Health Systems

An Introduction

MSc IBE

Concepts in Epidemiology 2009

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Learning objectives

- Gain an appreciation of the importance of health systems;
- Be able to define health systems, their function, values, components, and main actors;
- Develop a personal framework for thinking about how to work with and improve health systems within resource constrained settings;
- Be able to raise questions about health systems concepts.

Session overview

Outline

1. Why bother with health systems?
2. What is the health system?
3. Recent trends in health systems
4. Profiling your health system

Approach

- Lecture including demonstrations, video, discussion, and individual exercise

A quick pre-test

Which country in each pair has higher child mortality?

Pairs chosen where one country has > twice the child mortality rate of the other

Sri Lanka	or	Turkey
Poland	or	South Korea
Cuba	or	Russia
Pakistan	or	Vietnam
Thailand	or	South Africa
Germany	or	Singapore
Romania	or	Chile
United States	or	Slovenia
Seychelles	or	Mexico
Sudan	or	Cambodia

Circle country with at least 2x higher mortality in each pair (10 circles)

Countries having > twice the child mortality rate of the other

14	Sri Lanka	or	Turkey	29
12	Poland	or	South Korea	6
7	Cuba	or	Russia	16
101	Pakistan	or	Vietnam	19
21	Thailand	or	South Africa	68
5	Germany	or	Singapore	3
20	Romania	or	Chile	9
8	United States	or	Slovenia	4
13	Seychelles	or	Mexico	27
70	Sudan	or	Cambodia	143

>2 x Higher mortality in the pair

Pre-test of pre-conceptions

- Last class score: 3.5 correct out of 10
- How did you do on each pair?
- 19 of 25 (76%) have counter-factual pre-conceptions (<5 correct)

	Question pair	Higher mortality	Correct Answers / class of 25	Class score
1	Pakistan or Vietnam	Pakistan	16	64%
2	Cuba or Russia	Russia	14	56%
3	Seychelles or Mexico	Mexico	12	48%
4	Thailand or South Africa	South Africa	12	48%
5	Romania or Chile	Romania	11	44%
6	Poland or Korea	Poland	6	24%
7	Sudan or Cambodia	Cambodia	5	20%
8	Germany or Singapore	Germany	4	16%
9	United States or Slovenia	Slovenia	2	8%
10	Sri Lanka or Turkey	Turkey	1	4%
	Overall Class Score			**33%**

Lowest: 1 out of 10, Average 3.3 out of 10; Highest 6 out of 10

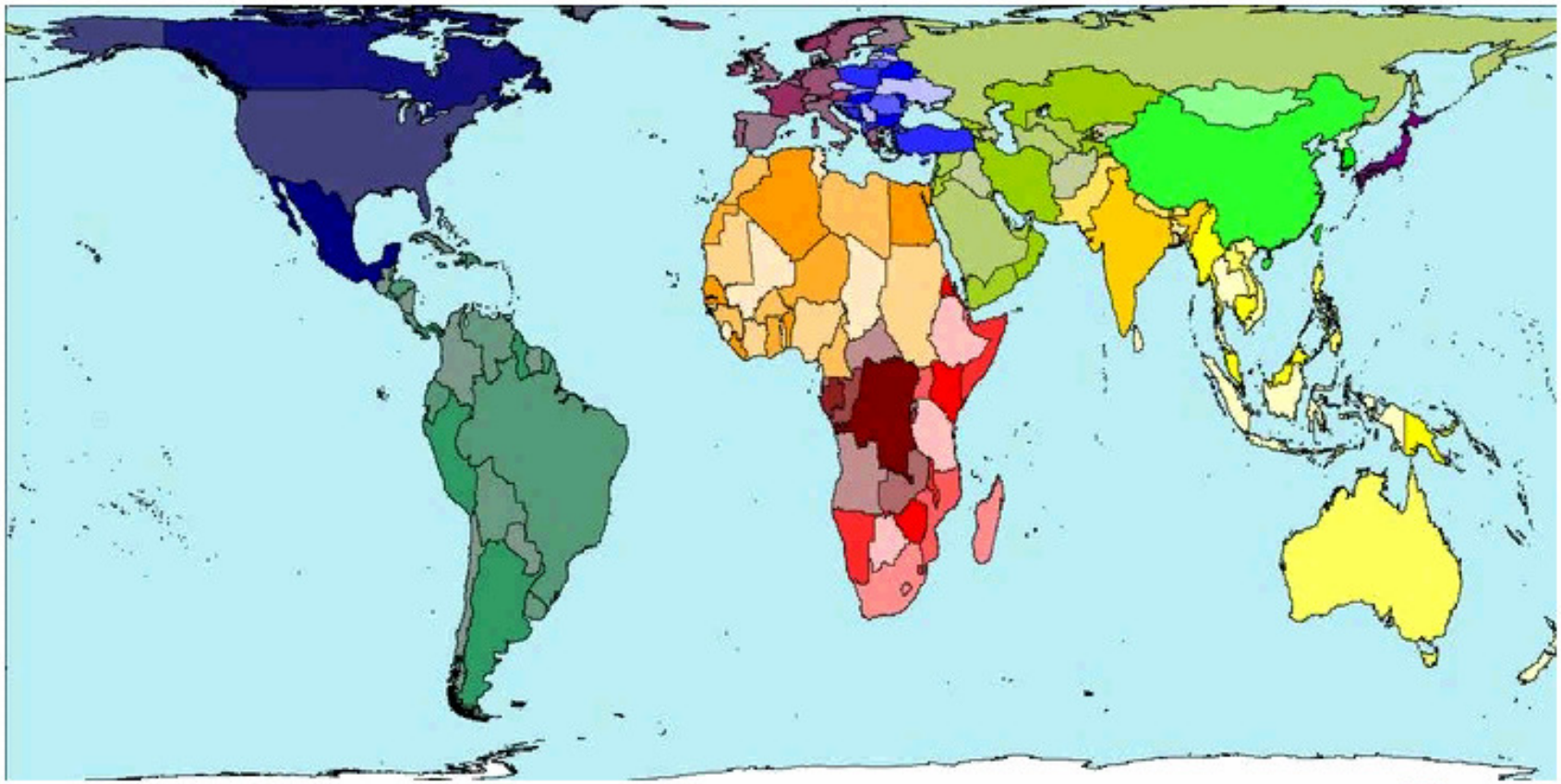
What does this say?

- Pre-conceptions can be wrong
- Very large disparities between regions and countries
- Disparities are not consistent with wealth
- What could account for the difference?

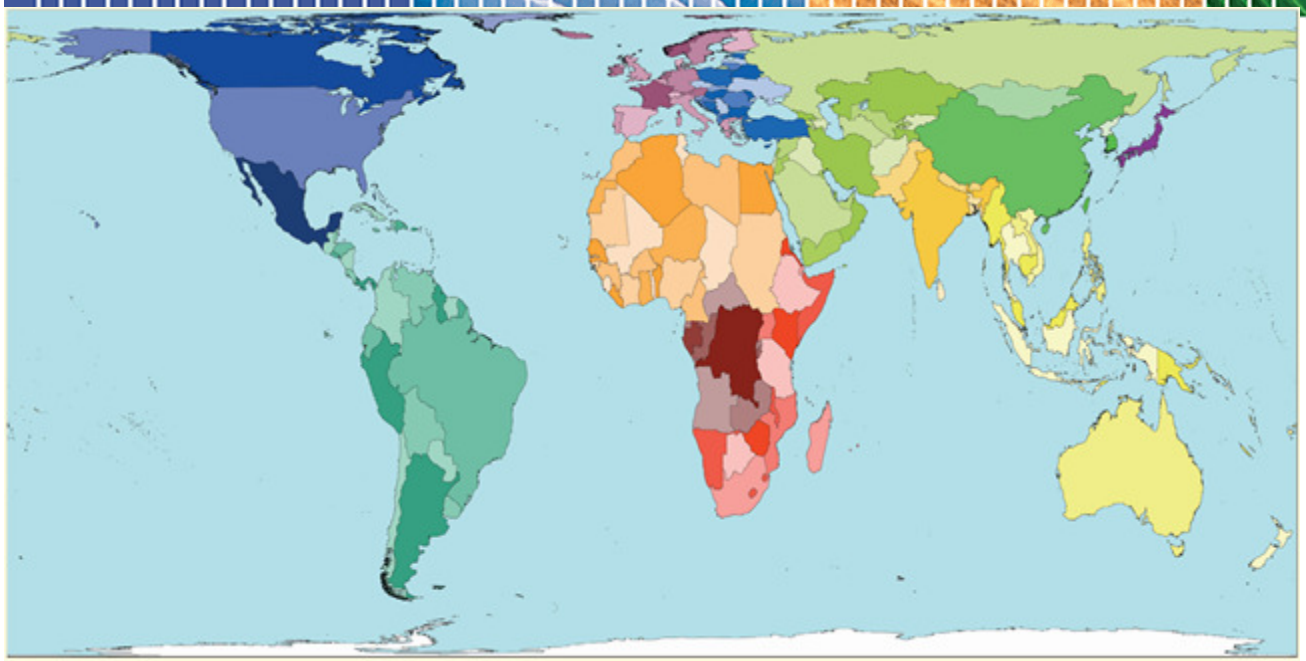
- Perhaps it has something to do with how wealth is used?

Could investments in “health systems” be a factor?

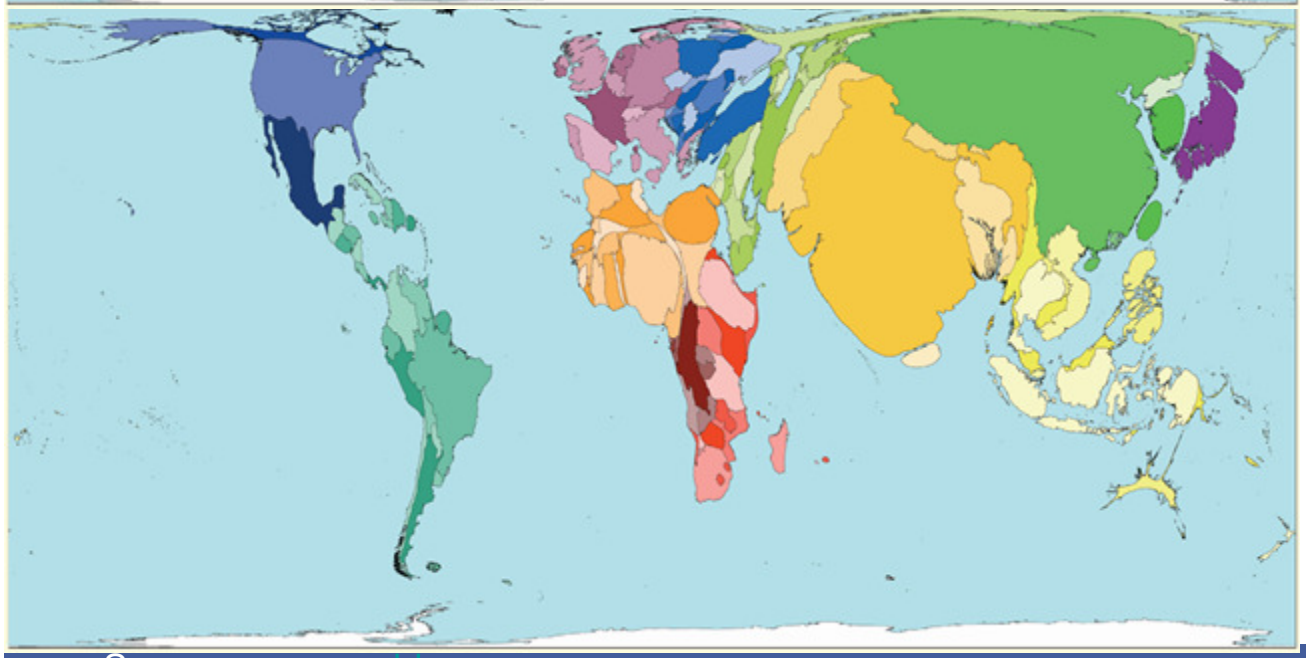
The world is not flat…



Land Area

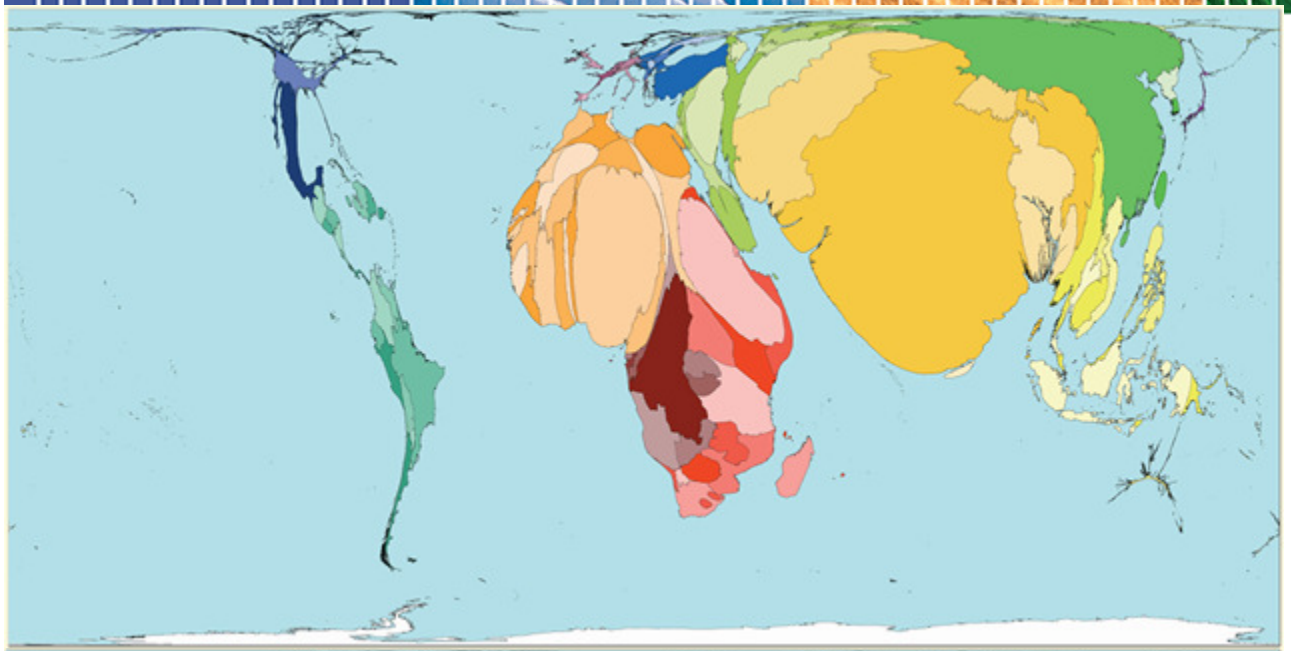


Proportional to land area

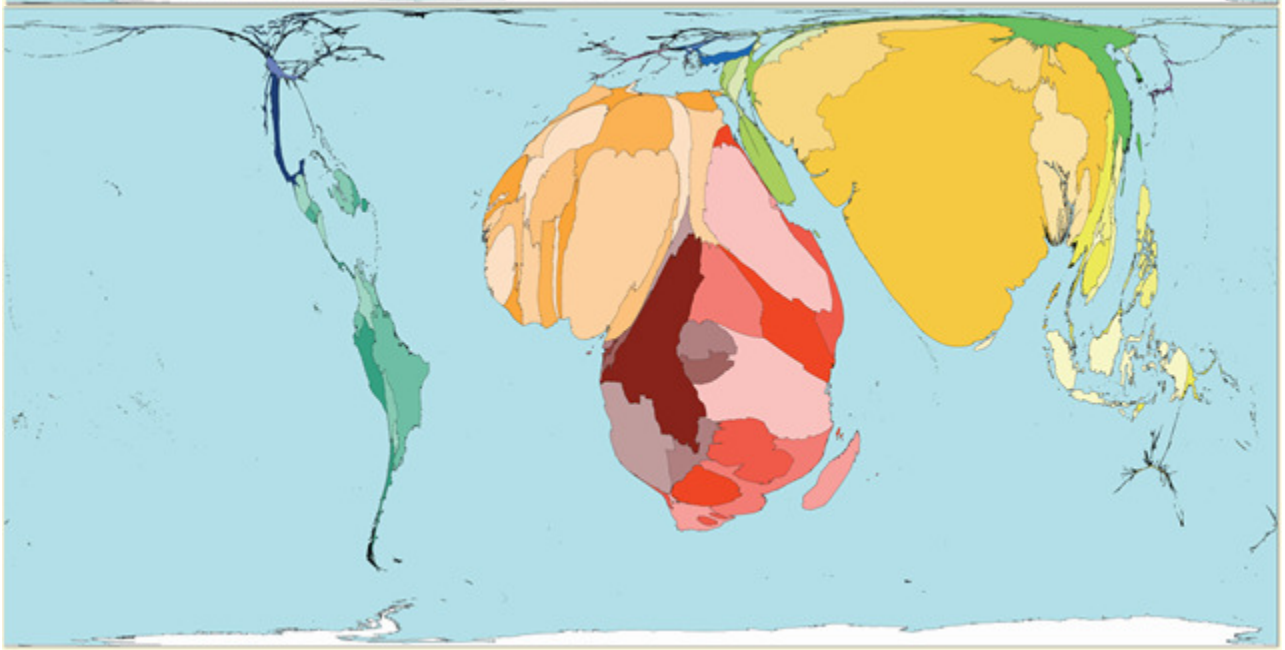


Proportional to population

Source: www.worldmapper.org

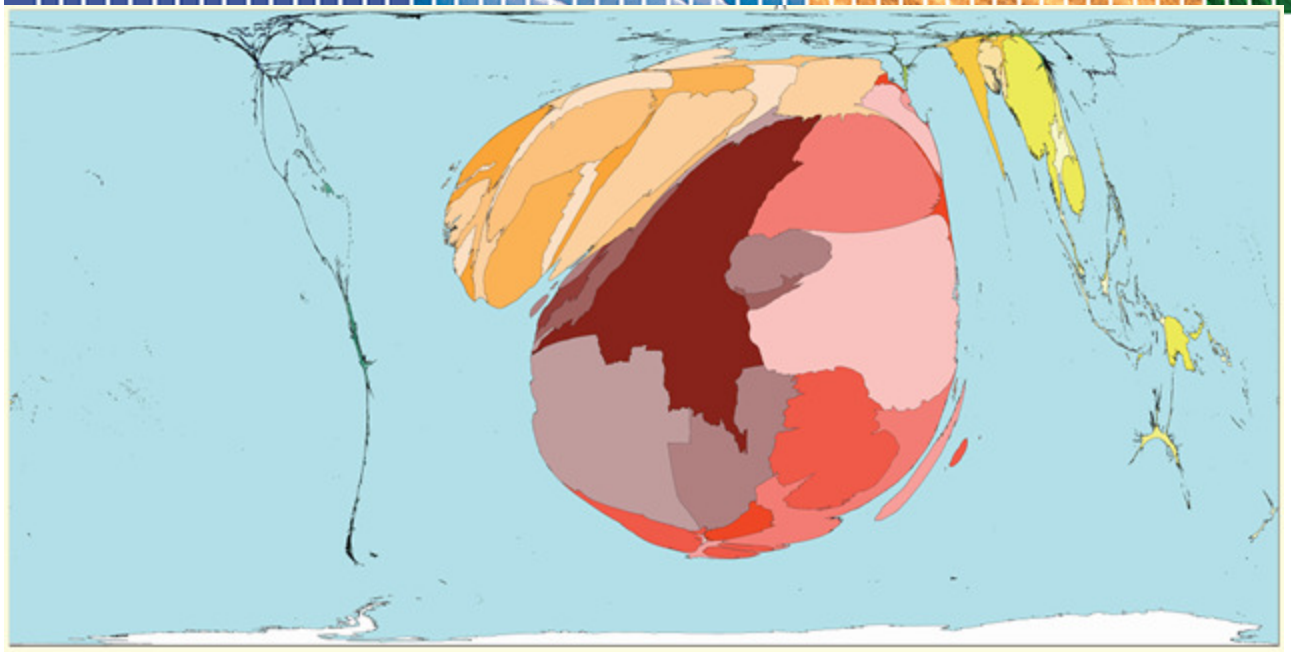


Proportional to
neonatal mortality

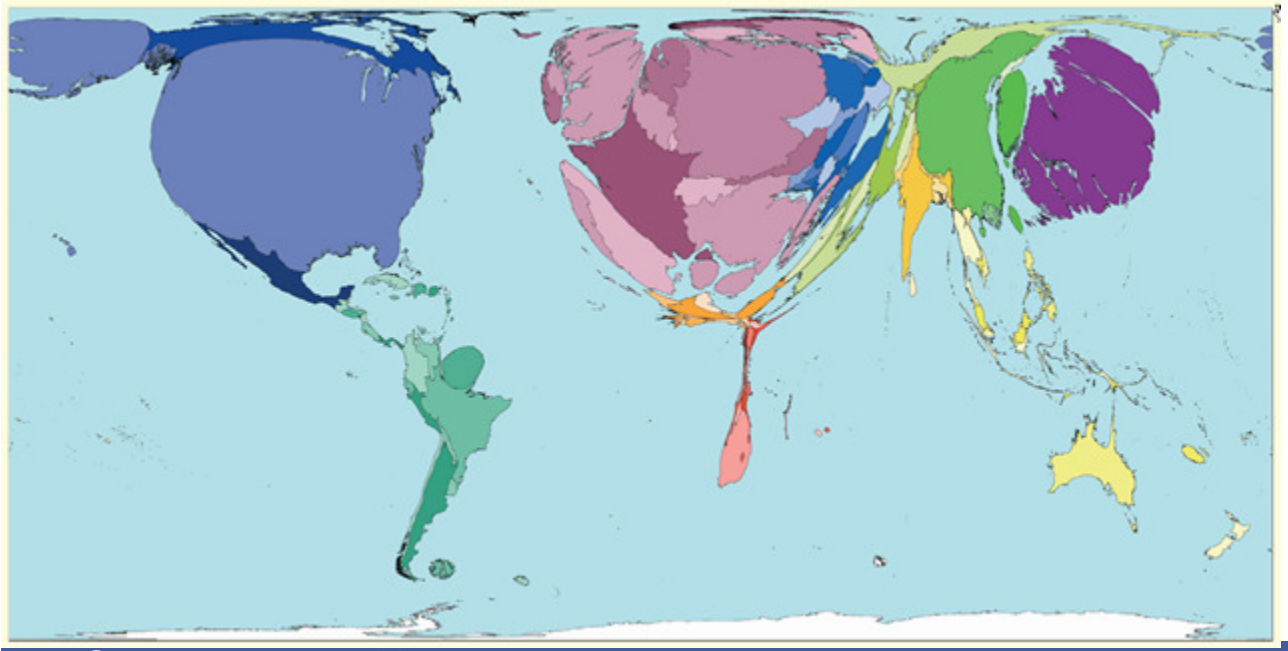


Proportional to
Maternal mortality

Source: www.worldmapper.org



Proportional to
Malaria deaths

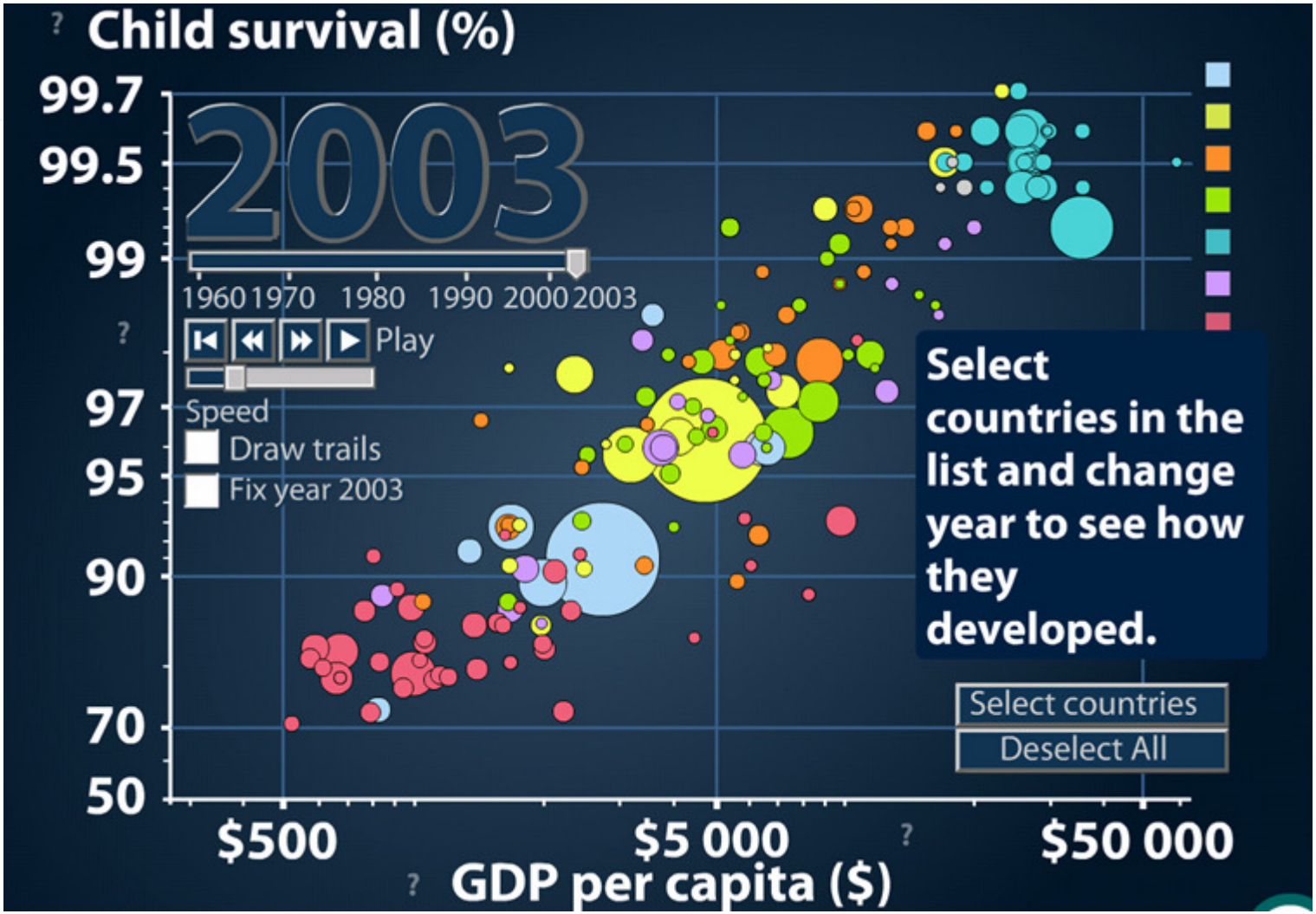


Proportional to
Health spending

Source: www.worldmapper.org

The health system effect

Interactive demo of health system effect



http://tools.google.com/gapminder

Choices: failure to capture and invest in systems development

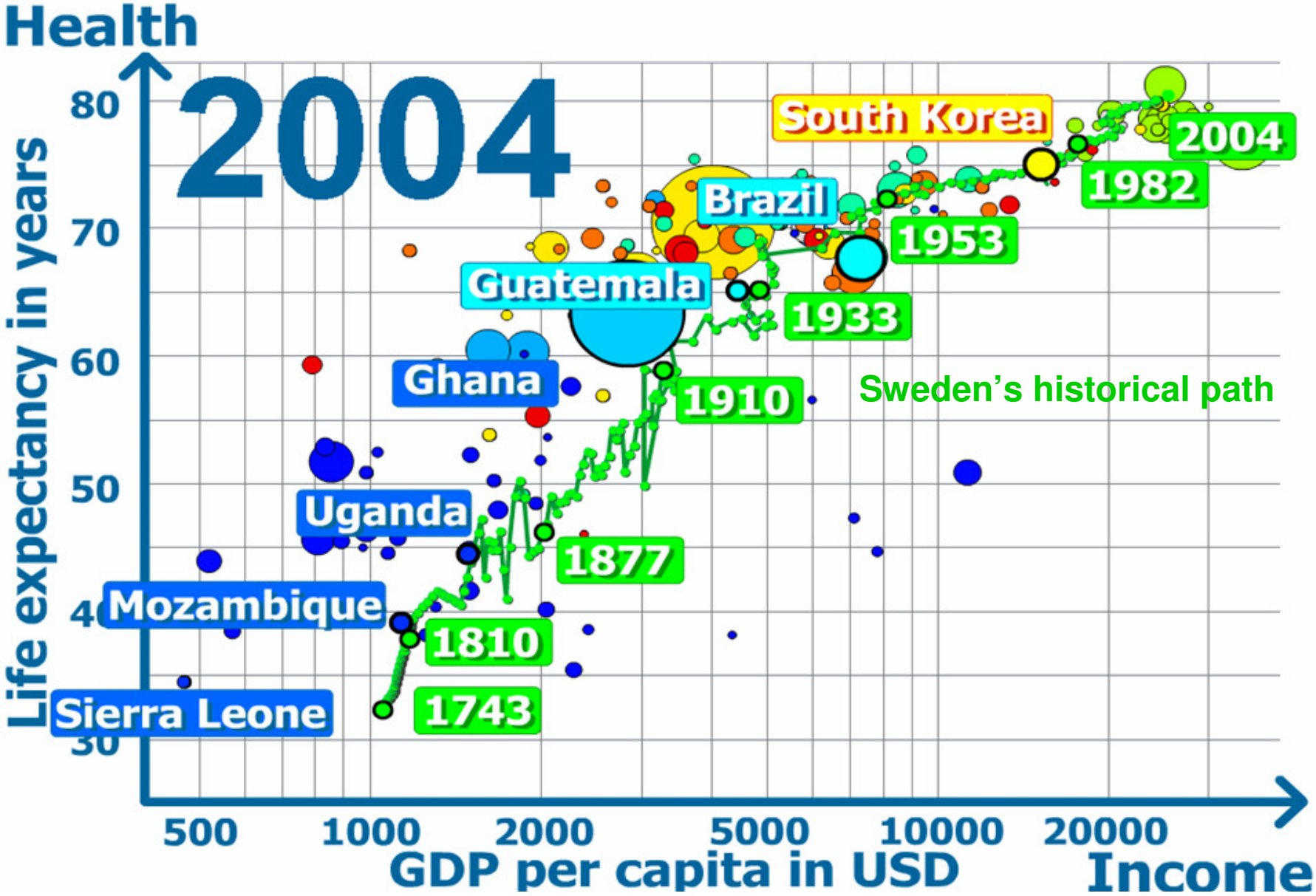
"*Our per capita GDP is now $37,000. But look around you, walk through our streets, where is it? Everyone thinks things are improving but they are not. Everything is just the same…"* Journalist in Equatorial Guinea

Equatorial Guinea has one of the highest per capita GDPs in the world (top 20 and > Germany) yet one of the worst child survival statistics (bottom 20).

Similar observations can be made for most oil-exporting countries of sub-Saharan Africa (Chad, Angola, Nigeria, etc.)

Yet Cuba with a very low GDP ($9,000 per capita) has health statistics superior to the US (with $46,000 per capita)

Pathways: Africa seems 1-2 centuries behind Sweden but that can change quickly!



Why interest in health systems now?

- Enormous preventable disease burden
- Proven interventions available
- Sufficient finances for interventions
- But effective coverage too low

- Why?
  - Technical failure of interventions?

    or
  - Systems failure to deliver?

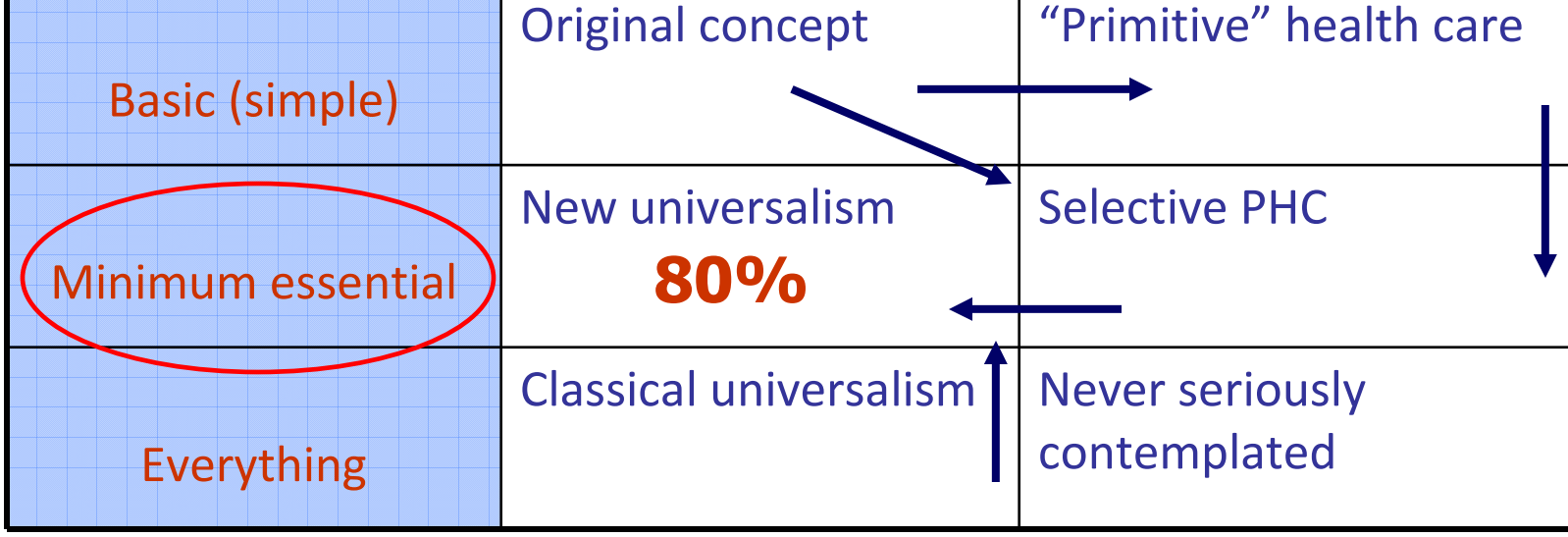
Some epi terms to refresh for health systems…

- *Intervention*
  - A treatment, strategy, regimen, therapy, test, tool, policy, etc.
- *Efficacy*
  - How well that intervention works under ideal conditions
- *Effectiveness*
  - How well that intervention works in real life
- *Coverage*
  - What proportion of the target population gets and benefits from the intervention (effective coverage)

Towards a new universalism

Coverage of interventions under differing health system notions

Interventions	Population covered	
	Everyone	Only the poor
Basic (simple)	Original concept	"Primitive" health care
Minimum essential	New universalism **80%**	Selective PHC
Everything	Classical universalism	Never seriously contemplated



Adapted from Julio Frenk, 1999

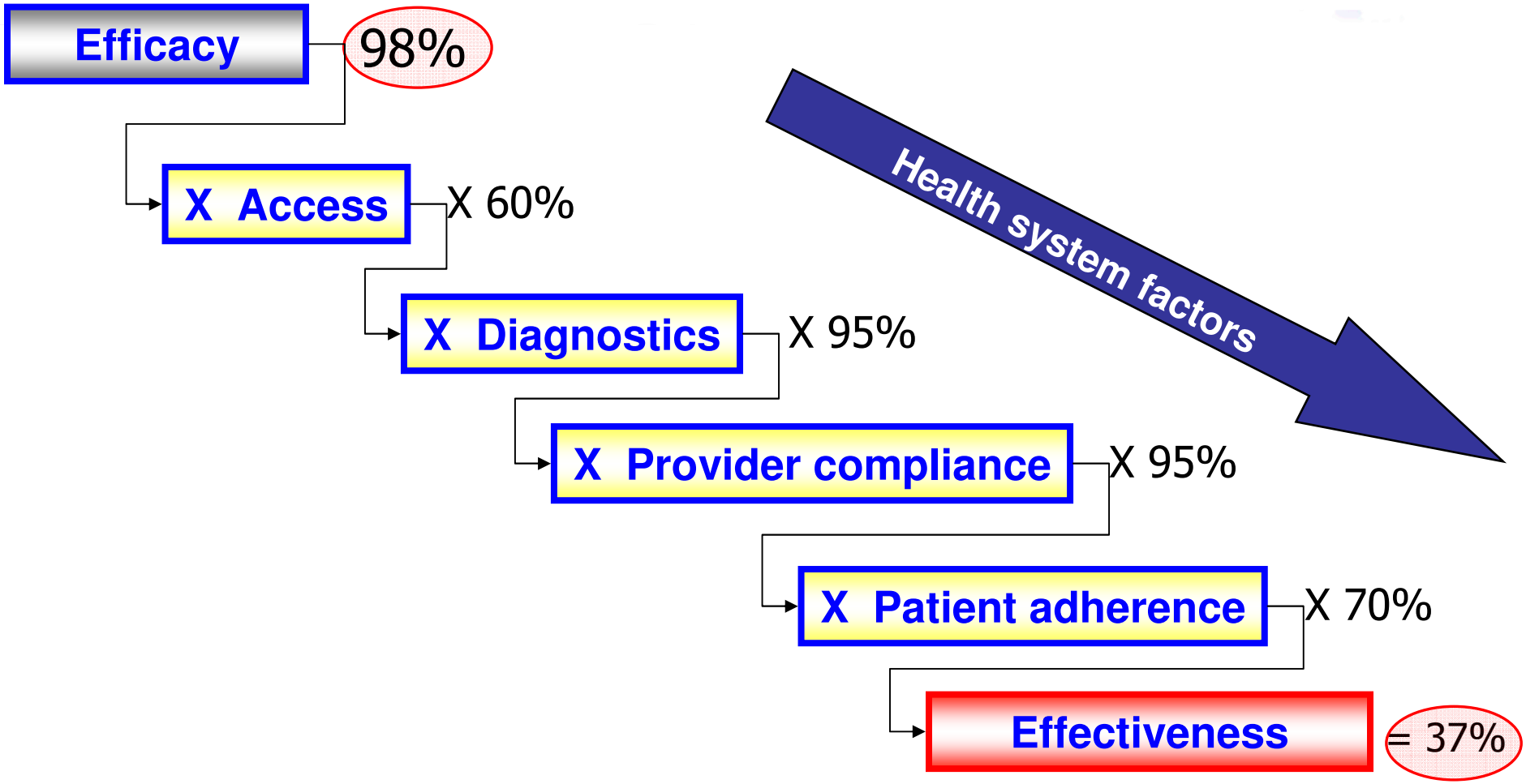
Objectives of core packages of essential care

- Risk avoidance objectives
  - to control 'high burden of disease' conditions;
  - to improve equity of access to services;
  - to protect against catastrophic illness events;
  - to ensure social risk pooling;

- Efficiency improvement objectives
  - to combat cost-escalation;
  - to improve allocative efficiency in the health system;
  - to encourage competition between insurers;
  - to facilitate public participation and transparency in decision making.

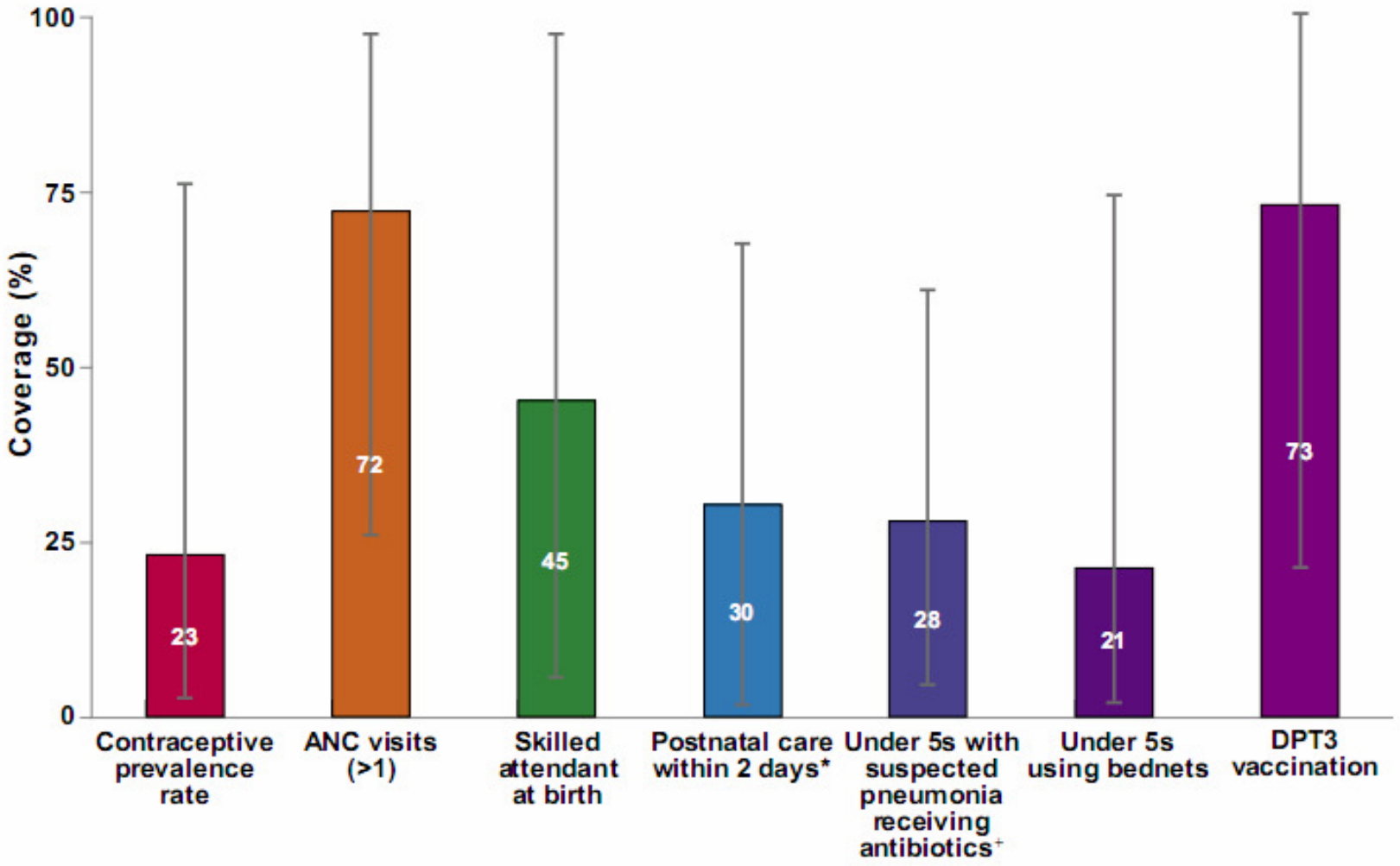
How health systems loose traction

Example of ACT anti-malarial treatment in Rufiji District, Tanzania in 2006

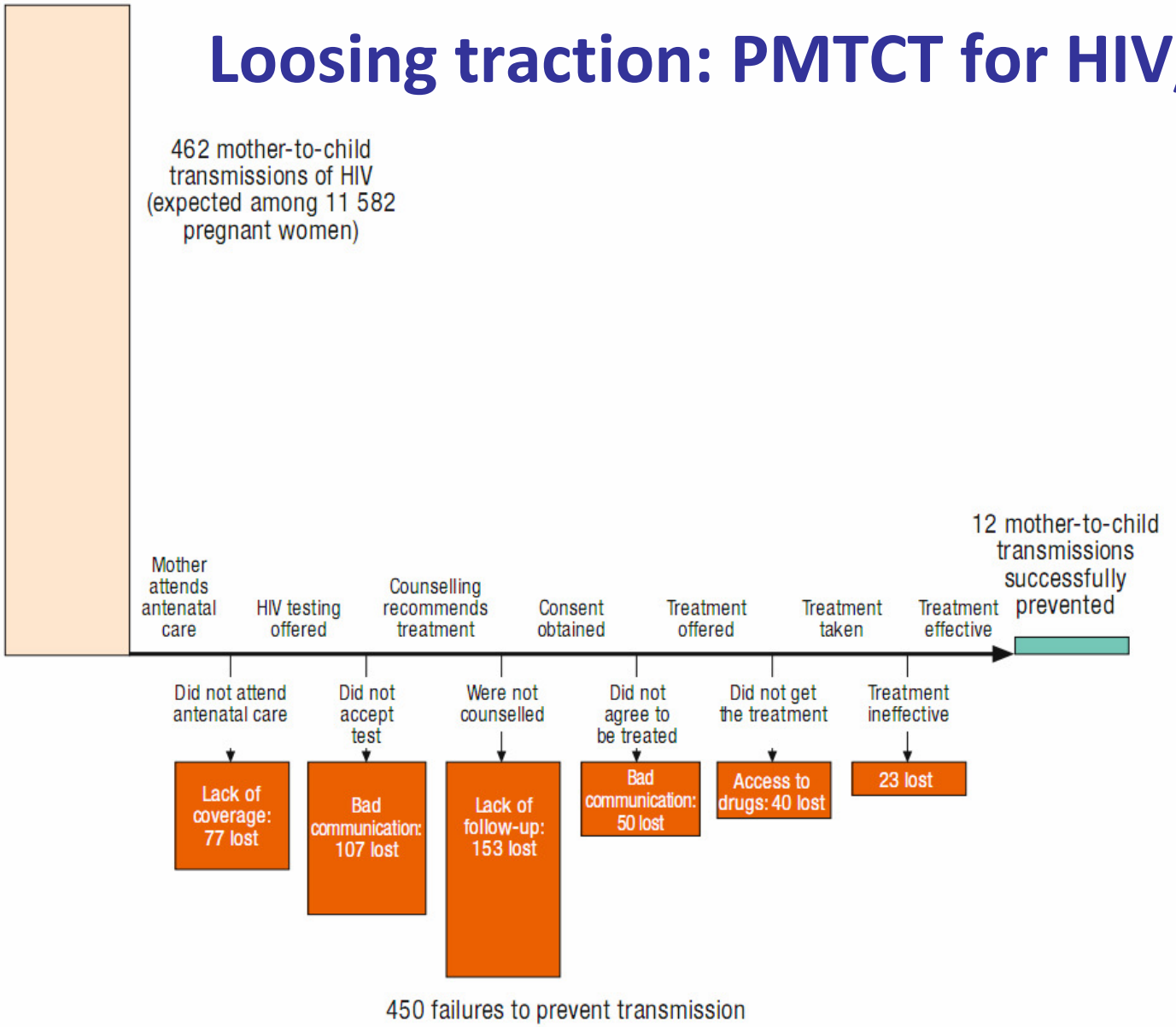


Data source: TEHIP and IMPACT Tanzania. Effectiveness (effective coverage) data are actual.

Continuity of care (coverages)



Loosing traction: PMTCT for HIV/AIDS



What defines the health system?

Health systems

"All organizations, people and action whose primary intent is to promote, restore or maintain health"

WHO, 2007

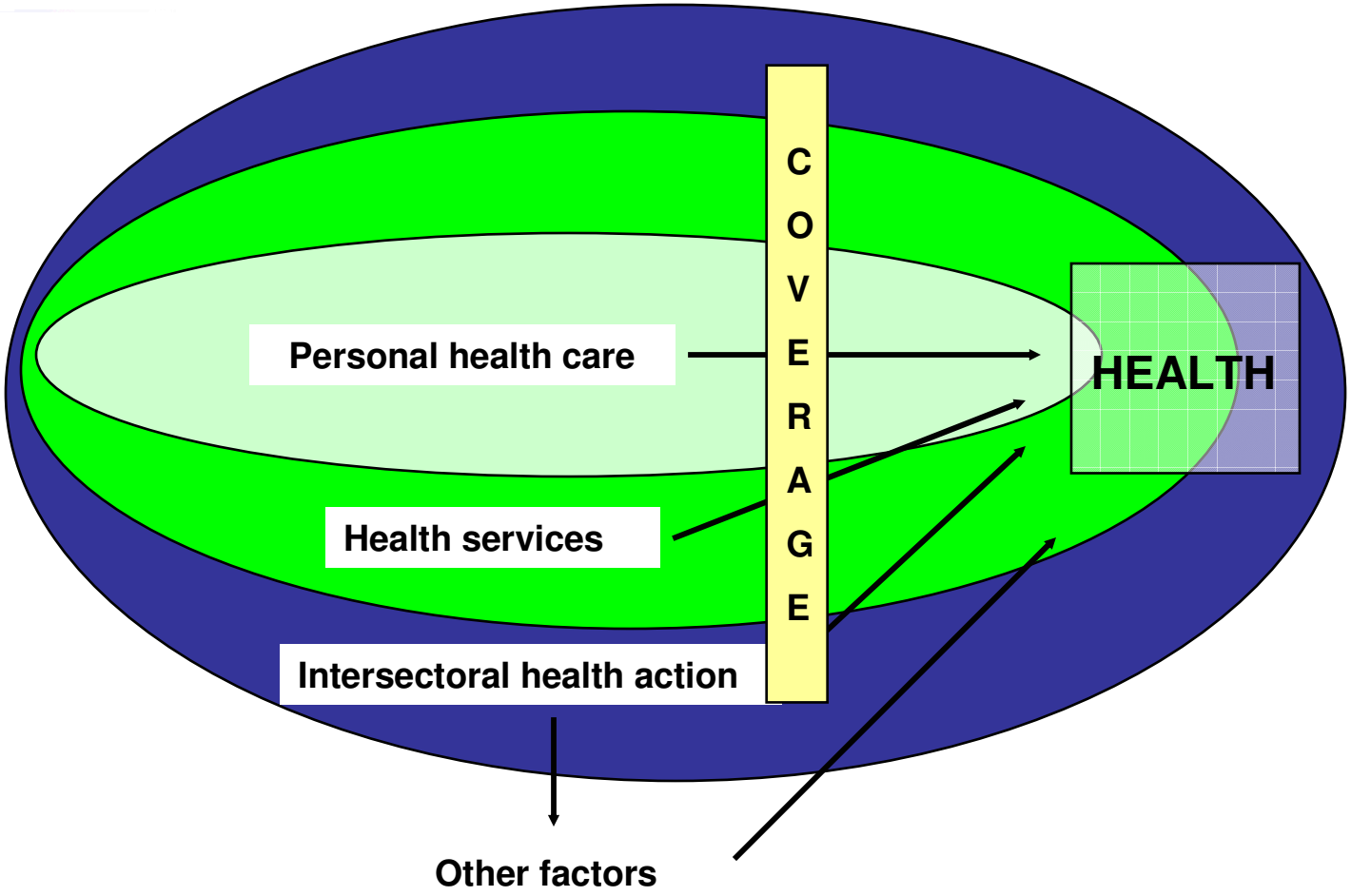
Key social goal…

Improve health by

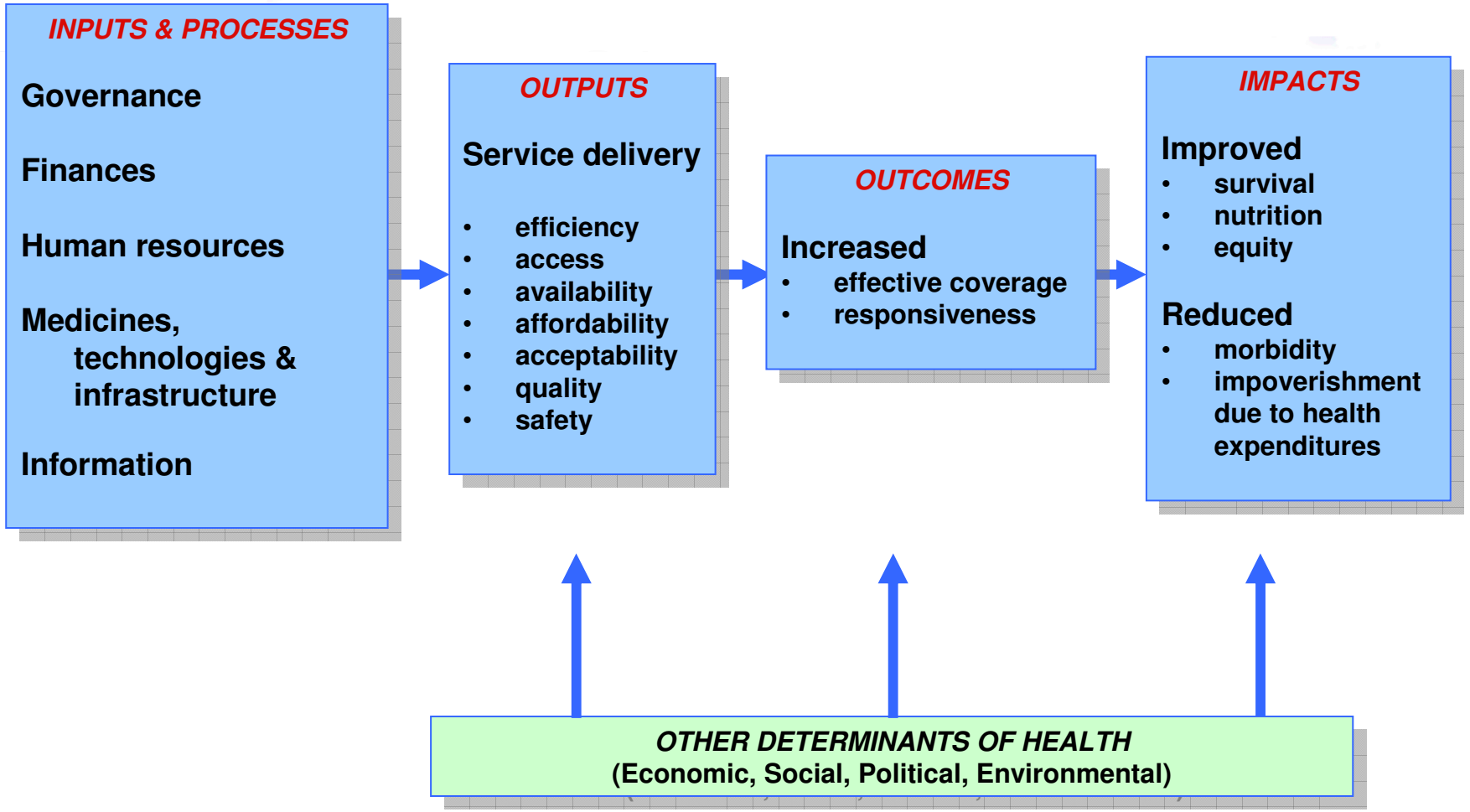
⇧ average level of population health

⇩ health inequities

Health system boundaries

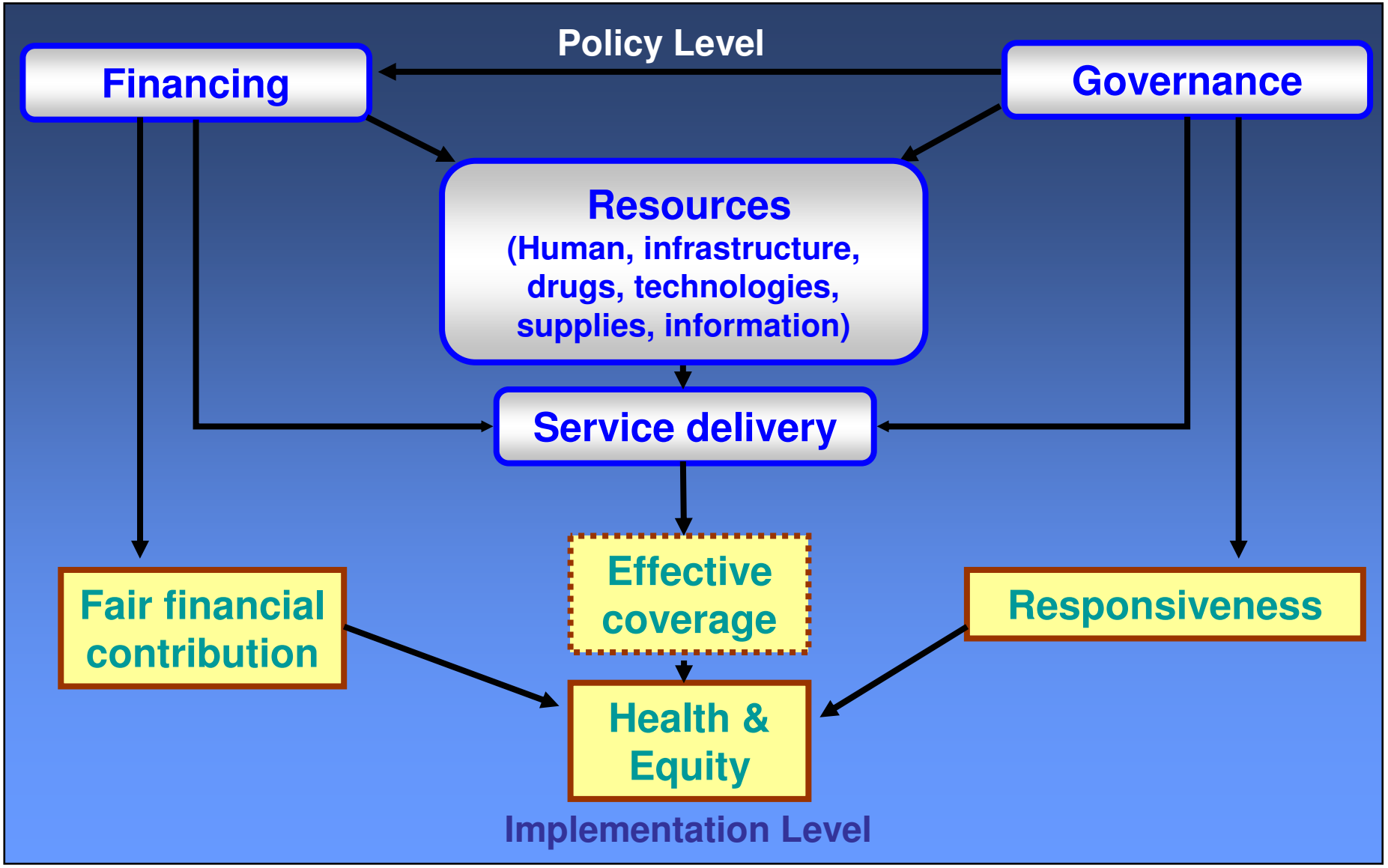


Basic health system framework



Modified from: WHO Everybody's business, 2008 & Health Metrics Network Framework, 2008

Not so linear: Health system functions and values



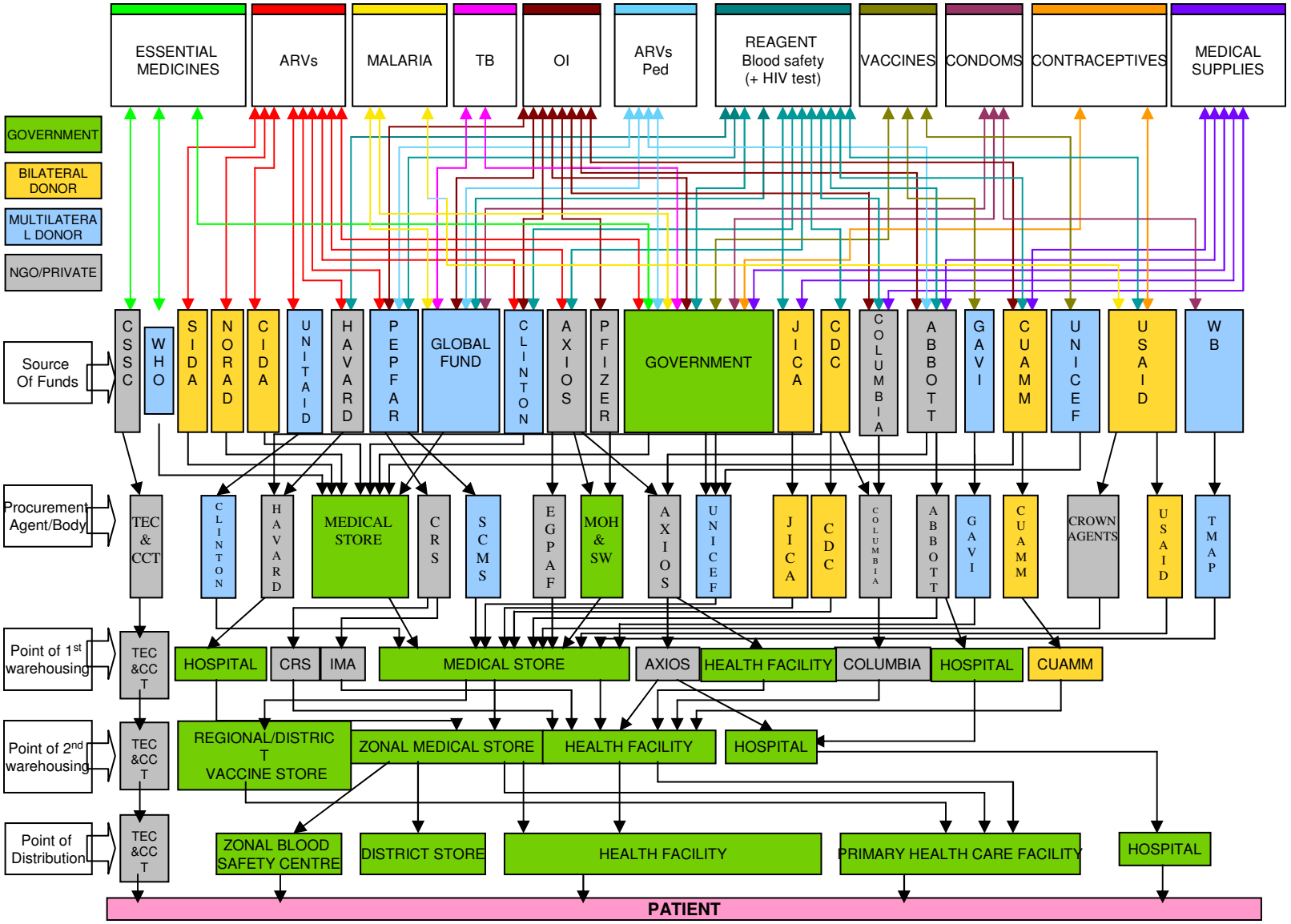
Health systems

A framework of building block sub-systems

Source: de Savigny and Adam (2009)

Health systems are complex systems

Medicines & Technologies sub-system – Tanzania 2007



And all building blocks are increasingly fragmented !

Health systems

A framework of connected sub-systems

"What happens in the spaces between the sub-systems is as important as what goes on within them; and is usually neglected".

Source: de Savigny and Adam (2009)

Characteristics of all complex systems

Most systems, including health systems, are:

- Self-organizing
- Constantly changing
- Tightly linked
- Governed by feedback
- Non-linear
- History dependent
- Counter-intuitive
- Resistant to change

And ….

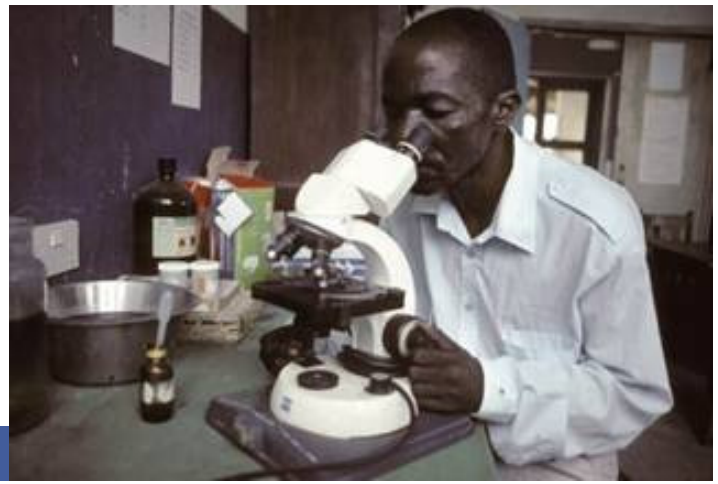
- nest sub-systems within them
- but are part of larger systems

Source: de Savigny and Adam (2009)

Health system actors

- Government
  - or body that regulates the system
- Population
  - Who ultimately pay for and receive services
- Financing agents
  - Who assemble funds and allocate to providers
- Service providers

- But there are more…



How stakeholder perspectives can vary

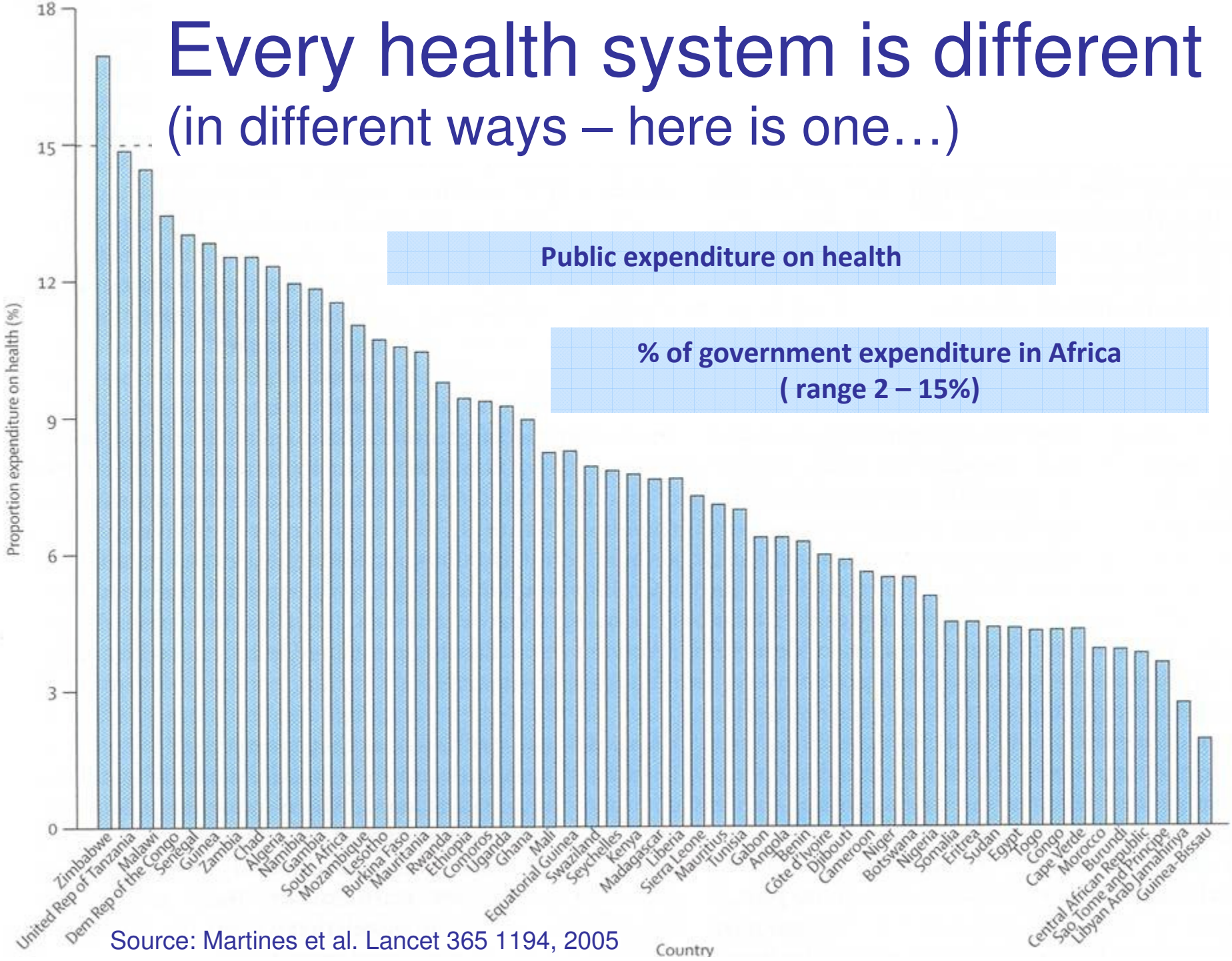
A health system is ….

- a "profit making system" from the perspective of private providers
- a "distribution system" from the perspective of the pharmaceutical industry
- an "employment system" from the perspective of health workers
- a "market system" from the perspective of household consumers and providers of health-related goods and services
- a "health resource system" from the perspective of clients
- a "social support system" from the perspective of local community
- a "complex system" from the perspective of researchers / evaluators
- a set of "policy systems" from the perspective of government
- a set of "sub-systems" from the perspective of the Ministry of Health

And sometimes a "black box" or "black hole" from the perspective of donors…

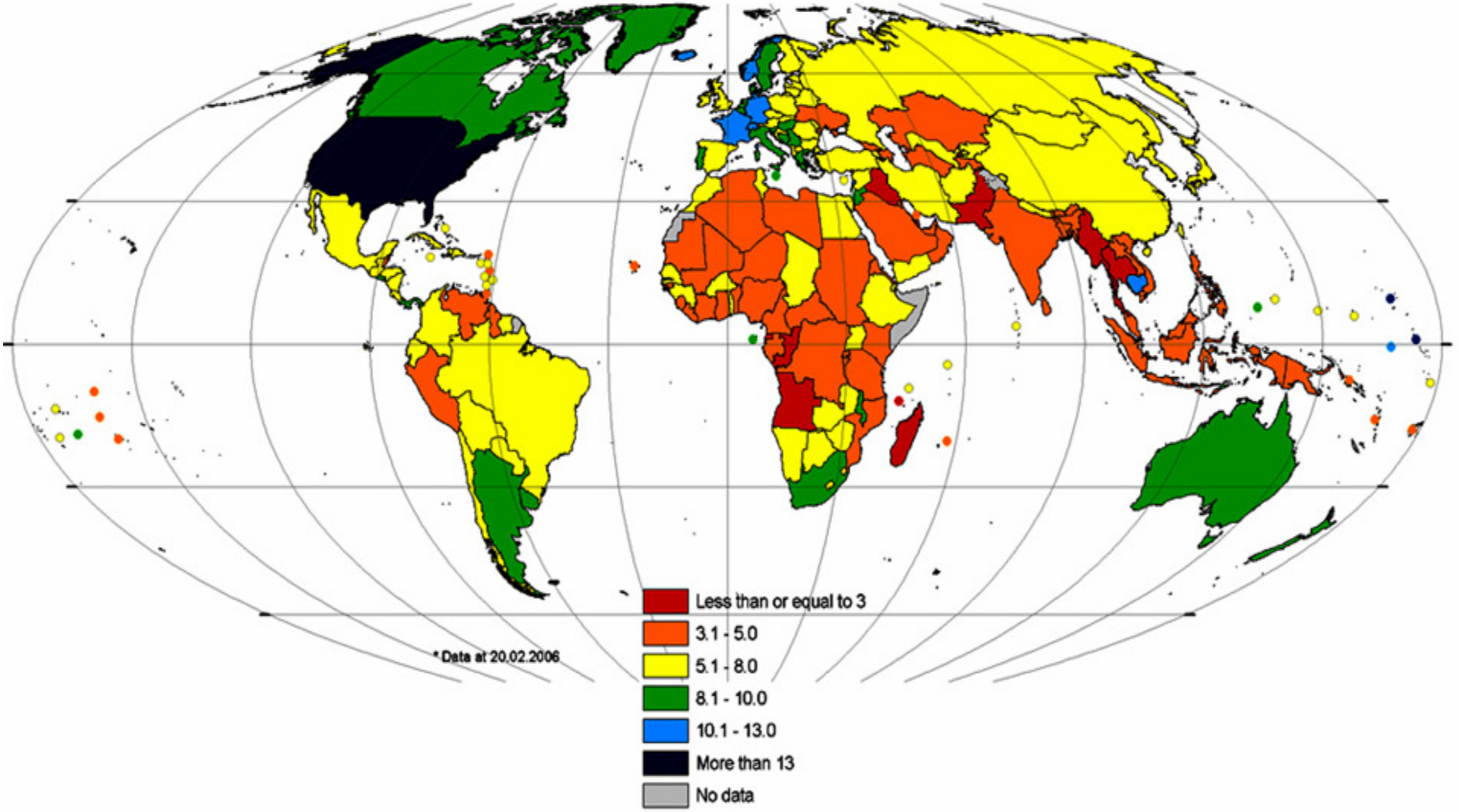
Source: de Savigny and Adam (2009)

Every health system is different
(in different ways – here is one…)



Source: Martines et al. Lancet 365 1194, 2005

Health spending around the world, 2003 *
(share of Gross domestic product, %)



World Health Organization

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: National Health Accounts unit, Evidence and information for policy, World Health Organization

Map Production: Public Health Mapping and GIS
Communicable Diseases (CDS), World Health Organization

Some contrasts

	Higest	Lowest
Total Global Health Expenditure	**$4.1 Trillion USD**	
Total Health Expenditure/capita	US $6,103	Burundi $2.90
Government Expenditure/capita	Norway $4,518	Burundi $0.70
Out-of-Pocket Expenditure/capita	Switzerland $1,787.00	Solomon Islands $1.00
Minimum expenditure/capita for basic life saving services	**$50 USD**	
Total Health R&D Expenditure	**$81 Billion USD**	

No other $ 4 trillion dollar annual enterprise would spend only 2% on R&D!

Source WHO National Health Accounts for 2007 & GFHR Monitoring Financial Flows for Health Research 2009

Trends in global health initiatives

Global strategies for health

1978  Alma Ata – Comprehensive PHC – HFA 2000

1982  UNICEF Child Survival Revolution – Selective PHC

1993 

WB WDR'93 Minimum Essential Health Interventions

2000 

UN Millennium Development Goals

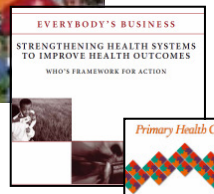
2001  Commission on Macroeconomics and Health

2002  Global Fund for AIDS, TB, Malaria

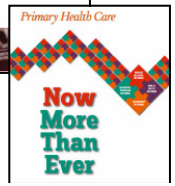
2003 

3 Million on ARVs by 2005

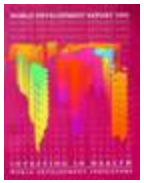
2004  Strengthening Health Research

2007 

Strengthening Health Systems

2008 

PHC Reform for systems



	1978	1982	1993	2000	2001	2002	2003-07
Strategy	C-PHC	S-PHC	Reforms & Minimum Packages				Scaling-up
Values	Equity, participation, multi-sector				Efficiency, single-sector / disease		
Content	Broad						Narrow
Focus	Process						Outputs
Orientation	Horizontal						Vertical
Time Frame	Longer						Shorter
Actors	WHO	UNICEF	WB SWAp's	PRSP's	GFATM, Donors, GHIs		
System Support	Friendly						Less friendly
System Dependence	High						Higher

Increasing fragmentation in Global Health

One example: Reporting to donors

HOSTING MISSIONS AND REPORT WRITING ARE MAJOR BURDENS AT THE DISTRICT LEVEL

TANZANIA DISTRICT EXAMPLES

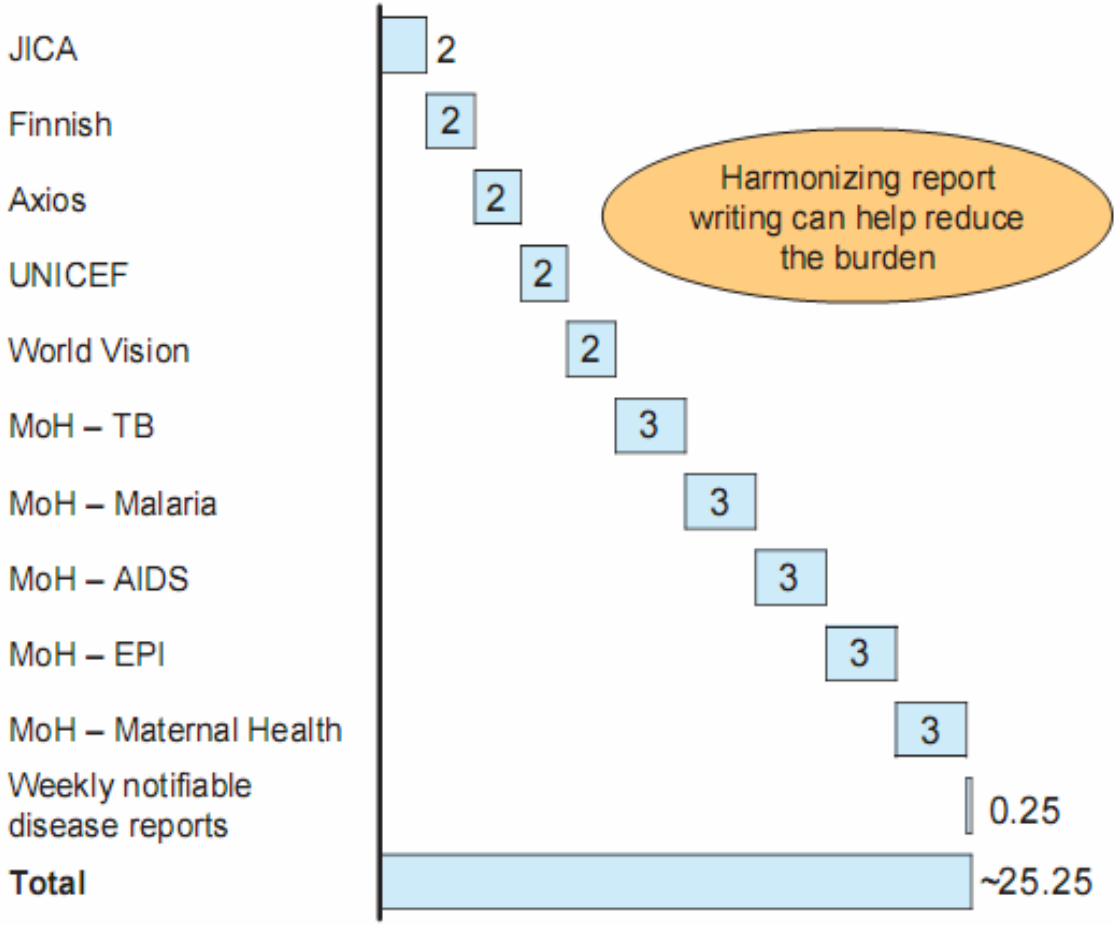
Missions can consume 10-20% of a DMO's time

Number of one day missions to Temeke during last 6 months

PEPFAR	4
GFATM	2
NTLP	2
Gates Foundation	1
Norwegian TB	1
EPI	1
UNICEF	1
WHO	1
NACP	1
NMCP	1
London School	1
Total	**16**

Report writing can consume even more time

Number of full days per quarter spent on writing reports (Morogoro)



Joint Progress Toward Enhanced Aid Effectiveness

Harmonisation, Alignment, Results

High Level Forum

Paris ■ February 28 – March 2, 2005

PARIS DECLARATION ON AID EFFECTIVENESS

Ownership, Harmonisation, Alignment, Results and Mutual Accountability

- ***Ownership:*** Countries exercise effective leadership over their development policies, and strategies and co-ordinate development actions.
- ***Harmonization:*** Donors' agree to be harmonized, transparent and collectively effective.
- ***Alignment:*** Donors base their overall support on partner countries' national development strategies, institutions and procedures.
- ***Results:*** Both agree to managing resources and improve decision-making for results.
- ***Accountability:*** Both are held accountable for development results.

Some benefits..... if used...

Joint Progress Toward Enhanced Aid Effectiveness

Harmonisation, Alignment, Results

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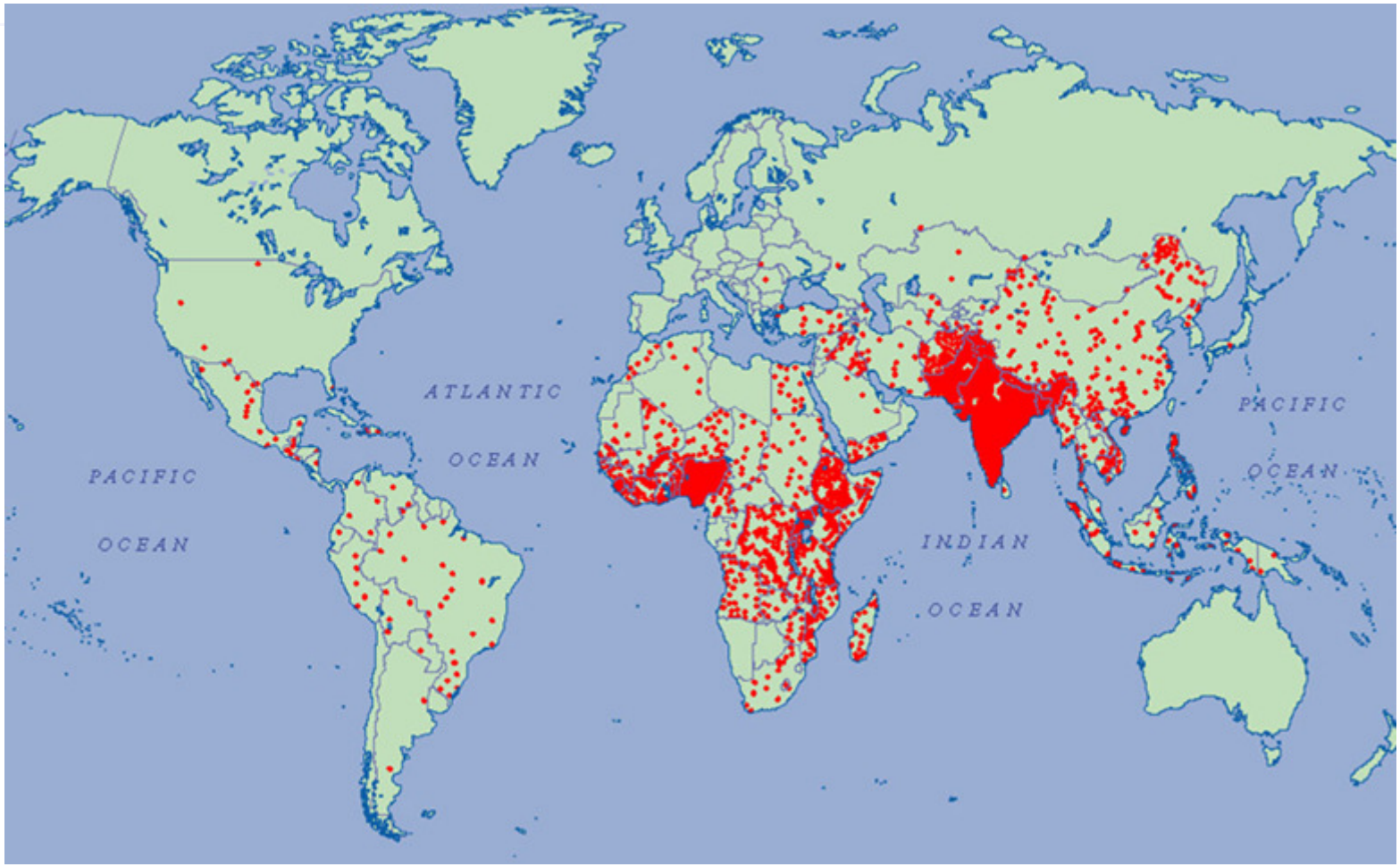
PARIS DECLARATION ON AID EFFECTIVENESS
Ownership, Harmonisation, Alignment, Results and Mutual Accountability

- Aid harmonize & aligned with country priorities and systems
- Adaptation to differing country situations
- Respect for country leadership & strengthened capacity

- Country systems used and strengthened
- Financial management & procurement capacity strengthened
- Untied aid
- Harmonized reporting demands

Home exercise: Health system profiling

Describing your health system



Four basic health systems

1. Beveridge model
   - Named after William Beveridge who designed the UK National Health Service
   - Health care for all provided and financed by government from taxes
   - Most facilities owned by government; most health workers employed by government

     E.g. UK, Cuba, Spain, New Zealand, Scandinavia
2. Bismark model
   - Named after 19th century Prussian Chancellor
   - Health care for all from non-profit insurance system financed jointly by employers and employees by payroll deduction
   - Providers are private but tightly regulated

     E.g. Germany, France, Belgium, Japan, some Latin America

Four basic health systems

3. National Health Insurance model (NHI)
   - Combines Beveridge and Bismark
   - Health care for all financed by a non-profit, single payer, government run insurance
   - All employed citizens contribute
   - All providers are private
   - Tightly regulated with high cost control (single payer)

     E.g. Canada, South Korea, Taiwan
4. Out-of-Pocket (OOP) model
   - Health care for few, financed only by and for those who can afford it

     E.g. Most of the rest of the world

Plus one more?

5. Highly fragmented model (only USA)

   All four models simultaneously for separate classes in a "classless" society

   - Beveridge for American war veterans (= Cuba)
   - Bismark for insured working Americans* (= Germany)
   - National Health Insurance for Americans over 65 (= Canada)
   - Out-of-Pocket for all other Americans (= Burkina Faso)

- Adopting a single system is simpler, cheaper and fairer (except OOP), so watch this space to see what the US health care reforms will do.

* But using multiple, for-profit insurers with little leverage for cost control

Exercise

Make a simple health system profile for your country (or another one you are interested in)

A basic profile template provided as handout

(but you can add more to it if you wish)

Needs about 1 hour and internet access

See how much you know about your system without searching

Hand-in by December 10th.

Sources of national health statistical data

- National health accounts in the WHO World Health Statistical Information System
  www.who.int/whosis/whostat/en/
- UNICEF State of the World's Children Reports
  www.unicef.org/sowc/
- World Bank World Development Reports
  www.worldbank.org/wdr/
- UNDP Human Development Reports
  http://hdr.undp.org/en/
- European Health Systems Observatory
  www.euro.who.int/observatory
- National DHS Surveys
  www.measuredhs.com/

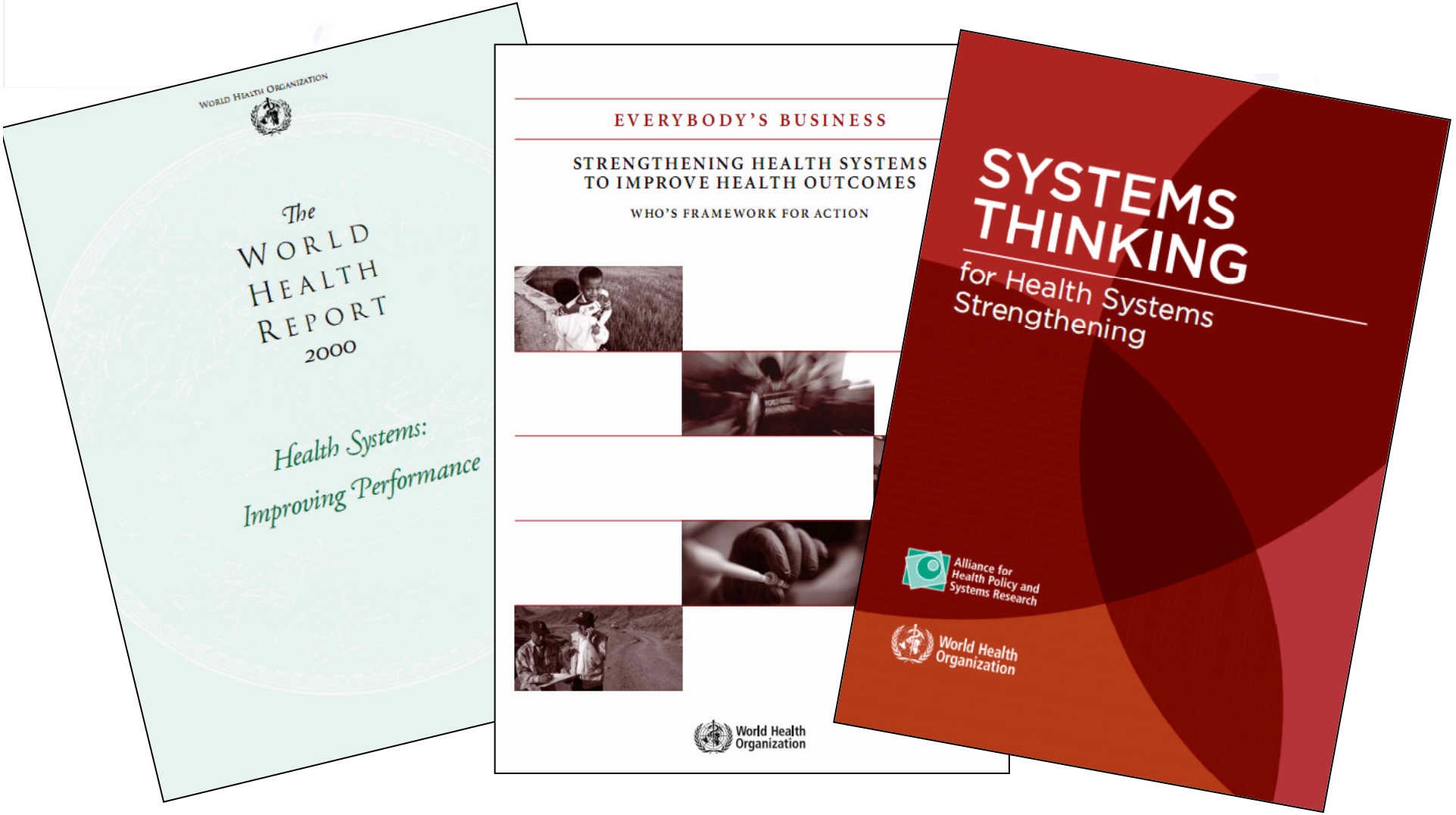
Some helpful definitions

- GDP (Gross Domestic Product) per capita
  - the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output.

- GNI (Gross National Income) per capita
  - GDP plus net receipts of primary income (compensation of employees and property income) from abroad.

- GINI Coefficient
  - Index of income inequality. 0 = complete equality; 1 = complete inequality.

Key resource documents



A last “note” from Paul Hipp

(Don’t rank your health system’s performance)

We’re number 37….

World Health Report 2000 on YouTube

http://www.youtube.com/watch?v=yVgOl3cETb4

Next, we see how you can change health systems