



Directions in Global Health

May 21, 2008

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Fogarty International Center
National Institutes of Health



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Rare Diseases can be a matter of context (time, place)

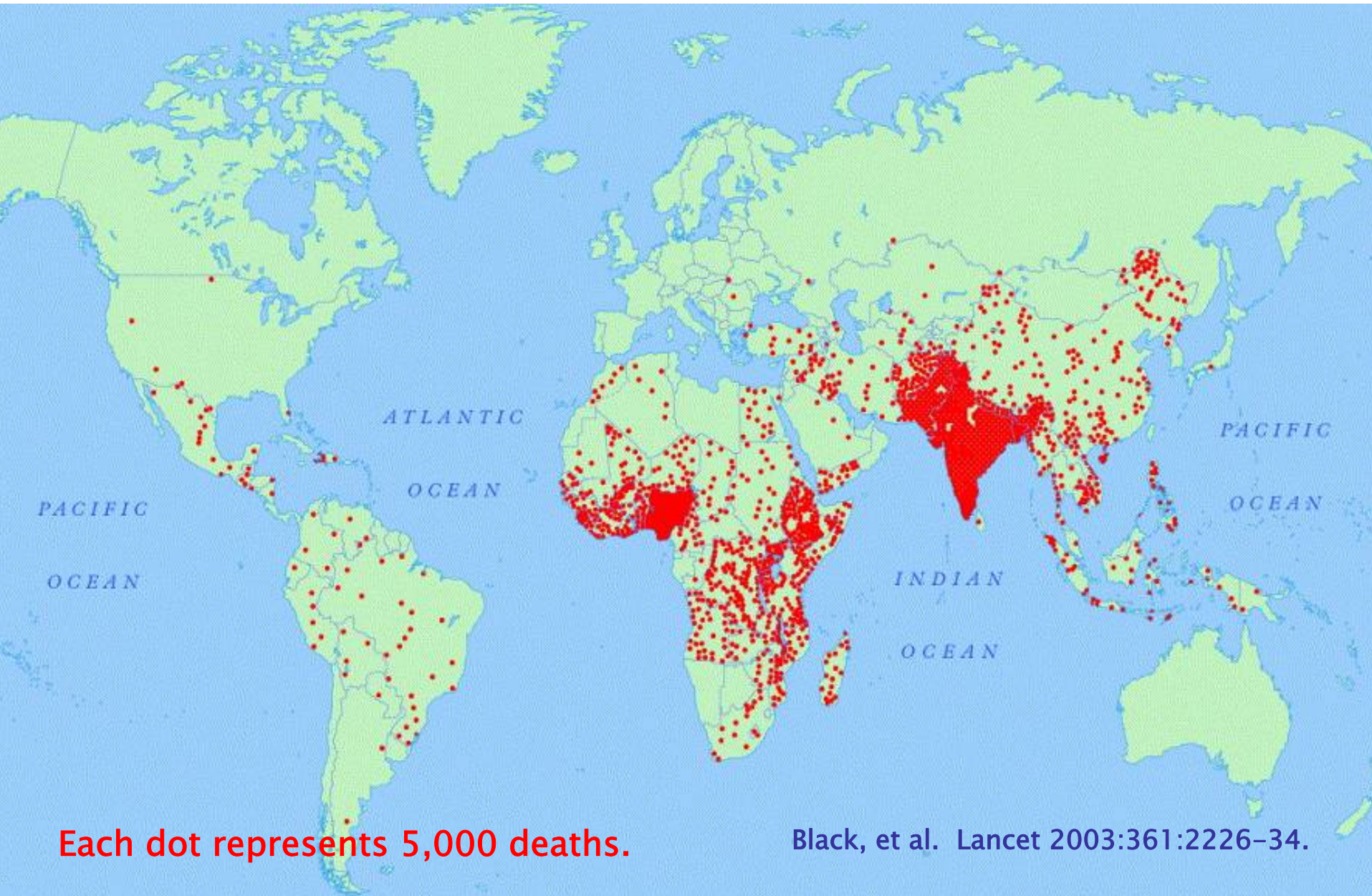
- Tuberculosis – worldwide killer (global infection)
- Malaria – worldwide killer (global infection)
- Huntington’s Disease (pocket of disease/genetic)
- Burkitts Lymphoma (pocket of disease/infection)
- Tobacco/Lifestyle-related disease (global/environmental)
- Climate change-related disease (global/environmental)



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Worldwide Distribution of Child Deaths



Each dot represents 5,000 deaths.

Black, et al. Lancet 2003;361:2226-34.

AMERICA'S
VITAL
INTEREST
IN
GLOBAL
HEALTH



INSTITUTE OF MEDICINE

1997 IOM Report

“The United States is currently the global leader in biomedical research...”

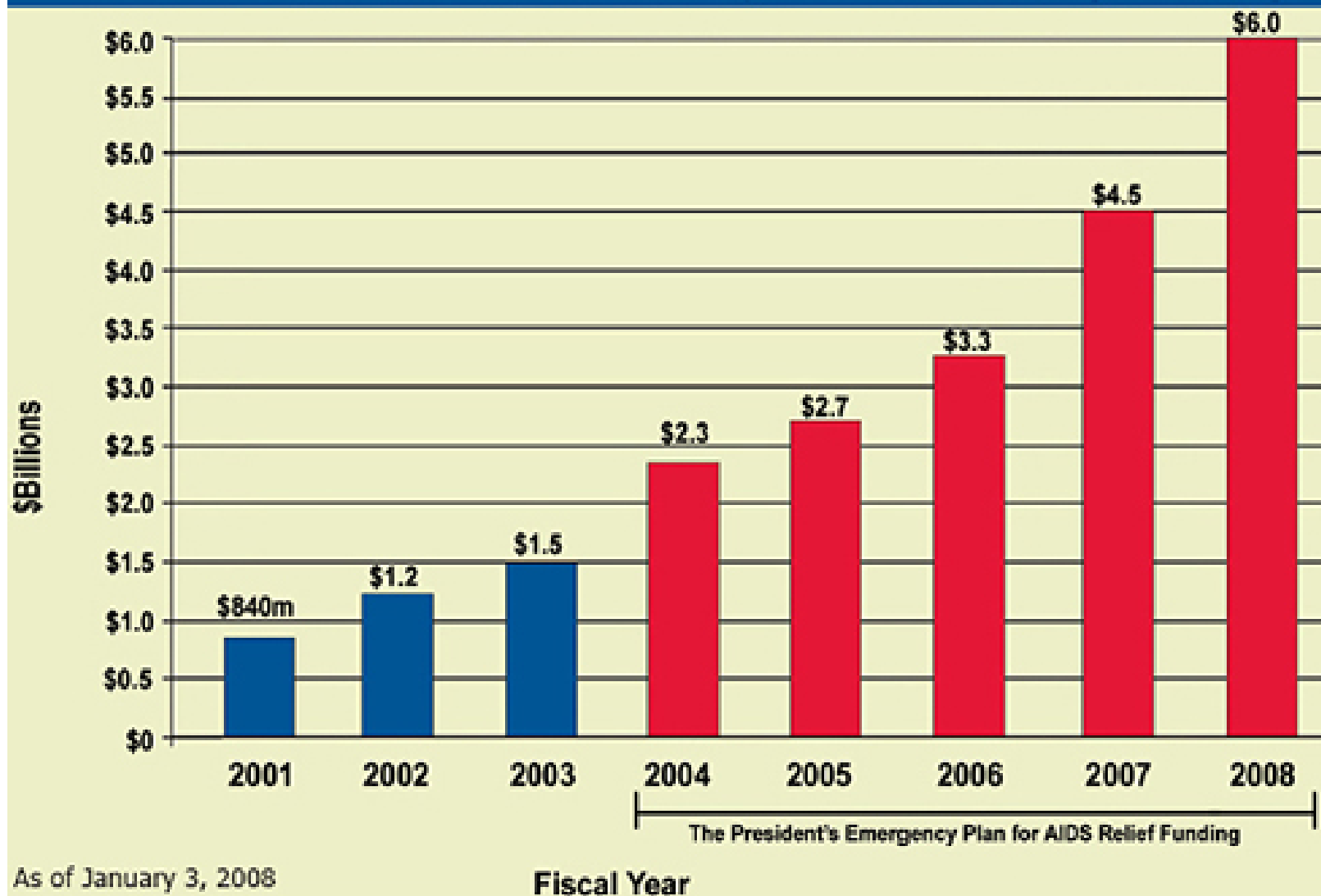
The failure to engage in the fight to anticipate, prevent, and ameliorate global health problems would diminish America's stature in the realm of health and jeopardize our own health, economy, and national security”



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Total USG Contribution to Global HIV/AIDS: 2001-2008 (in Billions)



As of January 3, 2008

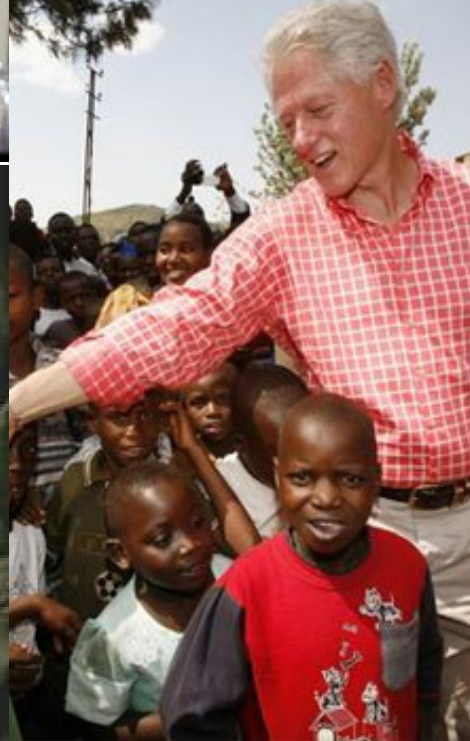
Fiscal Year



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Global Health Commitment



13 January 2006 | \$10

Science



The New World of
**Global
Health**

 AAAS

NOVEMBER 7, 2005

www.time.com AOL Keyword: TIME

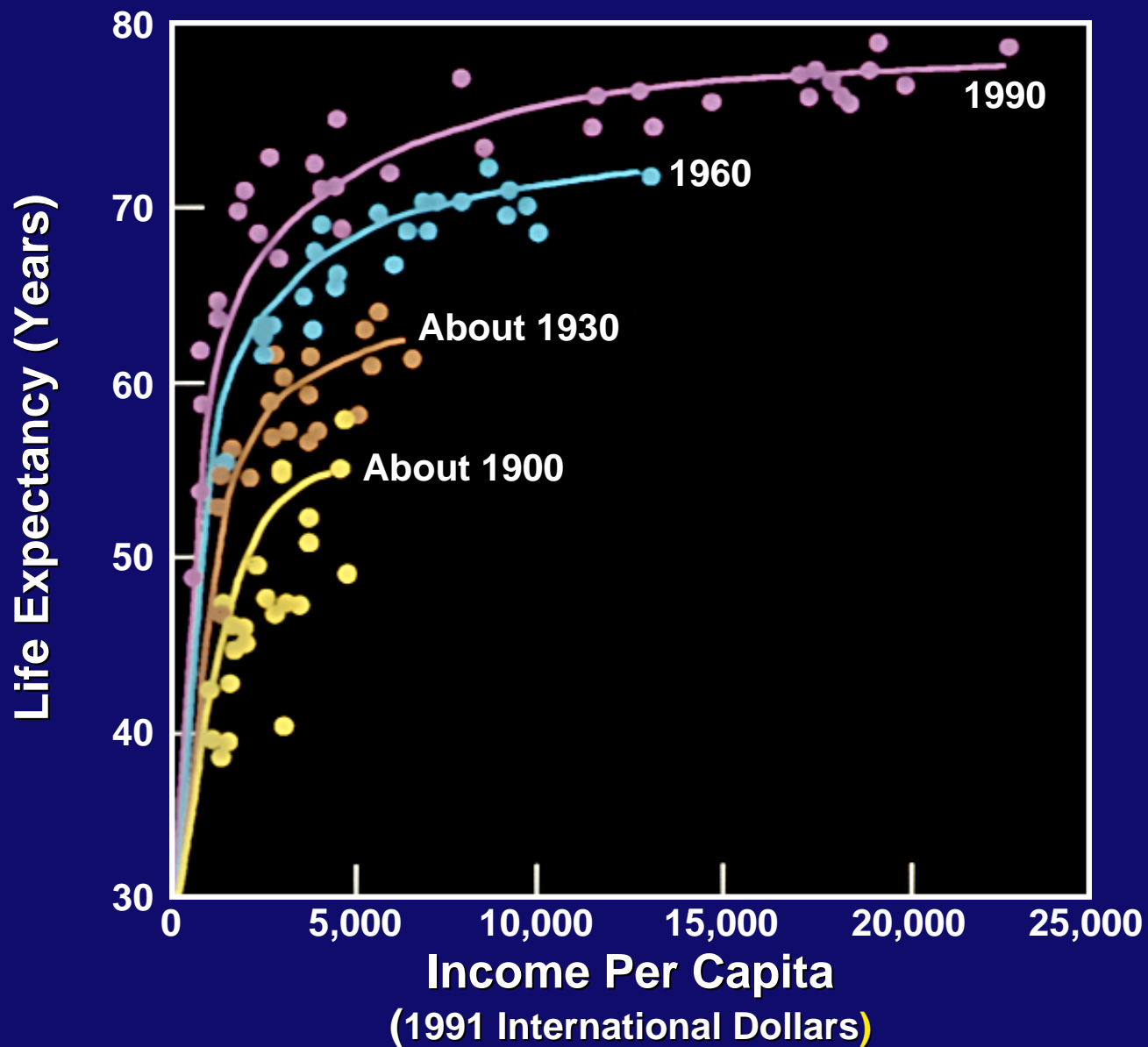
TIME

GLOBAL HEALTH

**HOW
TO SAVE
A LIFE**

A special report
on the world's most
dangerous diseases—
and the heroes
fighting them





Source: *World Development Report 1993* p. 34.



Life expectancy –China 1960-2000

- Life expectancy in China rose from 39 years in 1960 to 71 years in 2000
- ~ 8 years per decade for 4 decades
- The most rapid prolongation of life in history
- The consequences on health have been enormous



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GLOBAL BURDEN OF DISEASE (DALYS)

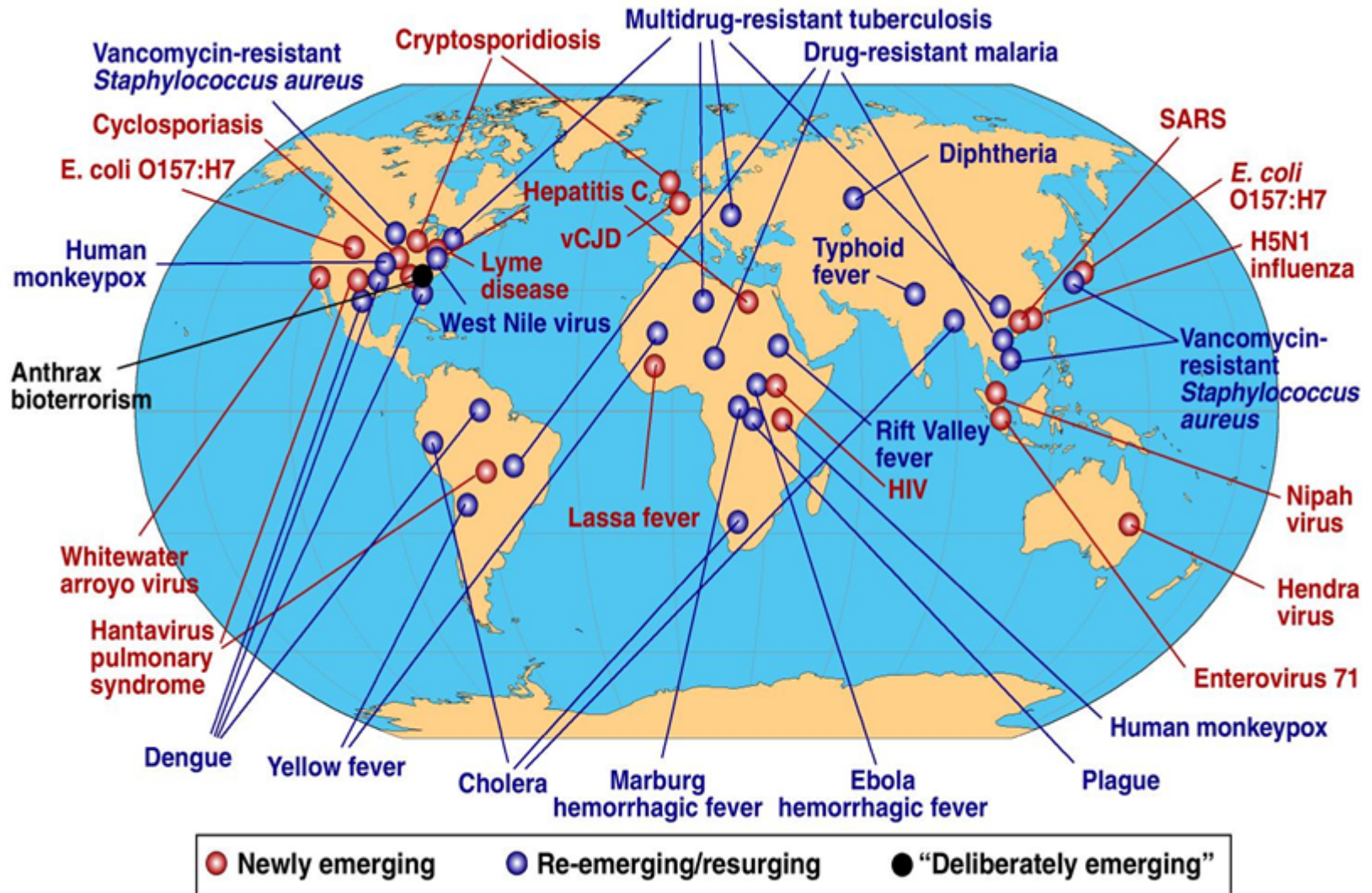
1990		2020	
Lower Respiratory Infection	1	Ischaemic heart disease	
Diarrhoeal Disease	2	Depression	
Perinatal	3	Road Traffic Accidents	
Depression	4	Cerebrovascular	
Ischaemic Heart Disease	5	COPD	
Cerebrovascular	6	Lower Respiratory Infection	
Tuberculosis	7	Tuberculosis	
Measles	8	War	
Road Traffic Accidents	9	Diarrhoeal Disease	
Congenital Diseases	10	HIV	
Malaria	11	Perinatal Disease	
COPD	12	Violence	
Falls	13	Congenital	
Iron-deficiency anemia	14	Self-inflicted injury	
Protein calorie malnutrition	15	Bronchial and Lung Cancer	

10 Best Buys for Health

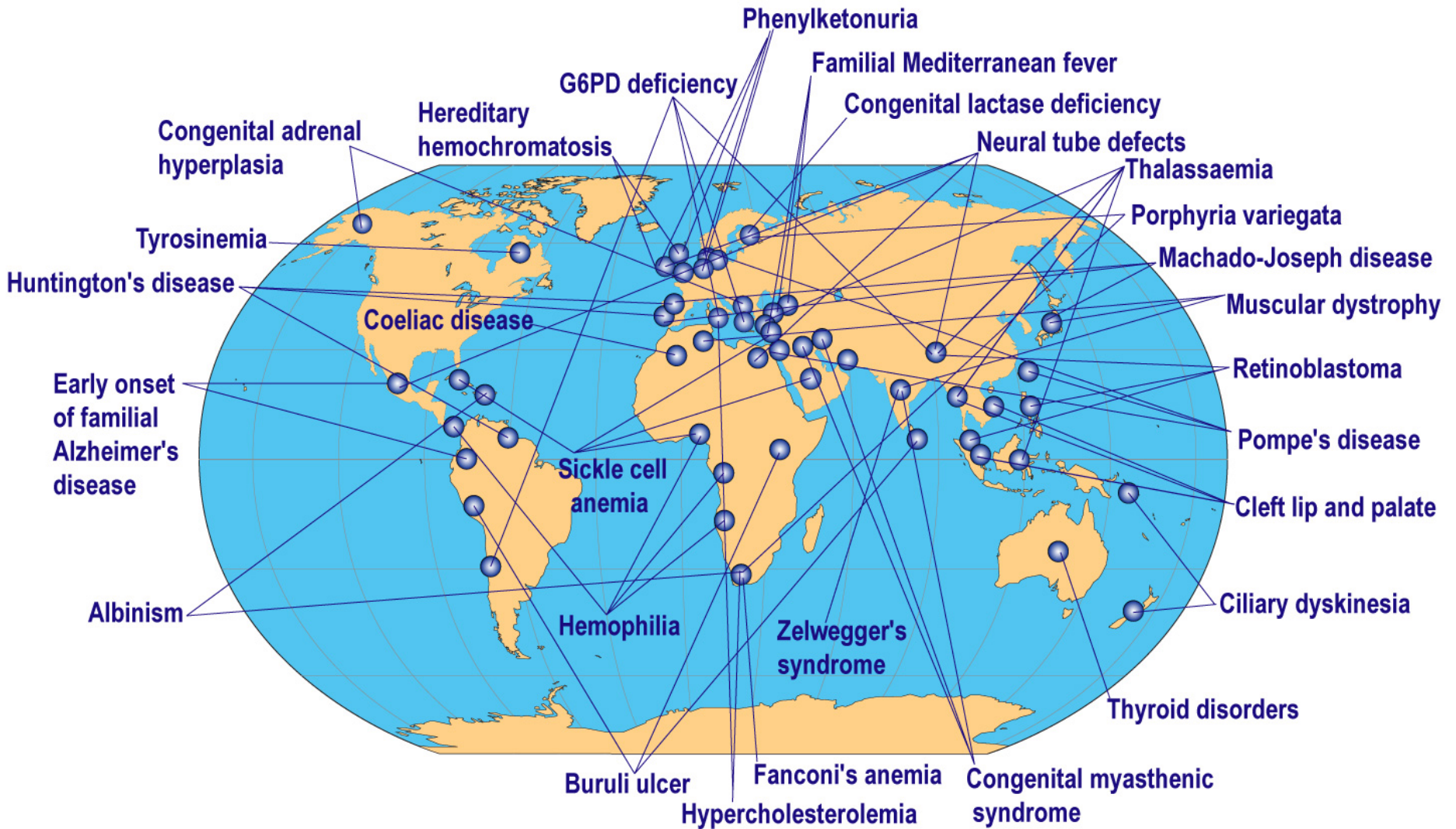
1. *Prevent neonatal mortality*
2. *Ensure healthier mothers and children*
3. *Promote good nutrition*
4. Reduce deaths from cardiovascular disease
5. *Stop the AIDS pandemic*
6. *Stop the spread of tuberculosis*
7. *Control malaria*
8. Combat tobacco Use
9. Reduce fatal and disabling injuries
10. Ensure equal access to high-quality health care

**Items in red may be related to non-communicable diseases*

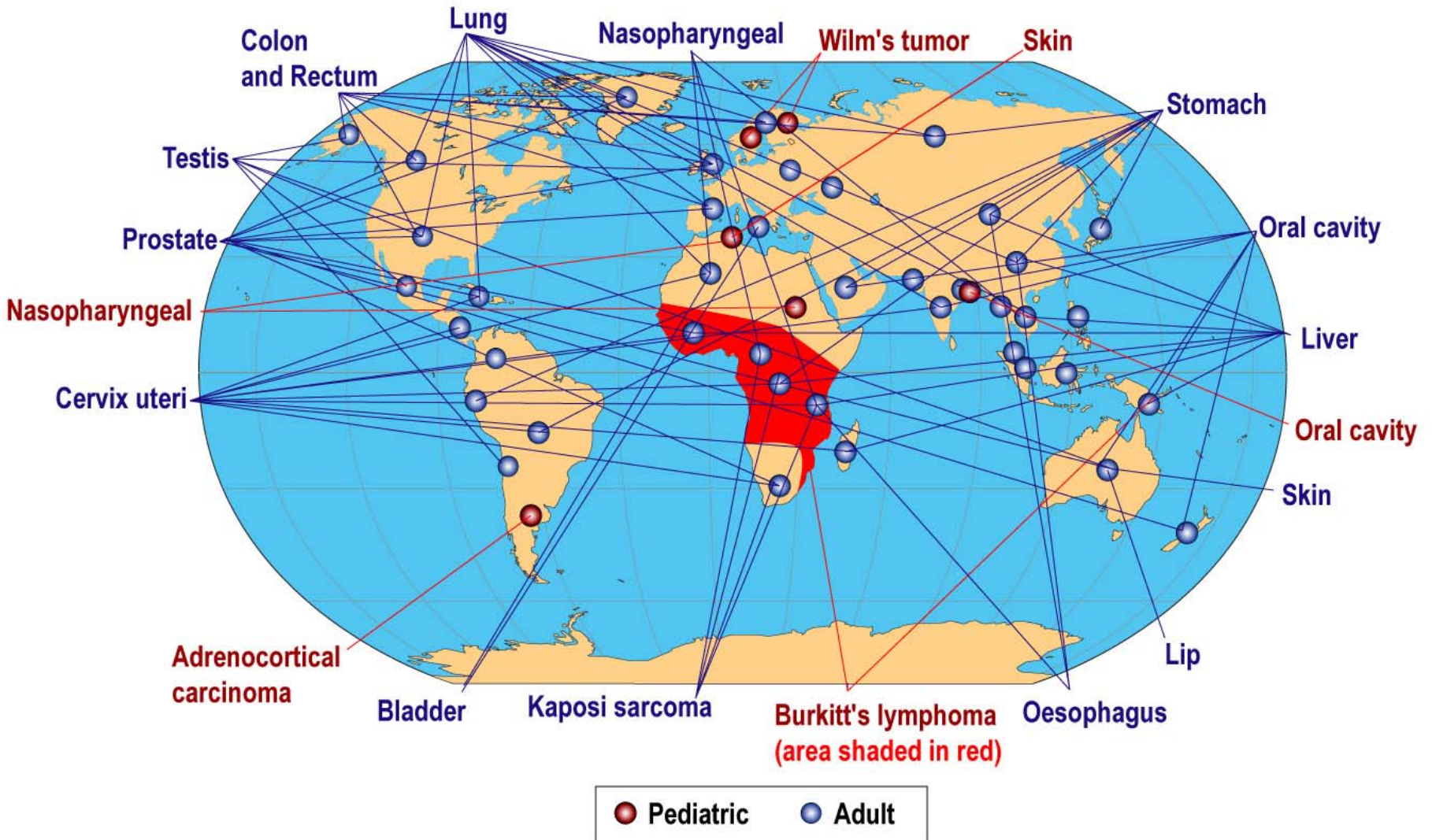
GLOBAL EXAMPLES OF EMERGING AND RE-EMERGING INFECTIOUS DISEASES (A.S. FAUCI)



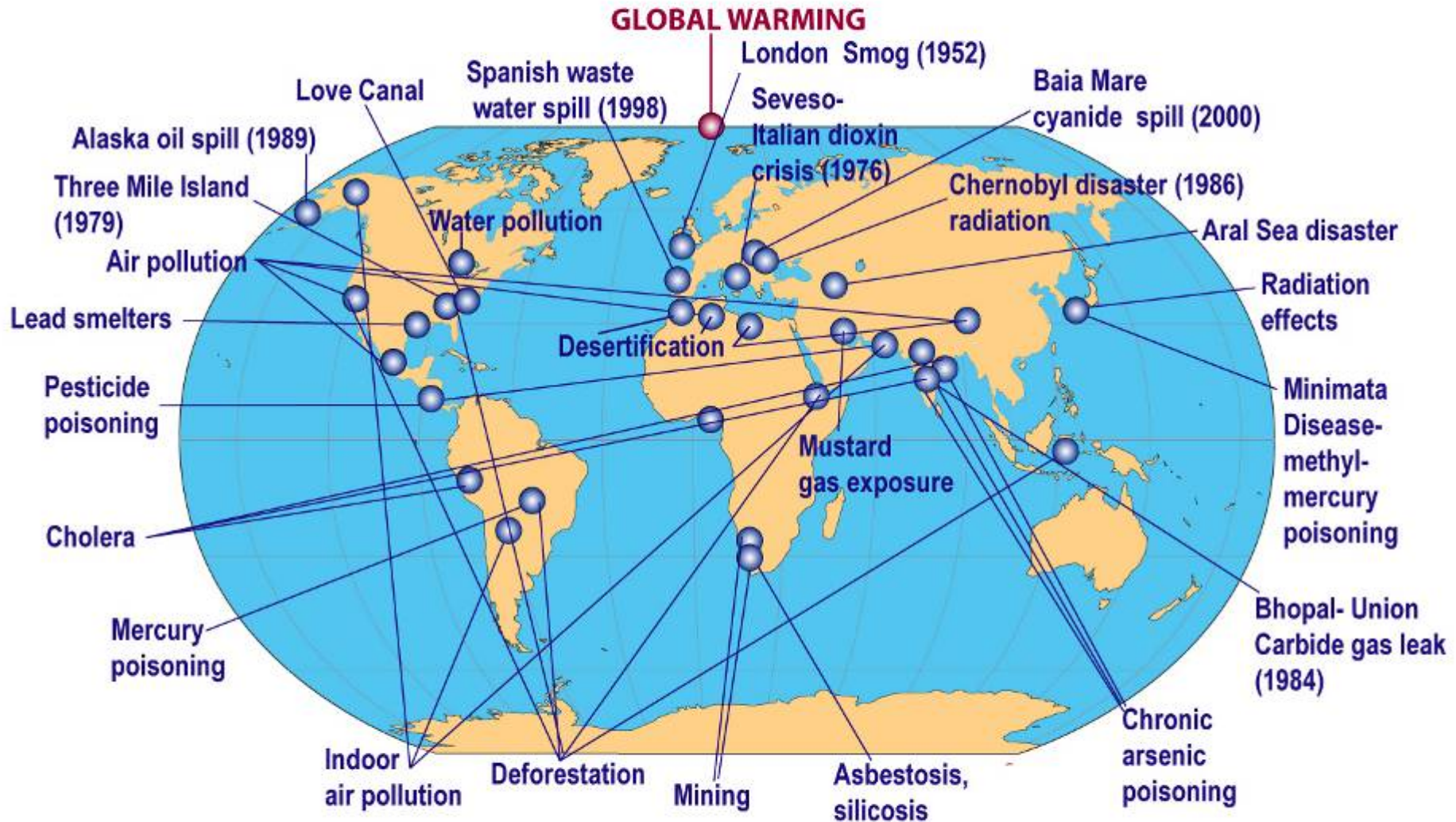
GLOBAL EXAMPLES OF GENETIC DISEASES AND DISORDERS



GLOBAL EXAMPLES OF PEDIATRIC AND ADULT CANCERS



GLOBAL EXAMPLES OF ENDURING ENVIRONMENTAL DISASTERS



Why do African American women develop more aggressive breast tumors than Caucasians?

Poor access to health care, environment, different genetic profile ?



Olufunmilayo Olopade (UIC)
Science , 314:592-4, 2007

Breast tumors without receptors for estrogen, progesterone, and HER2
“Triple Negatives”

African women	>70%
African-American	39%
Caucasians	16%

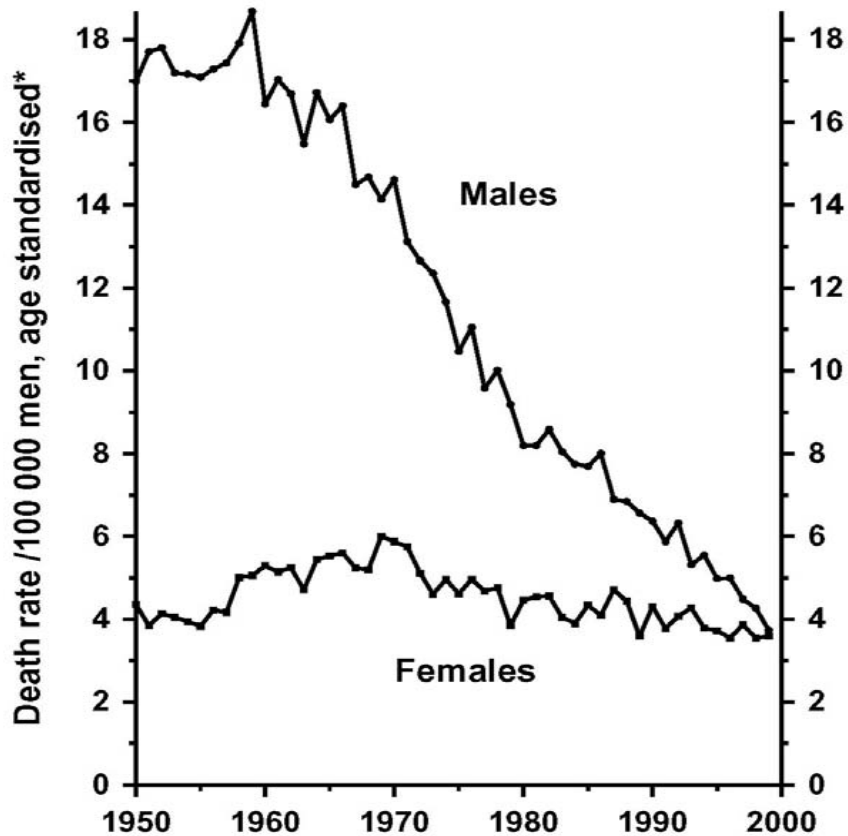


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Lung cancer rates in the UK and France, at ages 35-44, 1950-2000

**UNITED KINGDOM 1950-1999: Males & Females
Lung cancer mortality at ages 35-44**

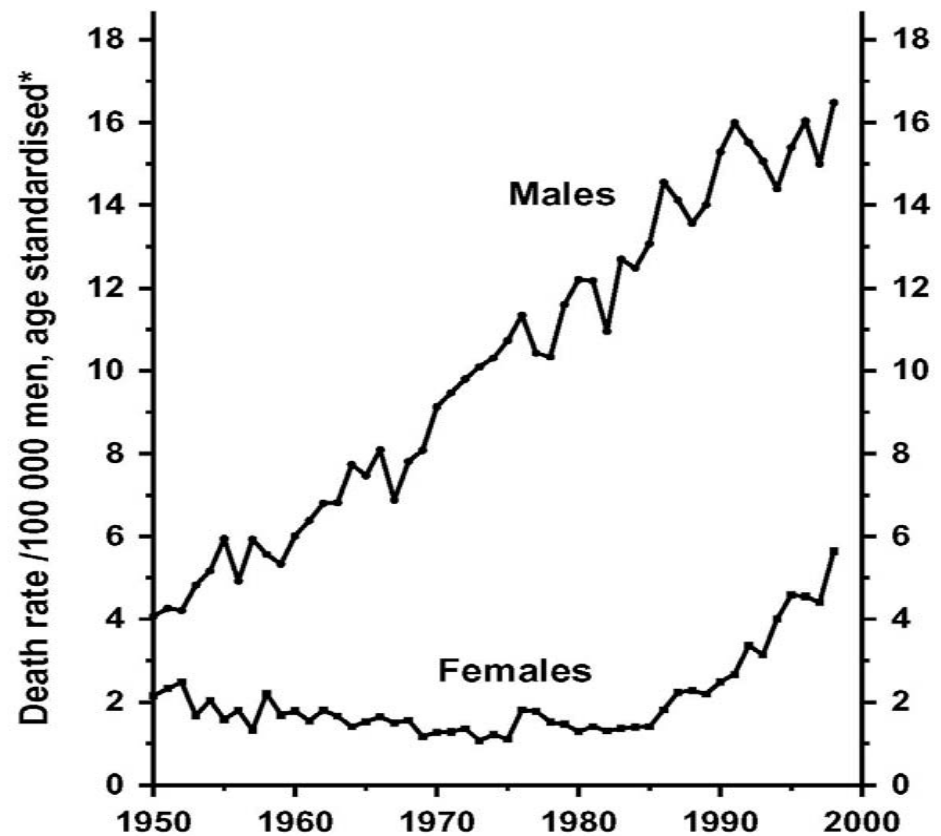


*Mean of annual rates
in component 5-year age groups

Source: WHO mortality &
UN population estimates

23-MAY-2003 16:14:36

**FRANCE 1950-1999: Males & Females
Lung cancer mortality at ages 35-44**



*Mean of annual rates
in component 5-year age groups

Source: WHO mortality &
UN population estimates

23-MAY-2003 16:07:03



While smoking declines (modestly) in the United States,



China is becoming the world's largest cigarette consumer

- Men 63-73%, Women 1-4%
- 55% of Doctors Smoke
- 2025: 3 million annual tobacco-related deaths
- 1% increase means 10 million new smokers!



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Worldwide Obesity

- 1 billion adults are overweight
- 300 million adults are obese (BMI > 30)
- 22 million children are overweight
- Increases the risk for coronary heart disease, type 2 diabetes, and certain cancers.
- Total economic cost of obesity is \$117 billion per year (incl \$50 billion in avoidable medical costs)
- 5 percent of total annual health care expenditures.



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The Fogarty Strategic Plan – 2008

Pathways to Global Health Research

- Train the next generation of U.S. & foreign global health researchers
- Continue infectious disease focus - expand chronic diseases portfolio
- Bridge the implementation research-training gap to accelerate application of research knowledge on a global scale
- Build sustainable capacity for health science research, through institutional partnerships and research collaborations
- Foster a sustainable research environment in LMIC
Develop research hubs & bolster use of IT



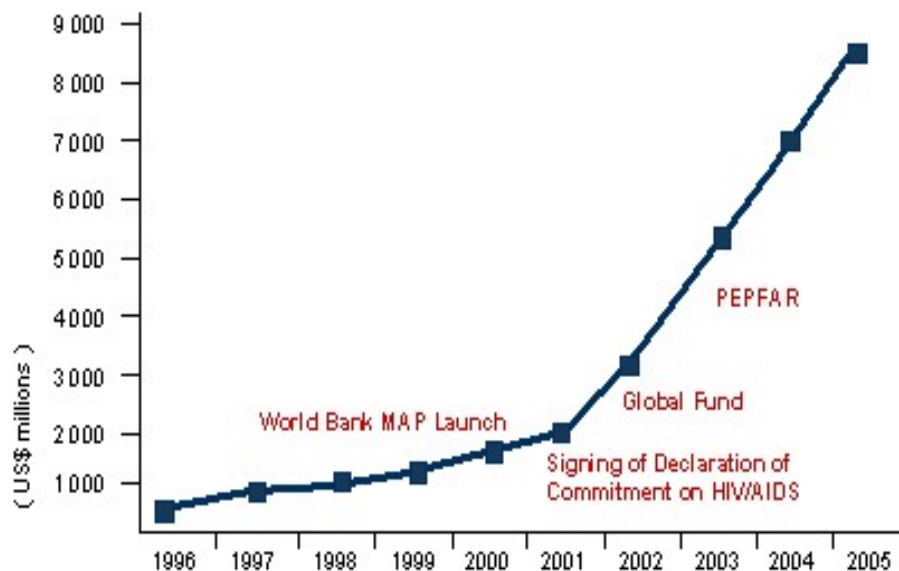
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Overseas Assistance in AIDS and Health

- HIV/AIDS funding up from 8% to 21% of health funding between 2000 and 2004
- During same years, funding for basic health infrastructure medical training, and health personnel development fell from 3% to 2%

Estimated total annual resources available for AIDS, 1996–2005




Source: *Lancet* 2006; 368: 525–30



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Glad I
am here
so that
you can
get it
right

Technical assistance:

- Often overpriced
- Can be inappropriate
- Can distort local systems
- Can diminish local capacity

Working together for health

The World Health Report 2006  World Health Organization

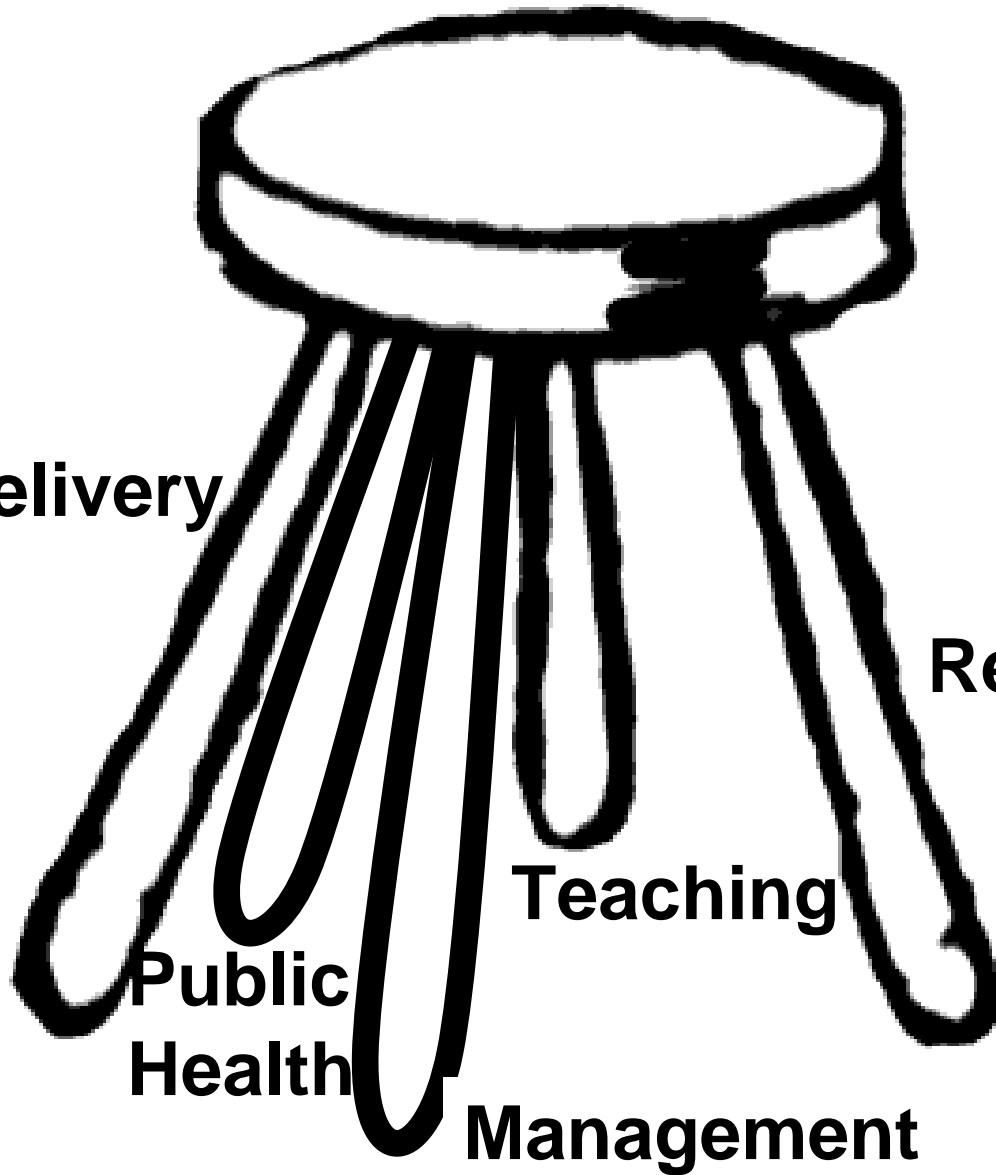
- **Consistent correlation between density of health workers and probability of survival**
- **Africa has 24% of disease burden, 3% of health workers, 1% of health expenditure**
- **Academic model should integrate clinical care, teaching, research, public health, management**



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Health Professions Training Institutions



Service Delivery

Research

Teaching

**Public
Health**

Management



The New York Times

Sunday, February 10, 2008

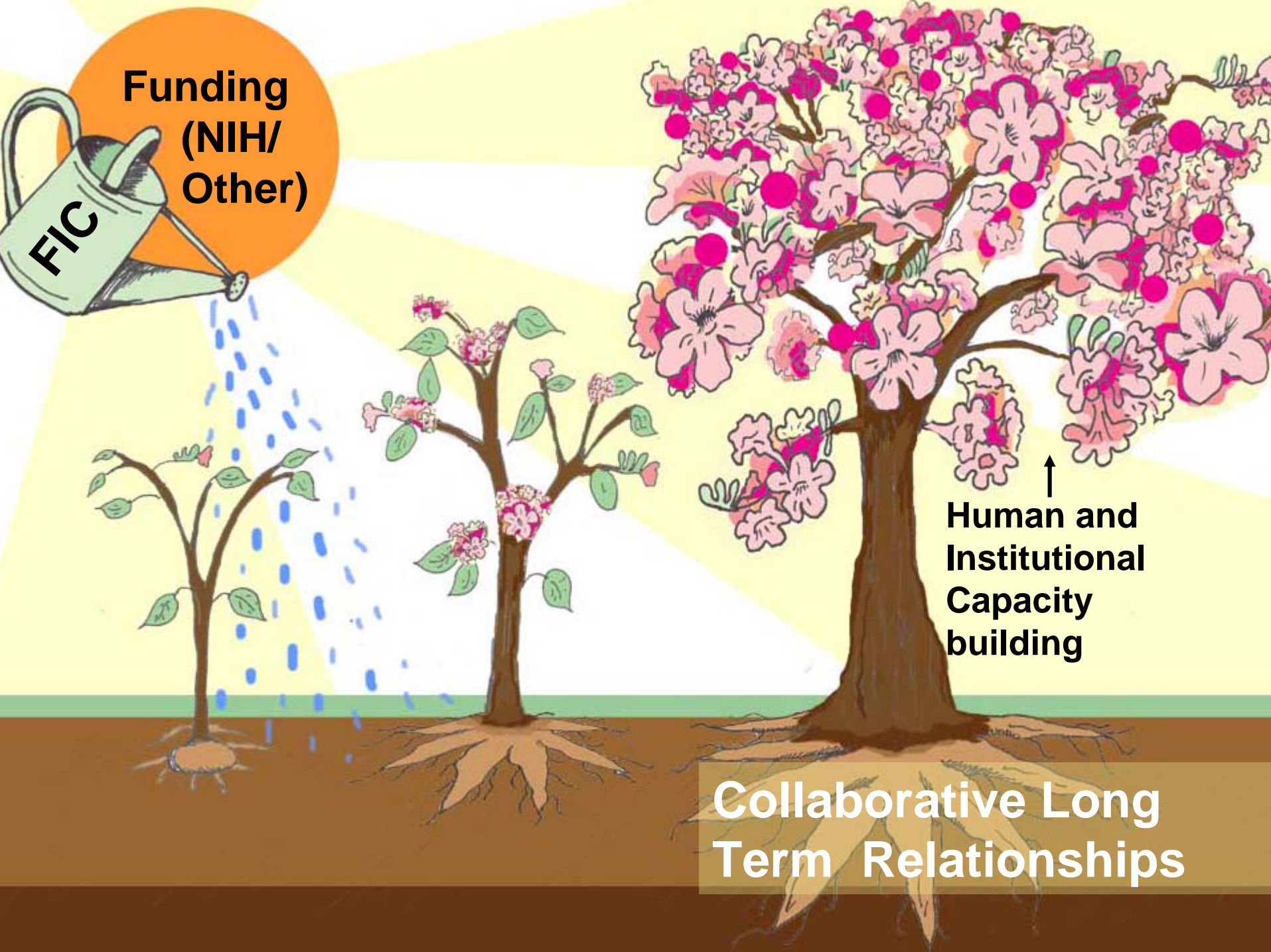
Global Classrooms

U.S. Universities Rush to Set Up Outposts Abroad



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Funding
(NIH/
Other)

FIC

↑
Human and
Institutional
Capacity
building

Collaborative Long
Term Relationships



Pedro Chequer,
Director, National
STD/AIDS Program,
MOH, Brazil



Salim Abdool Karim,
Director, CAPRISA
S. Africa



Jean Pape,
Director, GHESKIO,
Haiti



Philippa Musoke,
Chair of Pediatrics,
Makarere University,
Uganda



Glenda Gray,
Co-founder/Co-Director,
Perinatal HIV Research
Unit, Chris Hani
Baragwanath Hospital,
South Africa

AITRP (Aids Intn'l Training & Research Program (1988-...))

Investing in Leaders



David Serwadda,
Director, Institute of Public
Health, Makarere University,
Uganda



Marcos Espinal, Stop
TB Partnership
Secretariat, World
Health Organization



Zunyou Wu, Director, National
Center for AIDS/STD Control &
Prevention, Chinese CDC, China



Patricia Garcia, Chief,
National Institute of Health,
Peru



Ruth Nduati,
Faculty of Medicine, College of
Health Sciences, University of
Nairobi

