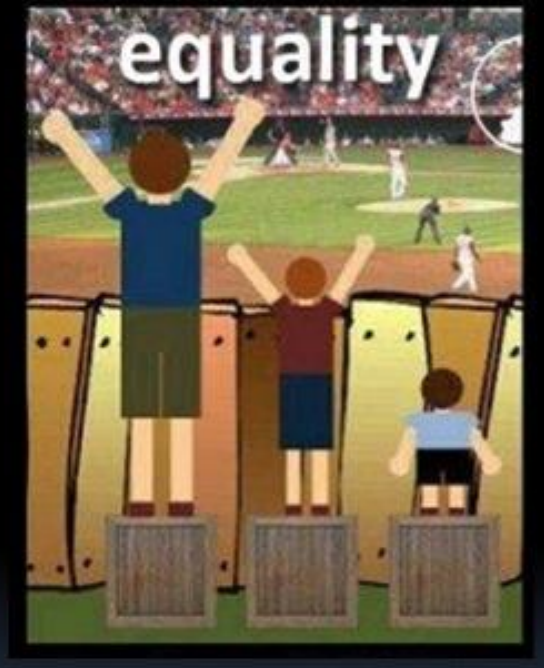
Cancer Care and Prevention in Botswana

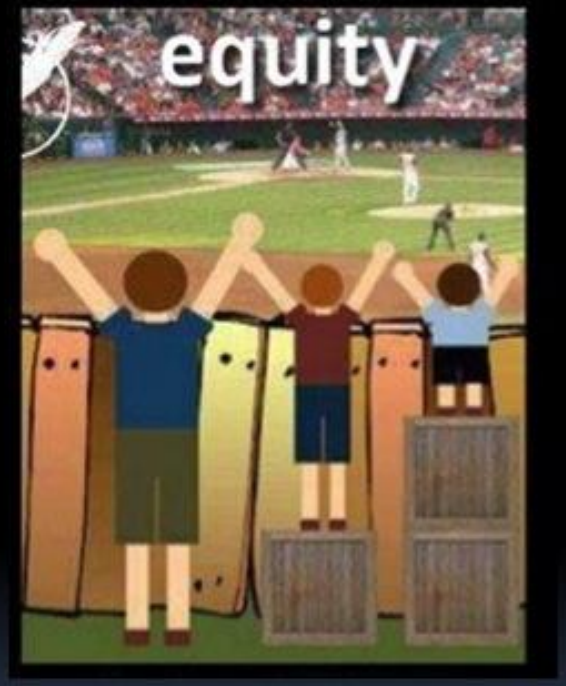
Three initial initiatives:

1. Global oncology fellowship program
2. Tobacco cessation program
3. Project ECHO - a distance, case-based mentoring program for specialty care and training



Equality vs. Equity





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