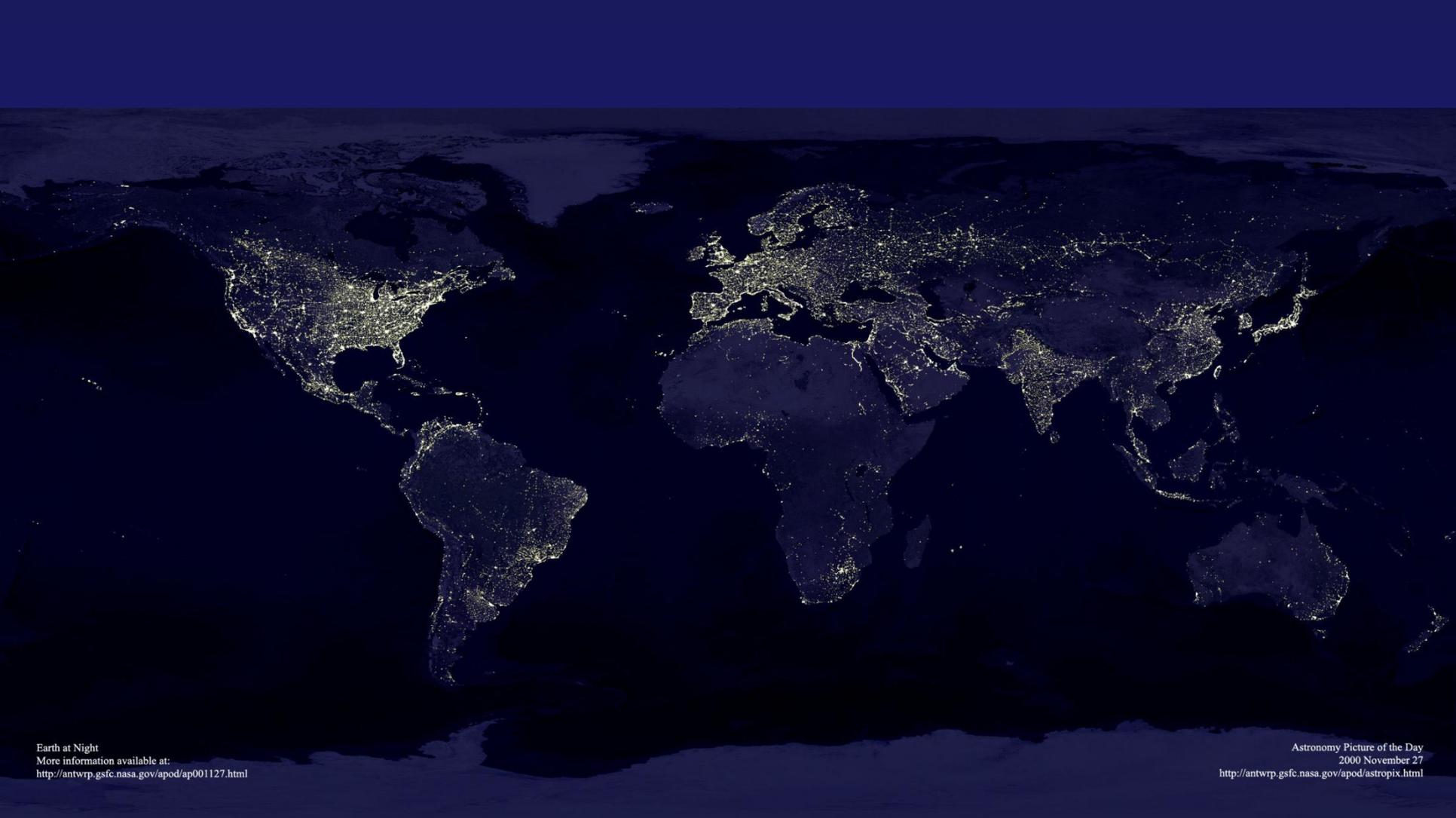


# Translational Research and Advocacy: New Paradigms for Equity

*Joia S. Mukherjee, MD, MPH*  
*Medical Director, Partners In Health,*  
*Associate Professor, Harvard Medical School*





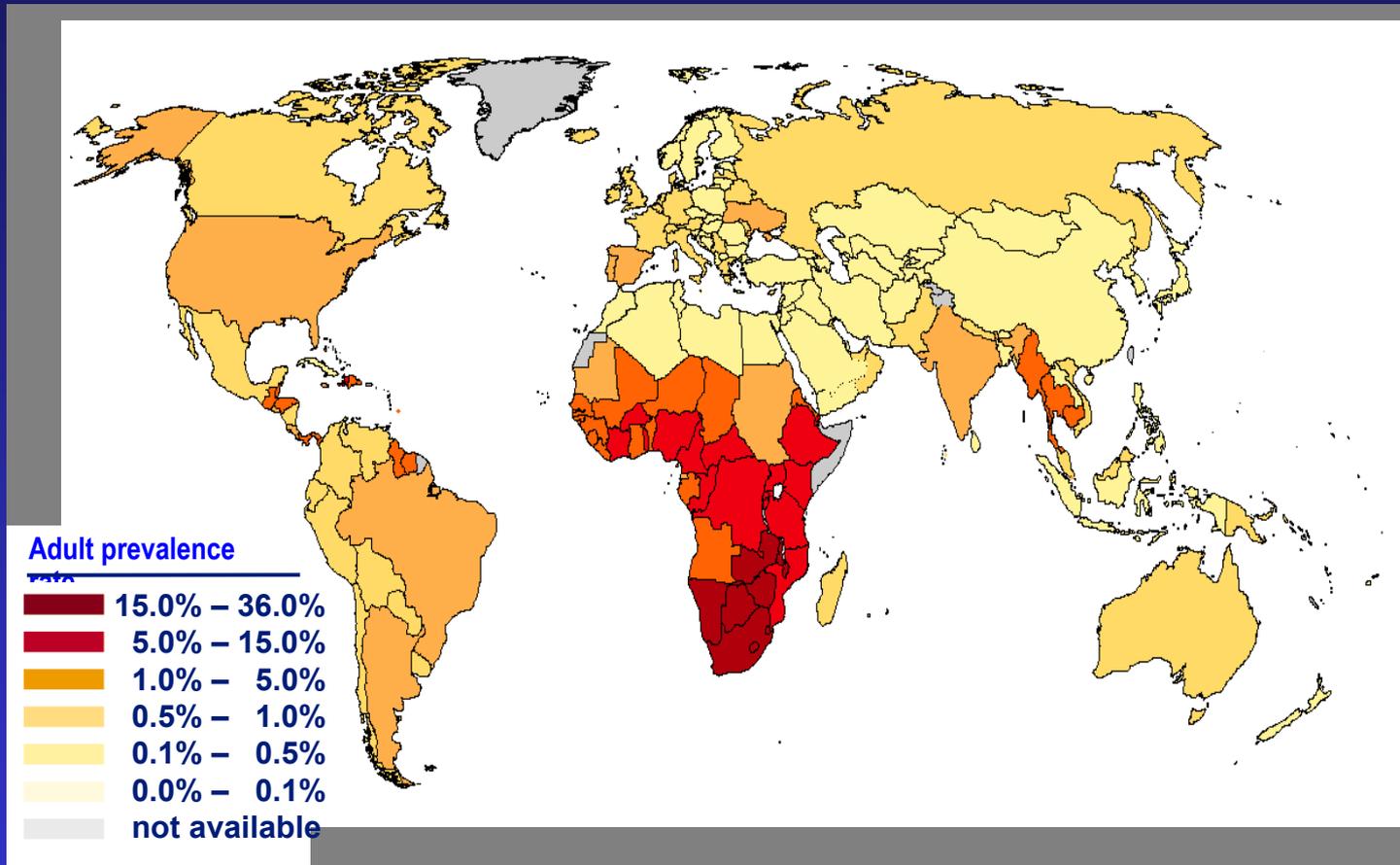
Earth at Night  
More information available at:  
<http://antwrp.gsfc.nasa.gov/apod/ap001127.html>

Astronomy Picture of the Day  
2000 November 27  
<http://antwrp.gsfc.nasa.gov/apod/astropix.html>

Image courtesy of NASA. Credit: C. Mayhew & R. Simmon (NASA/GSFC), NOAA/ NGDC, DMSP Digital Archive



# Global Prevalence of AIDS

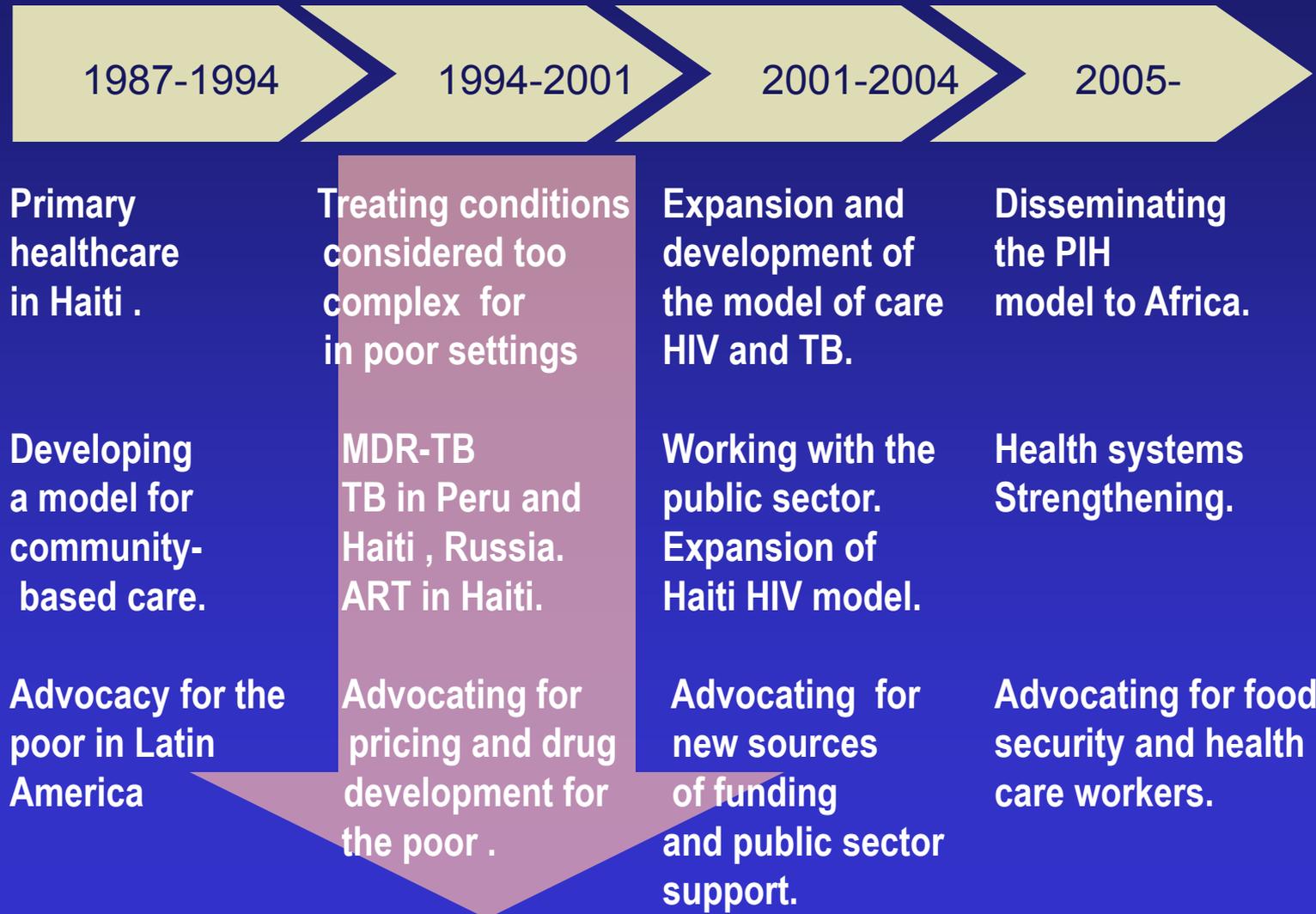


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WHO, 2003



# PIH Time Line

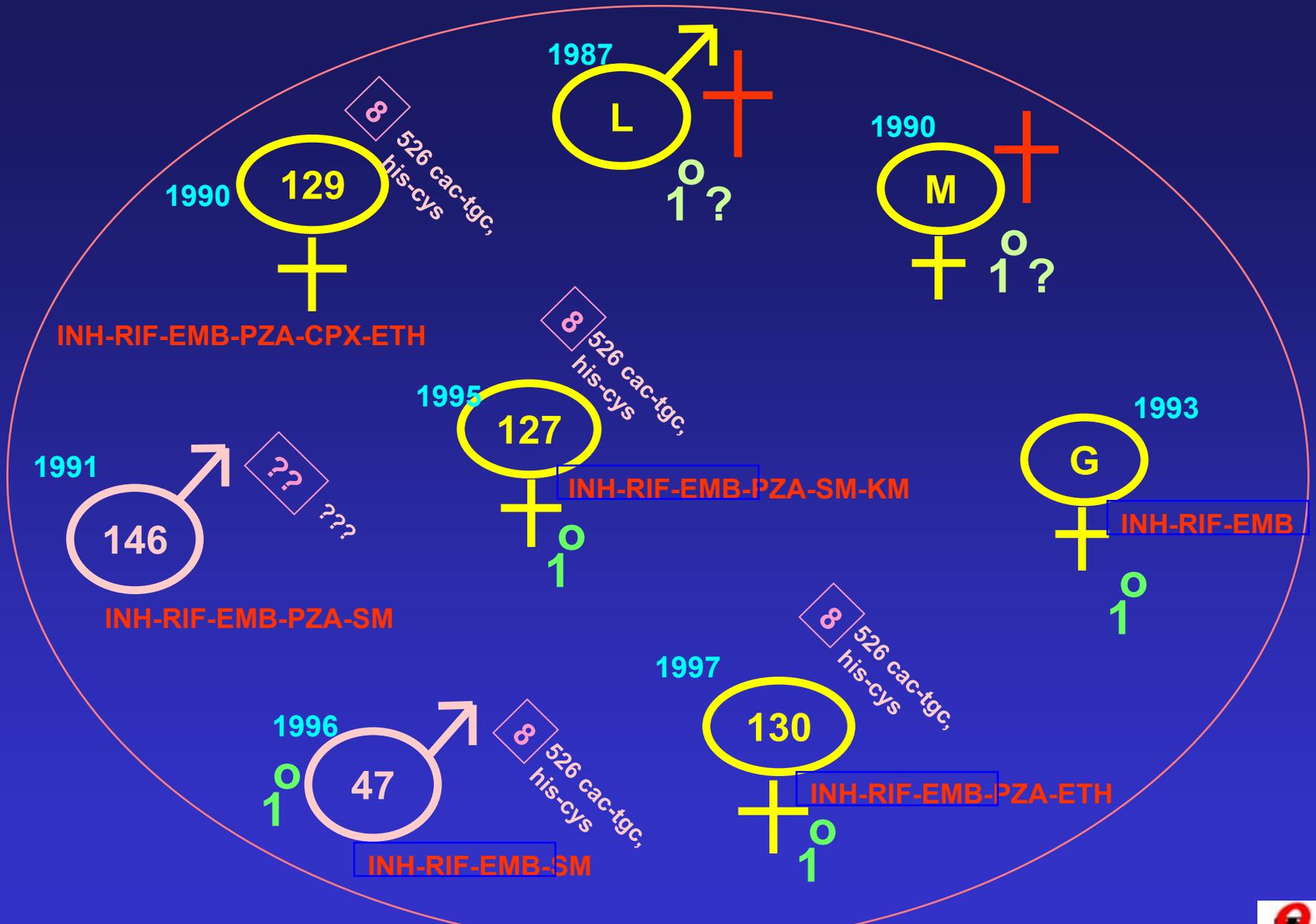




Courtesy of Partners in Health. Used with permission.

PIH Socios en Salud project 1999





Becerra MC, et al. Public Health Rep 2005; 120(3):271-7



X-ray image showing cross-section of back removed due to copyright restrictions.

Pott's disease in 2.5 year old patient presenting with paresis



Image removed due to copyright restrictions.

Mukherjee JS, Joseph JK, Rich ML. et al. Clinical and programmatic considerations in the treatment of MDR-TB in children: a series of 16 patients from Lima, Peru. *Int J Tuberc Lung Dis.* 2003;7(7):637-44.



# PIH Time Line

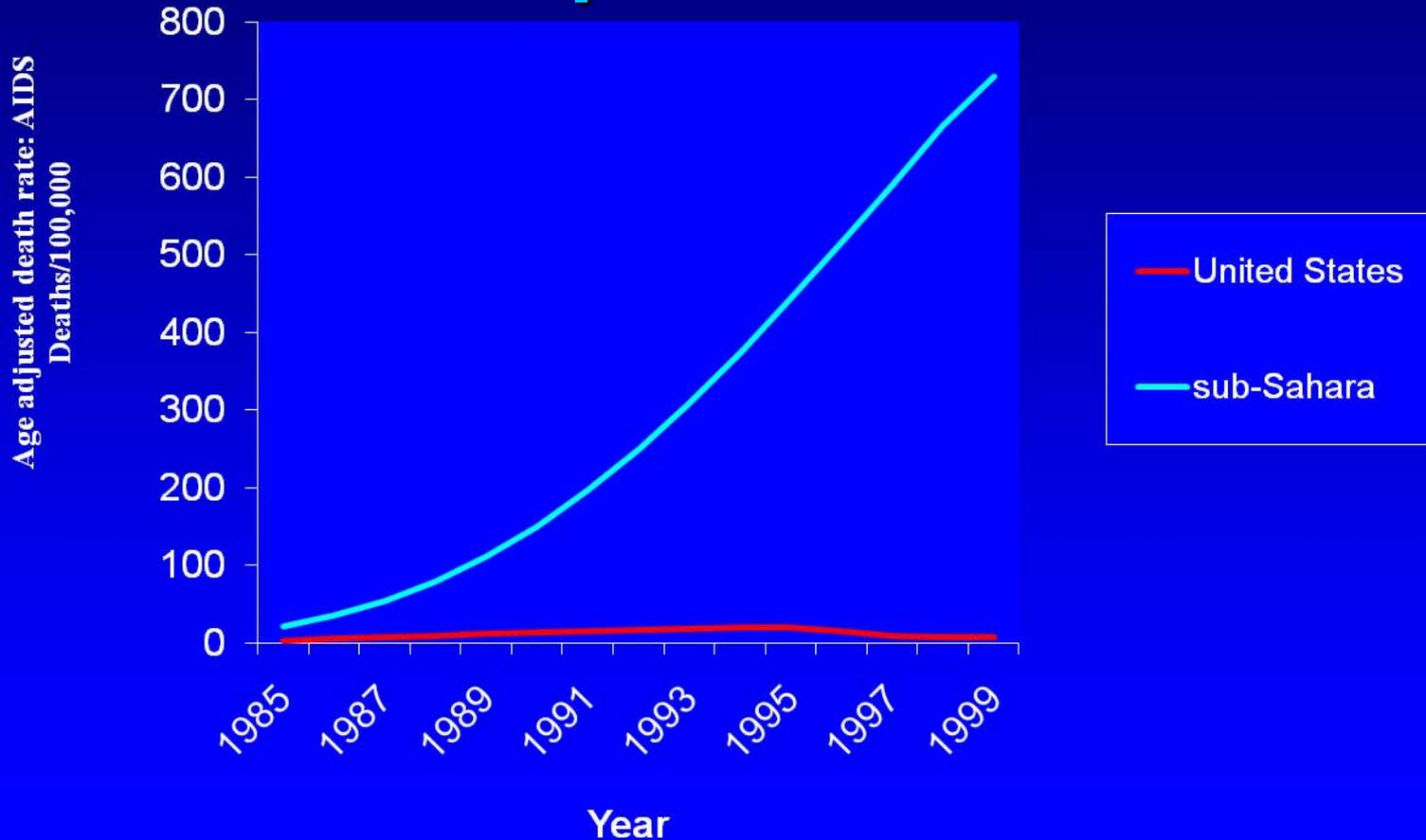


# Tackling HIV in Resource Poor Countries

Mukherjee, JS et al. BMJ 327 (8), 2003



# Scope and Scale



Individual Members of the Harvard Faculty. Consensus Statement on Antiretroviral Treatment for AIDS in Poor Countries. Topics in HIV Medicine 2001 Jun; 9(2).



It's too hard.....2000

**It's 17 to 25 pills a day...**

**Every two hours....**

**And you have to change  
the cocktail ...every  
three or four months , or  
you can die from the  
toxicity of the drugs.**



Image courtesy of [Andres Rueda](#) on Flickr.

**'Many people in Africa have never seen a clock  
or a watch their entire lives. And if you say, one  
o'clock in the afternoon, they do not know what  
you are talking about.'**

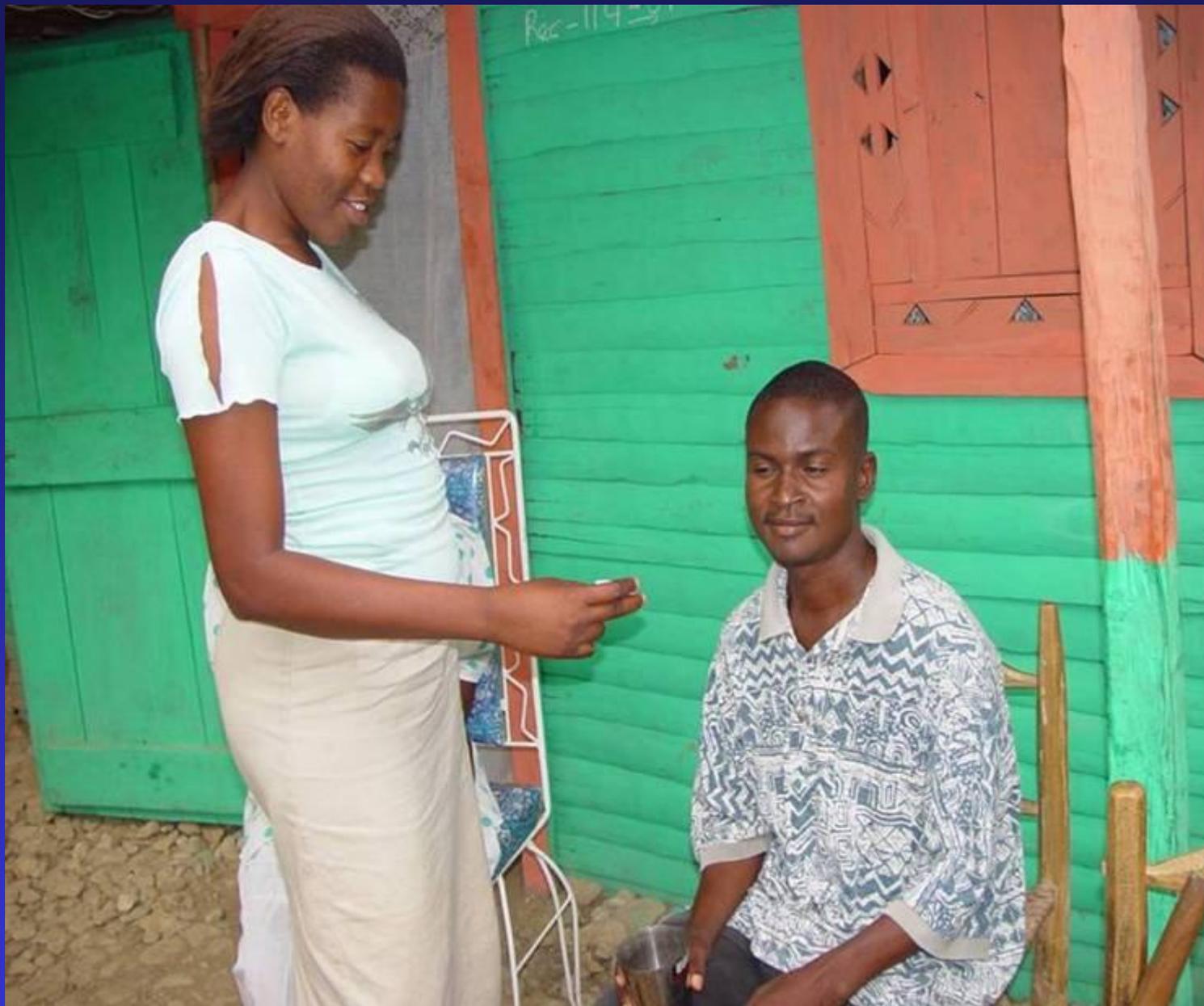


# Feasibility of ART in Resource Poor Settings

- **Over 1500 HIV-positive people followed**
- **60 patients treated with DOT-HAART**
- **Each DOT-HAART patient has an *accompagnateur*.**
- ***Accompagnateurs* observe ingestion of the therapy at least once a day.**
- **They all gained weight**

Farmer P, Leandre F, Mukherjee JS et al. DOT-HAART: Supervised Therapy for Advanced HIV Disease, Lancet 2001; 358





Courtesy of Partners in Health. Used with permission.

PIH photo



# Accompagnateurs

- Selected by the patient needing treatment
- Visit patients at home once or twice daily; each accompagnateur follows an average of 4 patients
- Monthly salary is 300 Haitian dollars (\$38 American)
- Supervised by the head nurse, who regularly meets with each patient and accompagnateur to discuss medication adherence

Mukherjee JS, Eustache E. Community health workers as a cornerstone for integrating HIV and primary healthcare. *AIDS Care*. 2007;19 Suppl 1:73-82



Full price,  
proprietary  
\$10,000  
USD/pt/yr

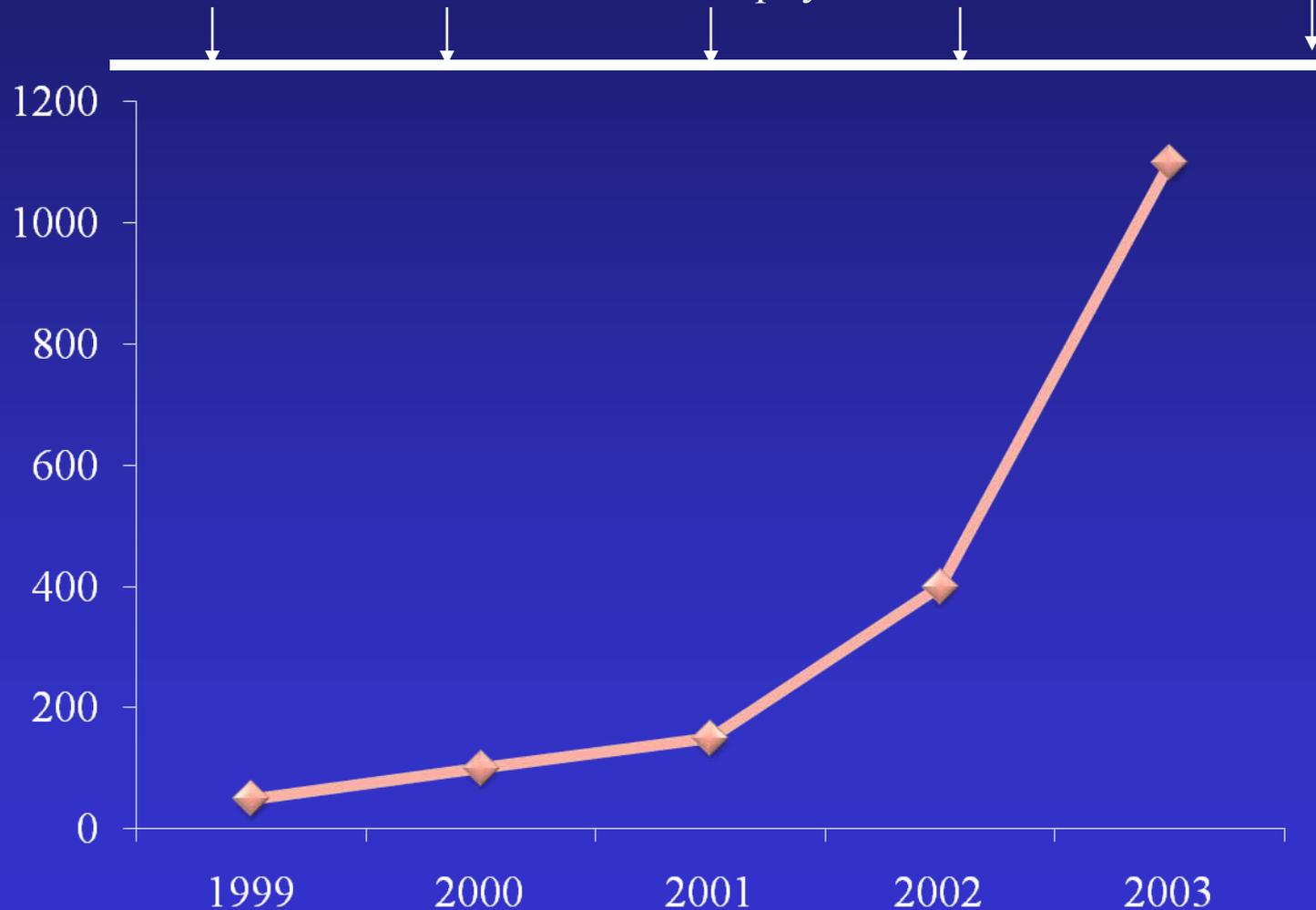
Concessional  
pricing,  
proprietary  
\$1600  
USD/pt/yr

Generic &  
Proprietary  
with WHO  
preapproval  
\$800  
USD/pt/yr

IDA  
quality  
controlled  
\$300  
USD/pt/yr

Clinton  
Foundation  
\$150  
USD/pt/yr

Number of patients treated





Vasan A, Hoos D, Mukherjee JS, et al. The pricing and procurement of antiretroviral drugs: an observational study of data from the Global Fund. Bull World Health Org 2006 May, 84(5):393-398.



# Basing treatment on rights rather than ability to pay: 3 by 5

Images removed due to copyright restrictions.

Mukherjee, JS The Lancet 363, 2004



# Integrated HIV Prevention and Care Strengthens Primary Health Care

Image removed due to copyright restrictions.

Walton, D et al. J.Pub Health Pol 25( 2), 2004



# AIDS treatment siphons resources from primary care.....

Images removed due to copyright restrictions.



# The HIV-EMR System

Fraser HS, Jazayeri D, Nevil P, An information system and medical record to support HIV treatment in rural Haiti. *BMJ*. 2004;329(7475):1142-6.

Central office

Linux Server  
Oracle,  
Apache,  
Tomcat

Offline Application



ROAMING DOCTOR

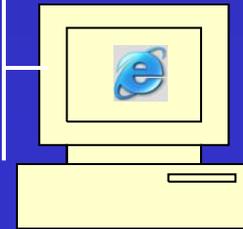


INTERNET

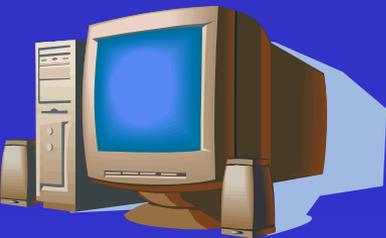
CLINIC



OTHER REMOTE SITES

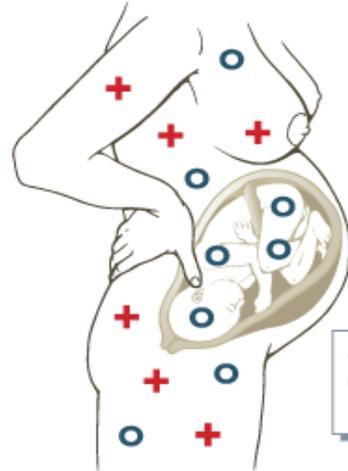


Web Browsers

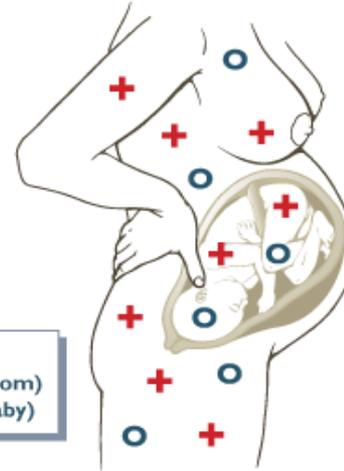


# Passive Transfer of Maternal Antibody

Mother 1



Mother 2



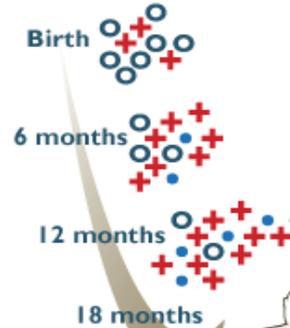
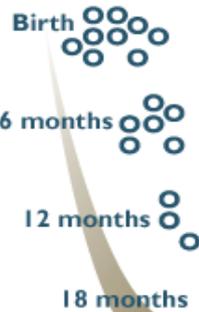
+ HIV infection  
 ○ HIV antibody (mom)  
 ● HIV antibody (baby)

**Baby 1:**

- Has received HIV antibody ONLY
- Does not have HIV infection
- Will have a negative viral test
- Will have positive antibody test until 18m
- 70-80%

**Baby 2:**

- Has received virus and mother's antibody
- Has a positive viral test
- Has a positive antibody test
- Does have HIV infection and will go on to develop symptoms of illness over time
- 20-30%



- Negative antibody test
- Sero Reverter
- Baby does not and never did have HIV infection

- Positive antibody test
- HIV Culture/PCR Positive
- HIV infected. Over time will develop symptoms of disease

Thanks  
to I-  
TECH



Image removed due to copyright restrictions.



Image removed due to copyright restrictions.

Ivers LC, Smith Fawzi MC, Mann J. Overseas processing of dried blood spots for timely diagnosis of HIV in Haitian infants. *Rev Panam Salud Publica*. 2008;24(5):331-335.



# PIH Time Line



**Primary healthcare in Haiti .**

**Developing a model for community-based care.**

**Advocacy for the poor in Latin America**

**Treating conditions considered too complex for in poor settings**

**MDR-TB TB in Peru and Haiti , Russia. ART in Haiti.**

**Advocating for pricing and drug development for the poor .**

**Expansion and development of the model of care HIV and TB.**

**Working with the public sector. Expansion of Haiti HIV model.**

**Advocating for new sources of funding and public sector support.**

**Disseminating the PIH model to Africa.**

**Health systems Strengthening.**

**Advocating for food security and health care workers.**



# Community Partnership



Courtesy of Partners in Health. Used with permission.

Mukherjee, PIH photo



# Revitalizing Hospitals



Courtesy of Partners in Health. Used with permission.

PIH photo



# Public Sector Model



Courtesy of Partners in Health. Used with permission.

- Governments (not NGOs) can ensure the right to services.
- Building the public health infrastructure and education system (not private clinics and schools) will best serve the public and allow the right to health care and education.
- Integrated HIV programs can increase uptake of vaccinations, family planning, and improve primary health care in the public sector

Mukherjee, PIH photo



# Village Health Workers and Household Chart

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Courtesy of Partners in Health. Used with permission.

PIH photo

SECTION 2 LIST ANY WOMAN WHO IS PREGNANT														
Name	MUAC	Food Program	Using Net	HIV test Date	PRCT	ANC Visits				Delivery Date	Delivery	Baby and Placenta	1 <sup>st</sup> postnatal visit	Referred to HC
						1	2	3	4					
		<input type="checkbox"/>	<input type="checkbox"/>	Den/None Year Result: NR/N	<input type="checkbox"/>	Day/Week	Delivered at home Month/Day	Still alive Month/Day	Day/Week	Day/Week				
		<input type="checkbox"/>	<input type="checkbox"/>	Tolu/None Chika Result: NR/N	<input type="checkbox"/>	Day/Week	Delivered at home Month/Day	Still alive Month/Day	Day/Week	Day/Week				

SECTION 3 LIST ANYONE WHO HAS BEEN COUGHING FOR MORE THAN TWO WEEKS						
Name	Referred to Health center	Completes at follow up visit				
		Improved	Evaluated at HC	Treatment given	To treatment	Not Improved
	Den/None/Year	<input type="checkbox"/>	Den/None/Year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Den/None/Year	<input type="checkbox"/>	Den/None/Year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Den/None/Year	<input type="checkbox"/>	Den/None/Year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Den/None/Year	<input type="checkbox"/>	Den/None/Year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Den/None/Year	<input type="checkbox"/>	Den/None/Year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION 4 LIST ANYONE WHO IS REACTIVE							
Name	Children Tested	Partner Tested	Using bed net	On CPT	Enrolled Pre AAT	On ARV's	Referred to Clinic
	Y/N No	Yes: R./NR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Den/None/Year
	Y/N No	Yes: R./NR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Den/None/Year
	Y/N No	Yes: R./NR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Den/None/Year
	Y/N No	Yes: R./NR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Den/None/Year
	Y/N No	Yes: R./NR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Den/None/Year

SECTION 5 LIST ANY CHILD WHO IS LESS THAN FIVE YEARS OLD																					
Name	Under 1 year	BCG	Pentavalent OPT/Imvax					Oral Polio Vaccine		Hemoglobin	Using net	MUAC						Date Enrolled in Food Program	Date Food Program Completed	Referred to HC	Over 3
			1	2	3	0	1	2	2			1	2	3	4	5	6				
	<input type="checkbox"/>	Green Yellow Red	Day/Week	Day/Week	Day/Week	<input type="checkbox"/>															
	<input type="checkbox"/>	Green Yellow Red	Day/Week	Day/Week	Day/Week	<input type="checkbox"/>															
	<input type="checkbox"/>	Green Yellow Red	Day/Week	Day/Week	Day/Week	<input type="checkbox"/>															
	<input type="checkbox"/>	Green Yellow Red	Day/Week	Day/Week	Day/Week	<input type="checkbox"/>															
	<input type="checkbox"/>	Green Yellow Red	Day/Week	Day/Week	Day/Week	<input type="checkbox"/>															

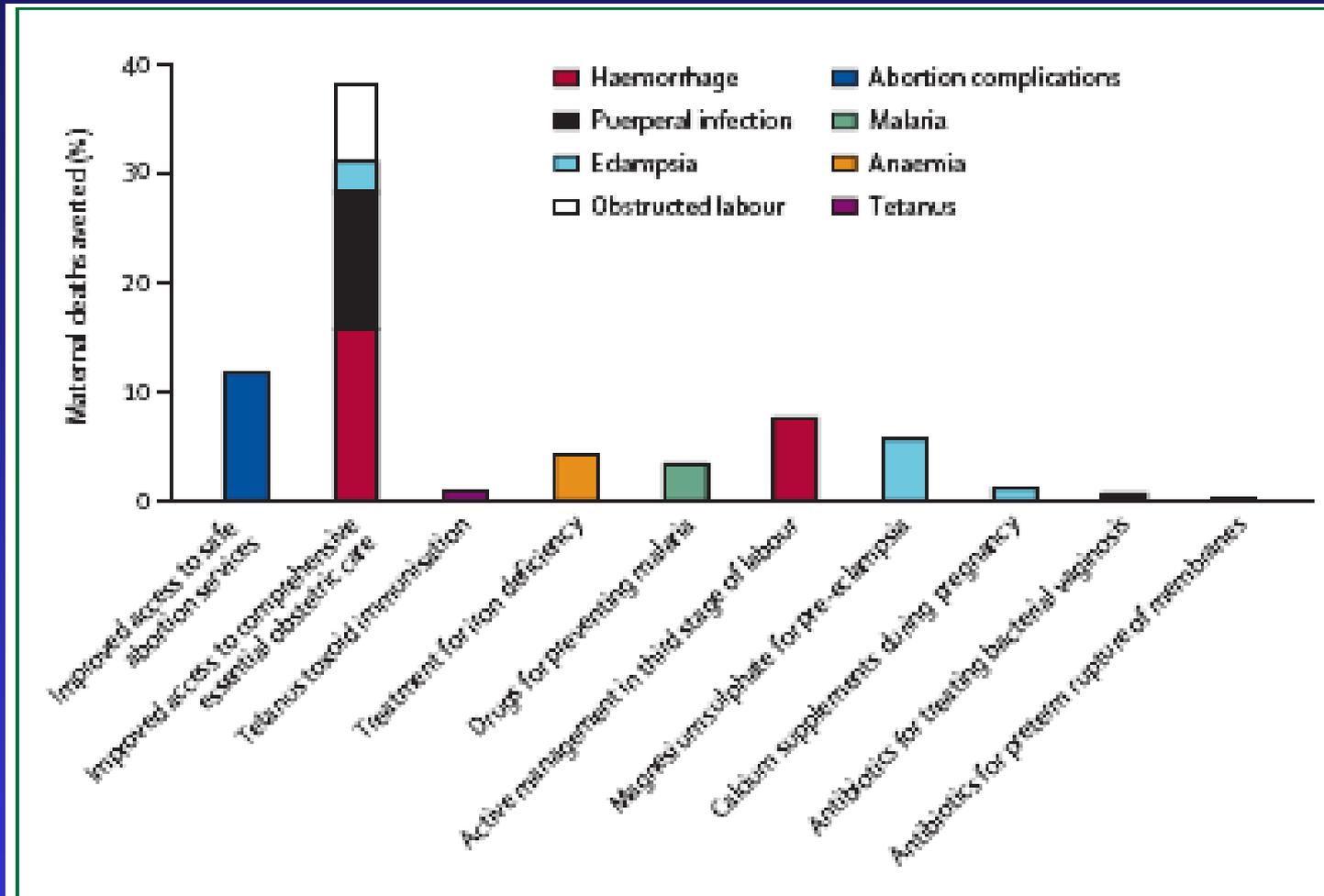


PIH photo

Courtesy of Partners in Health. Used with permission.



# Interventions with Proven Effect on Maternal Survival

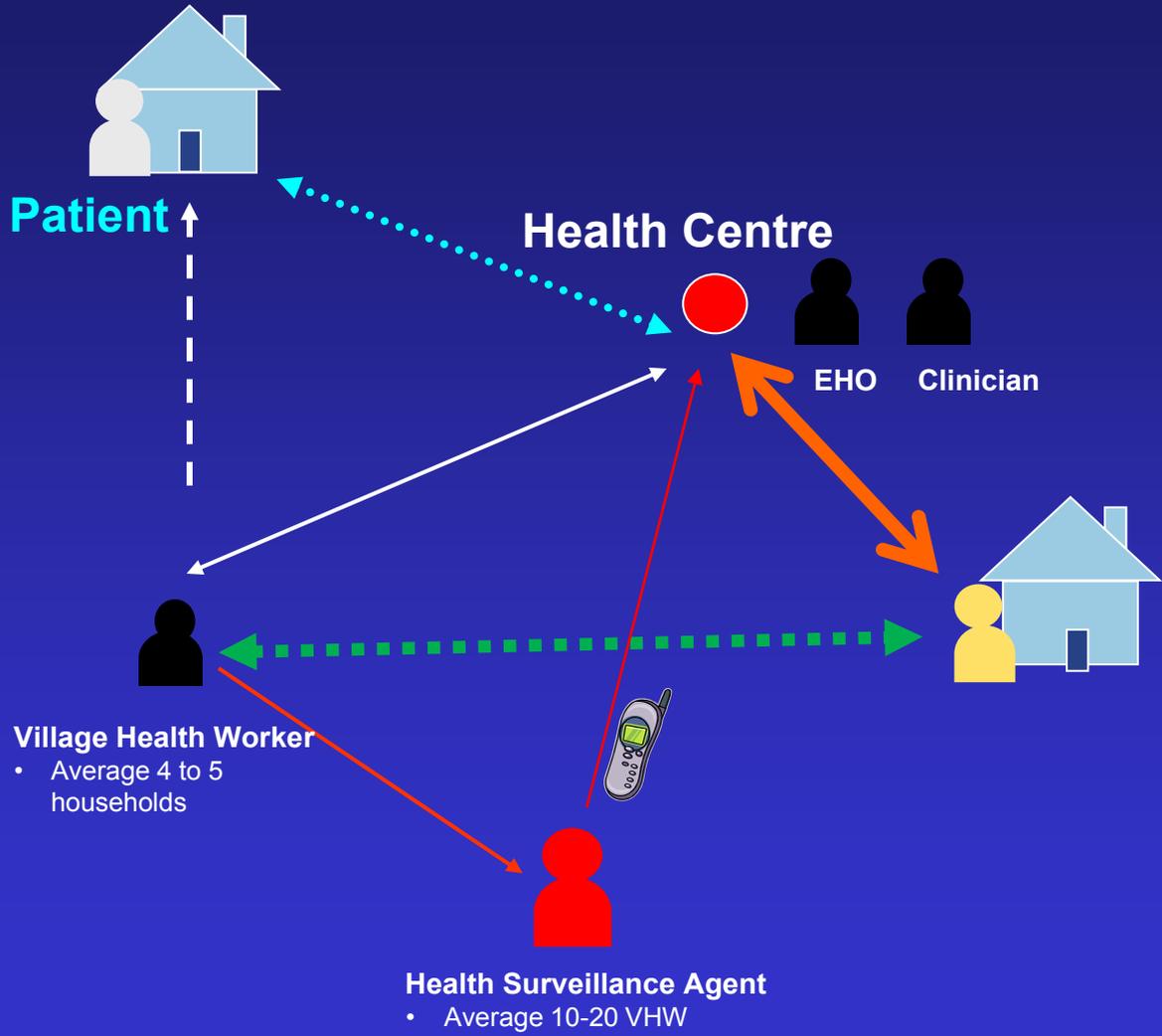


Courtesy of Elsevier, Inc., <http://www.sciencedirect.com>. Used with permission.

Freedman, L., et al. "Transforming health systems to improve the lives of women and children." *The Lancet* 365 (2005): 997-1000.



# Village Health Workers' Integration into Malawian Health System



## Village Health Worker

- Daily accompaniment for HIV TB
- Monthly for pregnant woman, family surveillance
- Twice monthly for meds + training. 0-4 hours walk

## HIV or TB Patient

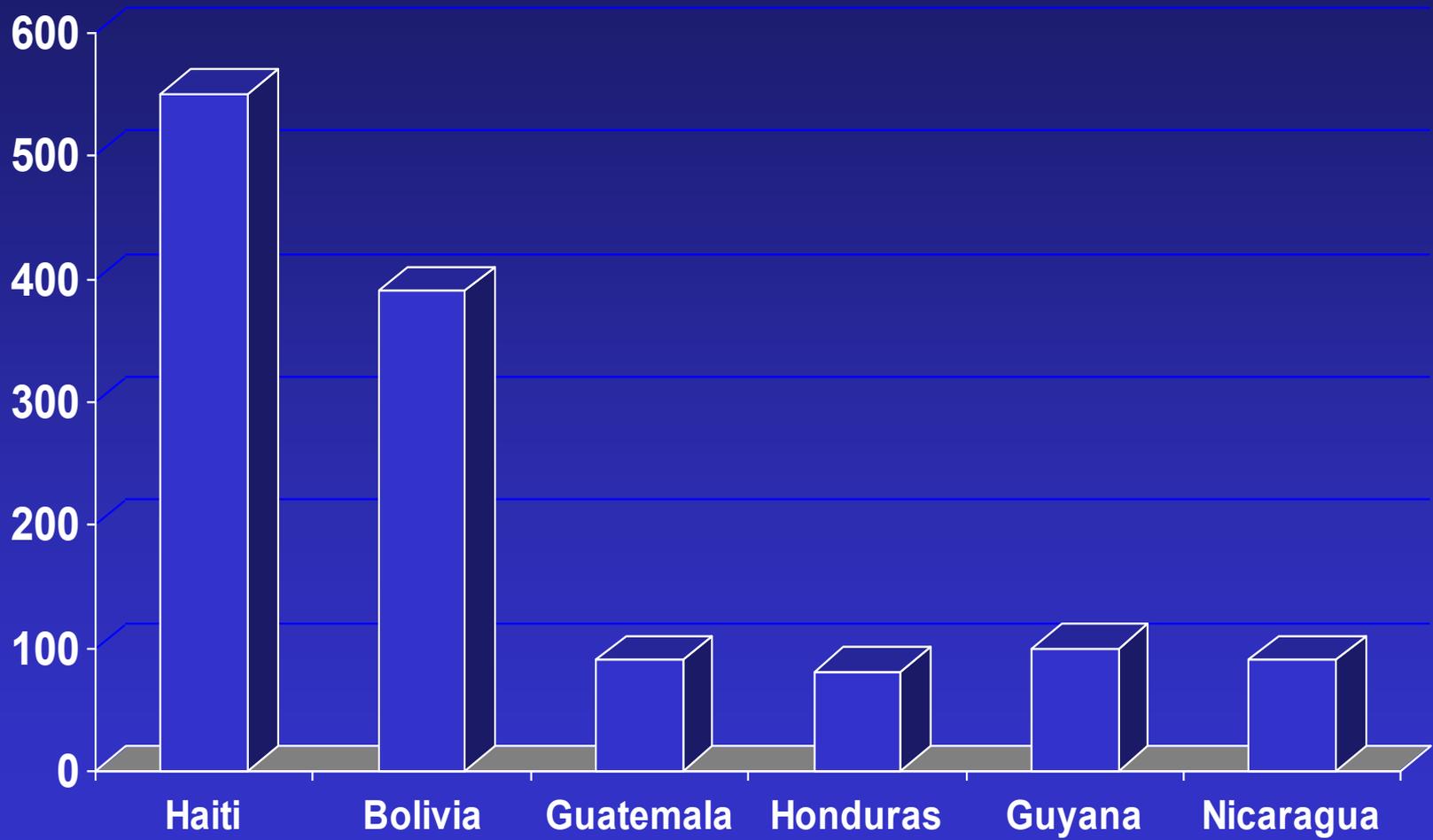
- Once monthly for consult

## HSA

- Once monthly for consult with VHW and reporting to EHO

**Pregnant Women**

# Maternal Mortality per 100,000 Live Births



Source PAHO 2002



# Matope ANC Attendance

Total ANC visits by month



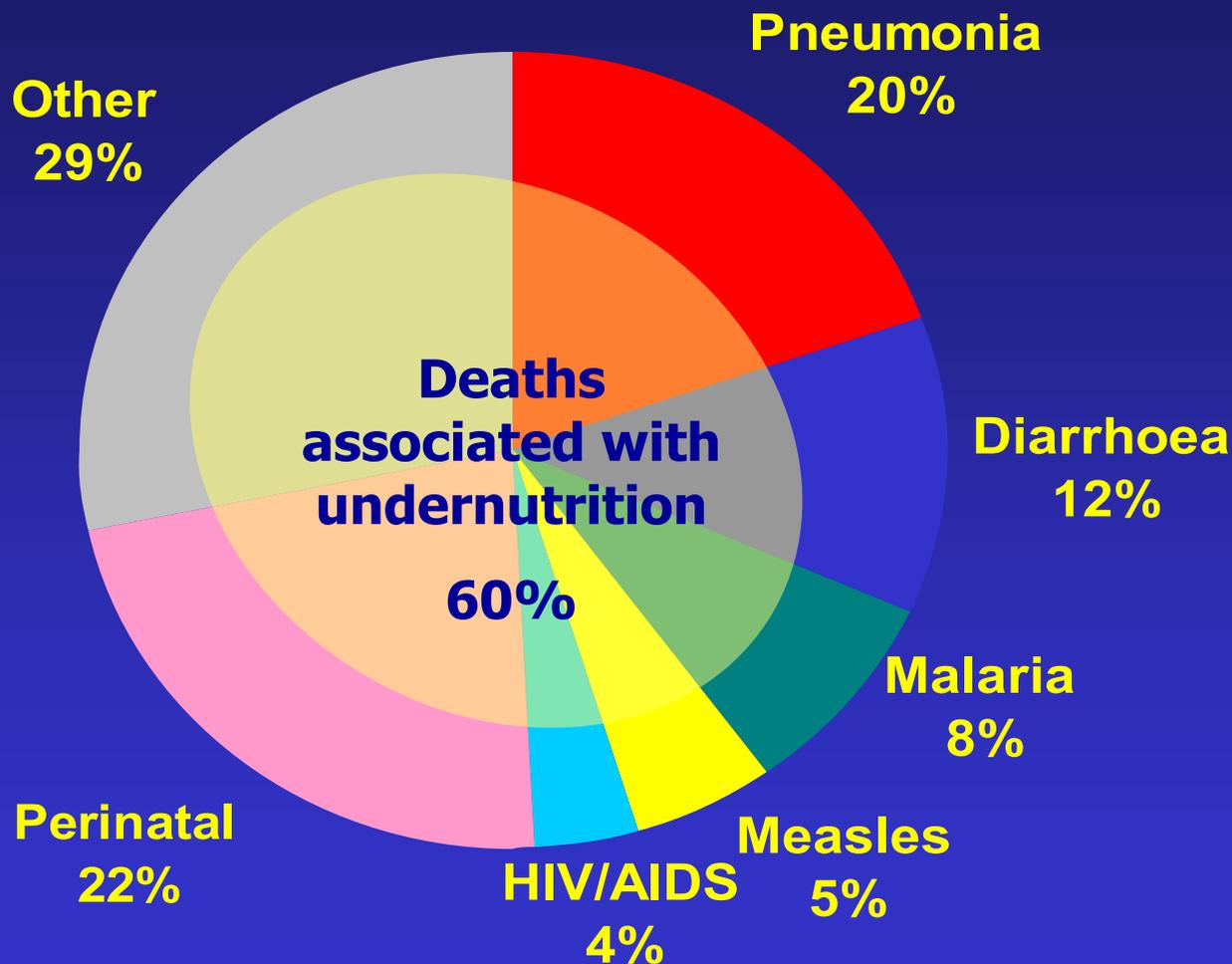


Courtesy of Partners in Health. Used with permission.

Mukherjee, PIH photo



# Major causes of death among children under five, world, 2000



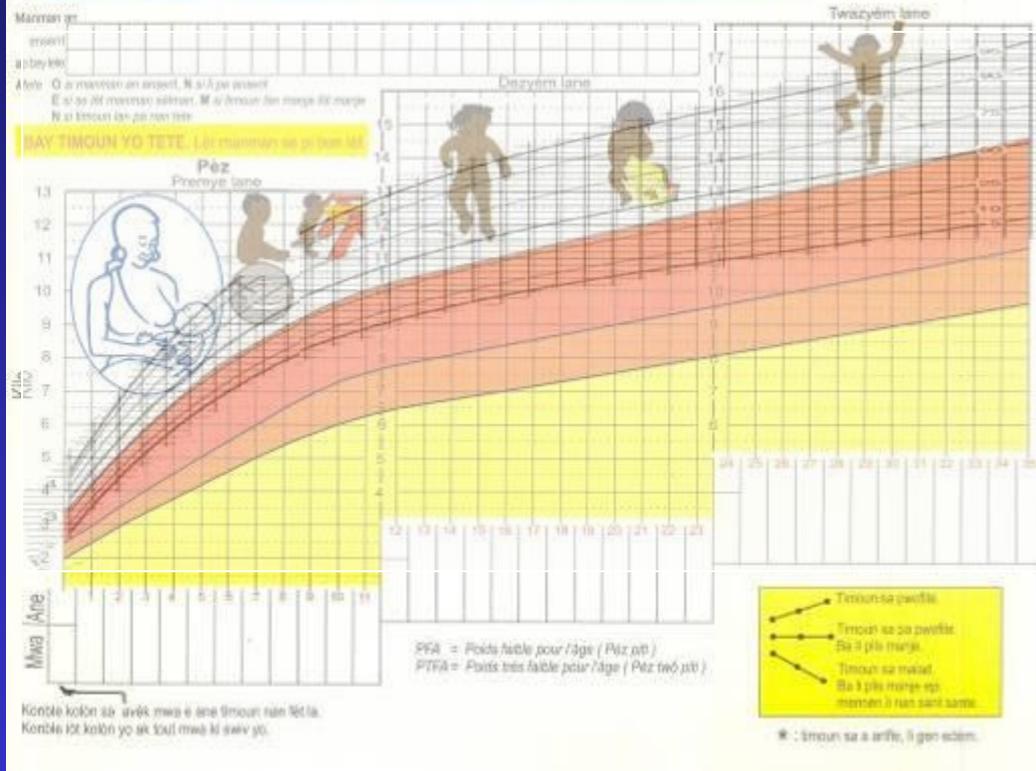
**Sources:**

For cause-specific mortality: EIP/WHO.

For deaths associated with malnutrition: Caulfield LE, Black RE. Malnutrition and the global burden of disease: underweight and cause-specific mortality. Paper in preparation.



# CHEMEN LASANTE



Courtesy of Partners in Health. Used with permission.





Courtesy of Partners in Health. Used with permission.

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*2005: 19 years old,  
Graduated first in his class...*



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Spring 2012

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