GlobalHealth Lab

class 3 Global Health Overview

Spring 2013

Anjali Sastry and colleagues
Readings assigned for today


Optional


Plan for today

• Quick notes
  – Meet Elli Suzuki
  – Deborah Hsieh

• Global health overview
  – Core facts
  – Maternal health challenges

• Coming up:
  – Draft workplan Friday
  – Mentor Meetings: intro/kickoff this week; workplans next
  – WedUp tomorrow
  – Tomorrow lunch session
  – Visa, shots, destination: all clear?
    Ticket purchase instructions to come
  – Our first case on Thursday
  – No class next Tuesday
what is global health?
Global health takes on health problems that cross national boundaries. Traditionally the focus has been on those health issues that impose the greatest burden in resource-limited settings. This has shifted. To address the challenges, the field now encompasses a broad range of disciplines. Proponents have argued that it should account for “cultural identities, political organizations, transnational corporations, civil society movements and academic institutions” (Frenk 2010), along with populations.

Recent reframings of global health place interdependence at the center. If the origins and effects of many of today’s biggest health problems cross national borders, then global health should be less concerned with geographical location or stage of development, and more concerned with the ways in which health issues are interconnected. This new definition of global health thus aligns with calls for multilateral collaboration and learning that flow both ways across state, sector, and socioeconomic boundaries, and for recognizing “the many contributions of both resource-rich and resource-scarce nations” (Fried et al, 10). In fact, some argue that global health is (or should be) “collaborative trans-national research and action for promoting health for all” (Beaglehole & Bonita, 10). Others note that acknowledging interrelationships requires equity to factor into solutions (Frenk, 10; Piot & Garnett, 10).

Source: Sastry 2011
Themes that we may discuss; return/set aside for later, too—these are big things!

- Human rights: is health a right? How then to deliver?
- Democracy, governance, accountability—are these deeper-level challenges to address
- Self-interest angle: XDR TB can move anywhere, fast
- “smart diplomacy”
- Mention Alma-Aty declaration
Global health quick quiz

What are the leading causes of death in the developed world? In the developing world?

What is the life expectancy at birth for someone born in the US? Japan? Mali? South Africa? India?

What diseases or health conditions impose the biggest burden in the developed world? In low-income countries?

What are the biggest health risks for people in each setting?

What is your chance of dying in childbirth in Boston? In Burundi? In Austria?

How much money flows per year to developing countries as direct assistance for health?

How many doctors per 1000 people are there in Massachusetts? In Malawi?

How does Malawi’s gross national income per capita compare with US health spending per capita?

How much does McKinsey take in for its global health consulting?
Map removed due to copyright restrictions.
World Health Organization (WHO).
IMPLEMENTATION GAP
The persistence of huge health and other disparities gave rise to the millenium development goals
Goals from the UN Millennium Declaration

Goal 1: Eradicate extreme hunger and poverty
Goal 2: Achieve universal primary education
Goal 3: Promote gender equality and empower women
Goal 4: Reduce child mortality
Goal 5: Improve maternal health
Goal 6: Combat HIV/AIDS, malaria, and other diseases
Goal 7: Ensure environmental sustainability
Goal 8: Develop a global partnership for development

WHY HAS MATERNAL HEALTH IMPROVEMENT PROVEN DIFFICULT?
Offslide discussion on maternal health
Actually many of those same issues plague other aspects of health delivery globally, not just MNCH.
## Global health delivery failures

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ARVs for PMTCT</strong></td>
<td></td>
</tr>
<tr>
<td><em>Reduce HIV transmission by 40%</em></td>
<td><em>9% coverage of women overall and 50% of women who test positive in a clinic are given ARVs for PMTCT</em></td>
</tr>
<tr>
<td><strong>ITNs for Malaria Prevention</strong></td>
<td></td>
</tr>
<tr>
<td><em>Reduce infant mortality by 23%</em></td>
<td><em>Only 24% of children in endemic areas sleep under nets</em></td>
</tr>
</tbody>
</table>

Source: GHD Project, Harvard University
Critical health interventions have historically faced slow uptake and low coverage
Gaps in coverage fall disproportionately on the poor, and amplify inequity

% coverage of health intervention in low and middle income countries

1987: Safe Motherhood Initiative
- DOTS
- Skilled birth attendance
- HepB vaccine
- ORT
- ACTs procured
- ARVs
- Hib vaccine

Typical US Drug launch (time to peak sales)

△ First year of GAVI support

Years from availability

We need to understand the root causes of these uptake patterns, to avoid the same outcome with future interventions (e.g., pneumococcal vaccine, rotavirus vaccine)

2008 data, courtesy of the Bill & Melinda Gates Foundation. Used with permission.

Source: Venkayya, Rajiv (Gates Foundation) 2009 Ensuring health technologies reach those who need them most, Presentation [http://csis.org/files/attachments/090330_venkayya.pdf]
For audio and video: http://csis.org/event/rajeev-venkayya-global-health-delivery-systems
Vaccine-Preventable Deaths
BURDEN OF DISEASE
Years of Life Lost Due to Premature Mortality by Broad Cause and Country-income Group (2004)

Low income
- Communicable diseases, maternal and perinatal conditions and nutritional deficiencies: 21%
- Noncommunicable conditions: 69%

Middle income
- Communicable diseases, maternal and perinatal conditions and nutritional deficiencies: 22%
- Noncommunicable conditions: 50%
- Injuries: 28%

High income
- Communicable diseases, maternal and perinatal conditions and nutritional deficiencies: 15%
- Noncommunicable conditions: 77%
- Injuries: 8%

Years of life (YLL) per 1000 population

Age distribution of burden of disease by country income group, 2004

High-income Countries
- 60 years and over: 35%
- 15-59 years: 56%
- 5-14 years: 5%
- 0-4 years: 4%

Low-and Middle-income Countries
- 60 years and over: 31%
- 15-59 years: 48%
- 5-14 years: 13%
- 0-4 years: 8%

Urban-rural differences, 2000-2008

Urban-rural differences in the coverage of skilled attendant at birth and measles immunization in low-income and middle-income countries-2000-2008.

Image by MIT OpenCourseWare.

Quantifying the Burden of Disease from mortality and morbidity

Text explaining calculation of Disability-Adjusted Life Year (DALY), Years of Life Lost (YLL), and Years Lost due to Disability (YLD) removed due to copyright restrictions. Source: World Health Organization. Metrics: Disability-Adjusted Life Year (DALY).
Re DALYs:

Global Burden of Disease, Injuries and Risk Factors 2010 Survey

The Global burden of disease, injuries and risk factors study 2010 is revising the disability weights used for DALY calculations and is collecting information through community surveys and an internet survey. Click on the link above to participate in the internet survey.
# Leading Causes of Mortality and Burden of Disease (world, 2004)

<table>
<thead>
<tr>
<th>Mortality</th>
<th>DALYs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ischaemic heart disease</td>
<td>12.2</td>
</tr>
<tr>
<td>Lower respiratory infections</td>
<td>6.2</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>9.7</td>
</tr>
<tr>
<td>Diarrhoeal diseases</td>
<td>4.8</td>
</tr>
<tr>
<td>Lower respiratory infections</td>
<td>7.1</td>
</tr>
<tr>
<td>Depression</td>
<td>4.3</td>
</tr>
<tr>
<td>COPD</td>
<td>5.1</td>
</tr>
<tr>
<td>Ischaemic heart disease</td>
<td>4.1</td>
</tr>
<tr>
<td>Diarrhoeal diseases</td>
<td>3.7</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>3.8</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>2.5</td>
</tr>
<tr>
<td>Prematurity, low birth weight</td>
<td>2.9</td>
</tr>
<tr>
<td>Trachea, bronchus, lung cancers</td>
<td>2.3</td>
</tr>
<tr>
<td>Birth asphyxia, birth trauma</td>
<td>2.7</td>
</tr>
<tr>
<td>Road traffic accidents</td>
<td>2.2</td>
</tr>
<tr>
<td>Road traffic accidents</td>
<td>2.7</td>
</tr>
<tr>
<td>Prematurity, low birth weight</td>
<td>2.0</td>
</tr>
<tr>
<td>Neonatal infections and other</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Perceptions versus data

Misalignment between perceptions and actual global burden of disease: evidence from the US population, Siegel et al, *Global Health Action* 2011, 4: 6339
HEALTHCARE IS MISSING NEEDED INPUTS
Doctors per person

• In Massachusetts? 4.69 (nonfederal) per 1,000
• In Malawi? 0.02
Infographic removed due to copyright restrictions.
Source: EuroRSCG Amsterdam, Netherlands.
"Doctors of the World, Netherlands: Perspective."
IS IT ABOUT ECONOMIC INPUTS?
Public Health Spending

© Copyright Sasi Group (University of Sheffield) and Mark Newman (University of Michigan). Available under a Creative Commons NC license.
World map depicting health expenditure per capita removed due to copyright restrictions. Source: Kaiser Family Foundation. "Health Expenditure Per Capita (PPP; International $)."
Total Health Expenditure per Capita


Notes: Data from Australia and Japan are 2007 data. Figures for Belgium, Canada, Netherlands, Norway and Switzerland, are OECD estimates.
Table 1: Health Status of the United States and Rank among the 29 Other OECD Member Countries removed due to copyright restrictions. 
Offslide CAVEAT: Spending does not equal health outcomes. See gapminder (below) and check resources on next page.
Comparative health spending

http://www.pbs.org/newshour/rundown/2012/10/health-costs-how-the-us-compares-with-other-countries.html
October 22, 2012 Jason Kane PBS Newshour
Health Costs: How the U.S. Compares With Other Countries

June 5, 2010 New York Times
Metrics: Health Spending vs. Results

October 1, 2012 Jake Miller CBS News/
Issue brief: Health care
Now go watch this!

Reducing child mortality – a moral and environmental

[15 minutes run time] September 27, 2010

Many countries are making good progress towards MDG4 and it’s time to stop talking about Sub-Saharan Africa as one place. So, it’s not all bad news—and Rosling makes stats and data compelling!

FUNDING FLOWS: A LOOK AT IHME DATA ON DEVELOPMENT ASSISTANCE FOR HEALTH (DAH)
DAH by channel of assistance, 1990 to 2011

DAH as a share of GDP:

USA #4

Total overseas health expenditures channeled through US NGOs by funding source, 1990-2011

## Top 15 NGOs in overseas health expenditure, 2005 to 2008

<table>
<thead>
<tr>
<th>Rank</th>
<th>NGO</th>
<th>Overseas health expenditure, adjusted</th>
<th>Overseas health expenditure, unadjusted</th>
<th>Overseas expenditure, unadjusted</th>
<th>Percent of revenue from private sources</th>
<th>Percent of revenue from in-kind contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Population Services International</td>
<td>1,265.14</td>
<td>1,265.21</td>
<td>1,347.93</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Food For The Poor</td>
<td>706.83</td>
<td>2,557.64</td>
<td>4,196.77</td>
<td>97</td>
<td>89</td>
</tr>
<tr>
<td>3</td>
<td>Catholic Relief Services</td>
<td>665.51</td>
<td>670.36</td>
<td>2,306.70</td>
<td>40</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Management Sciences for Health</td>
<td>581.94</td>
<td>581.94</td>
<td>585.98</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>PATH</td>
<td>501.23</td>
<td>505.97</td>
<td>518.54</td>
<td>90</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>United Nations Foundation</td>
<td>466.08</td>
<td>497.42</td>
<td>637.84</td>
<td>91</td>
<td>8</td>
</tr>
<tr>
<td>7</td>
<td>World Vision</td>
<td>355.80</td>
<td>472.89</td>
<td>3,178.42</td>
<td>76</td>
<td>30</td>
</tr>
<tr>
<td>8</td>
<td>Pathfinder International</td>
<td>324.45</td>
<td>325.97</td>
<td>325.99</td>
<td>23</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Elizabeth Glaser Pediatric AIDS Foundation</td>
<td>318.02</td>
<td>319.47</td>
<td>322.54</td>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>MAP International</td>
<td>293.96</td>
<td>1,398.24</td>
<td>1,398.67</td>
<td>100</td>
<td>97</td>
</tr>
<tr>
<td>11</td>
<td>Brother’s Brother Foundation</td>
<td>274.88</td>
<td>1,460.07</td>
<td>2,011.33</td>
<td>100</td>
<td>99</td>
</tr>
<tr>
<td>12</td>
<td>Academy for Educational Development</td>
<td>265.03</td>
<td>267.44</td>
<td>1,060.58</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Save the Children</td>
<td>246.24</td>
<td>254.86</td>
<td>1,428.72</td>
<td>53</td>
<td>4</td>
</tr>
<tr>
<td>14</td>
<td>CARE</td>
<td>241.20</td>
<td>241.92</td>
<td>2,370.40</td>
<td>27</td>
<td>0</td>
</tr>
<tr>
<td>15</td>
<td>Project HOPE</td>
<td>229.16</td>
<td>547.28</td>
<td>595.38</td>
<td>91</td>
<td>71</td>
</tr>
</tbody>
</table>

Total DAH per all-cause DALY, 2004 to 2009

Dollars per DALY
- $0 to $3.94
- $3.94 to $8.47
- $8.47 to $17.68
- $17.68 to $29.57
- $29.57 to $3,964.10

Top 30 country recipients of DAH, 2004 to 2009, compared with top 30 countries by all-cause burden of disease, 2004

DAH for HIV-AIDS; maternal, newborn, and child health; malaria; health sector support; TB; and non-communicable disease

DAH for maternal and child health by channel of assistance, 1990 to 2009

DAH for health sector support by channel of assistance, 1990 to 2009

What are the effects of DAH on government spending?

• Jury is still out!
  
  [link](http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1001365)

• But some indication of a partial crowding out/substitution:
  
  [link](http://www.who.int/pmnch/topics/economics/201004_publicfinancingofhealth/en/index.html)

• 2012 debate, summarized, on HIV/AIDS spending:
  
  [link](http://blogs.cgdev.org/globalhealth/2012/07/aidsspending-a-good-investment-maybe-not.php)
How much does McKinsey take in for its global health work? NO IDEA, but

• McK was one of 3 firms Gates paid $24.6 million to in 2007

• As the largest private foundation in the world, the Gates Foundation itself defies precedent in its ability to influence global health. The foundation's spending on global health was nearly equal to the World Health Organization's annual budget in 2007.

• And while we’re talking about BMGF, more than half of the philanthropy's $9 billion in spending went to 20 organizations.

[http://seattletimes.com/html/thebusinessofgiving/2009193675___heres_how_the_article.html](http://seattletimes.com/html/thebusinessofgiving/2009193675___heres_how_the_article.html) Gates Keepers (site no longer available)
<table>
<thead>
<tr>
<th>Type of organisation</th>
<th>Number of grants</th>
<th>Cumulative amount awarded (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAVI Alliance</td>
<td>5</td>
<td>1512 838 000</td>
</tr>
<tr>
<td>PATH</td>
<td>47</td>
<td>949 603 525</td>
</tr>
<tr>
<td>Global Fund to Fight AIDS, Tuberculosis and Malaria</td>
<td>5</td>
<td>651 047 850</td>
</tr>
<tr>
<td>WHO</td>
<td>69</td>
<td>335 888 331</td>
</tr>
<tr>
<td>University of Washington (Seattle, WA, USA)</td>
<td>12</td>
<td>279 162 976</td>
</tr>
<tr>
<td>Medicines for Malaria Venture</td>
<td>3</td>
<td>202 000 000</td>
</tr>
<tr>
<td>Johns Hopkins University (Baltimore, MD, USA)</td>
<td>21</td>
<td>228 273 765</td>
</tr>
<tr>
<td>International AIDS Vaccine Institute</td>
<td>6</td>
<td>155 280 244</td>
</tr>
<tr>
<td>Institute for OneWorld Health</td>
<td>9</td>
<td>146 324 860</td>
</tr>
<tr>
<td>International Bank for Reconstruction and Development</td>
<td>12</td>
<td>134 486 883</td>
</tr>
<tr>
<td>Global Alliance for TB Drug Development</td>
<td>3</td>
<td>129 423 823</td>
</tr>
<tr>
<td>Save the Children Federation</td>
<td>26</td>
<td>126 317 495</td>
</tr>
<tr>
<td>International Vaccine Institute</td>
<td>3</td>
<td>113 990 173</td>
</tr>
<tr>
<td>Liverpool School of Tropical Medicine (Liverpool, UK)</td>
<td>4</td>
<td>109 147 462</td>
</tr>
<tr>
<td>Aeras Global TB Vaccine Foundation</td>
<td>4</td>
<td>308 571 409</td>
</tr>
<tr>
<td>Harvard University (Cambridge, MA, USA)</td>
<td>18</td>
<td>90 587 678</td>
</tr>
<tr>
<td>Columbia University (New York, NY, USA)</td>
<td>15</td>
<td>93 425 838</td>
</tr>
<tr>
<td>London School of Hygiene and Tropical Medicine (London, UK)</td>
<td>10</td>
<td>89 924 649</td>
</tr>
<tr>
<td>Imperial College London (London, UK)</td>
<td>9</td>
<td>83 605 989</td>
</tr>
<tr>
<td>CONRAD/Eastern Virginia Medical School (Norfolk, VA, USA)</td>
<td>5</td>
<td>79 792 344</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>5819 692 720</td>
</tr>
</tbody>
</table>

Table 3: Top 20 recipients by cumulative total of grants awarded by the Bill & Melinda Gates Foundation’s global health programme during 1998–2007

The Bill & Melinda Gates Foundation’s grant-making programme for global health.

Dr David McCoy DrPH, Gayatri Kembhavi MScPT, Jinesh Patel BSc, Akish Luitel BSc
The Lancet - May 2009 (Vol. 373, Issue 9675, Pages 1645-1653)

http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(09)60571-7/abstract
HOW IS THIS PLAYING OUT FOR ORDINARY PEOPLE?

Return to some of the data we started with
life expectancy

Life expectancy at birth for someone born in

- the US: 78.4 years
- Japan: 82.6
- Mali: 48.4 years
- South Africa: 51.5
- India: 63.7
- China: 73.1
maternal death

Chance of dying in childbirth

• in Boston
  – 1 in 4,800

• In Burundi
  – 1 in 16

• in Austria
  – 1 in 21,500

• world
  – 1 in 92

A women’s lifetime risk of dying from pregnancy-related complications:
Niger: 1 in 7
Ireland: 1 in 48,000

http://www.who.int/making_pregnancy_safer/topics/maternal_mortality/en/
The maternal mortality ratio in developing countries is 450 maternal deaths per 100,000 live births versus 9 in developed countries. Fourteen countries have maternal mortality ratios of at least 1000 per 100,000 live births, of which all but Afghanistan are in sub-Saharan Africa: Afghanistan, Angola, Burundi, Cameroon, Chad, the Democratic Republic of the Congo, Guinea-Bissau, Liberia, Malawi, Niger, Nigeria, Rwanda, Sierra Leone and Somalia.

Because women in developing countries have many pregnancies on average, their lifetime risk more accurately reflects the overall burden of these women. A woman’s lifetime risk of maternal death is 1 in 7300 in developed countries versus 1 in 75 in developing countries.
## Comparing the US and Malawi

<table>
<thead>
<tr>
<th></th>
<th>Malawi</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>% GDP on health</td>
<td>9.1</td>
<td>15.2</td>
</tr>
<tr>
<td>Percapita hlth spend (PPP $)</td>
<td>49</td>
<td><strong>7,164</strong></td>
</tr>
<tr>
<td>Pvt spend as % of total</td>
<td>39.4</td>
<td>52.2</td>
</tr>
<tr>
<td>Children/woman</td>
<td>5.5</td>
<td>2.1</td>
</tr>
<tr>
<td>Gross nat’il income per capita (PPP $)</td>
<td><strong>760</strong></td>
<td>45,640</td>
</tr>
<tr>
<td>% population living on under PPP$1/day</td>
<td>73.9</td>
<td>-</td>
</tr>
</tbody>
</table>

Discuss implications of the previous data. Some themes to explore:

We can’t get there with more of the same: we need to try very different things

What exactly does this comparative data lead you to suggest we should do to tackle global health needs

isn’t the crowding out question moot when there is no way a government can spend enough on health? Consider Malawi
TO ADDRESS THE GAPS IN GLOBAL HEALTH, WHAT IS MOST URGENTLY NEEDED?
WHAT IS NEEDED?

At one level, you could answer with the following:

Fewer stockouts
Lower cost of care
Less loss to follow up
More prevention
Better patient experience
Link primary to other care
Scale up what works
BUT HOW TO GET TO THOSE OBJECTIVES?
WHAT IS NEEDED?

MORE MONEY, MORE MEDS, MORE HEALTH WORKERS, MORE DOCS

CLEVER NEW TECHNOLOGIES

NEW APPROACHES, SMARTER OPERATIONAL MODELS, BETTER DESIGN, BETTER SYSTEMS, LESS LOSS TO FOLLOW UP, MORE PREVENTION
Management is needed

Watch [this MIT video](#) from November 19, 2007:

Bridging the Delivery Gap to Global Health
Speaker: Dr. Jim Yong Kim
FOCUS ON QUALITY: QUALITY CHASM FRAMEWORK

From the US Institutes of Medicine: the late 90s and early 2000s work addressed medical errors, then broadened. And this thinking set the stage, I would argue, for the healthcare reform changes that are continuing.
How Hazardous Is Health Care?

(Leape)

DANGEROUS
(>1/1000)

HealthCare

REGULATED

Driving

ULTRA-SAFE
(<1/100K)

Mountain Climbing

Bungee Jumping

Chemical Manufacturing Chartered Flights

Scheduled Airlines

European Railroads Nuclear Power

Total lives lost per year

100,000

10,000

1,000

100

10

1

1

10

100

1,000

10,000

100,000

1,000,000

10,000,000

Number of encounters for each fatality

For US, circa 2003


Courtesy of Institute for Healthcare Improvement. Used with permission.
The Chain of Effect in Improving Health Care Quality

Patient and Community | Experience | Aims (safe, effective, patient-centered, timely, efficient, equitable)
---|---|---
Micro-system | Process | Simple rules/Design Concepts (knowledge-based, customized, cooperative)
Organizational Context | Facilitator of Processes | Design Concepts (HR, IT, finance, leadership)
Environmental Context | Facilitator of Facilitators | Design Concepts (financing, regulation, accreditation, education)

© 2002 Institute for Healthcare Improvement

Courtesy of Institute for Healthcare Improvement. Used with permission.
Changing the Organizations that Deliver Care

- Redesign care based on best practices
- Use information technology to improve access to information and to support clinical decision-making
- Improve workforce knowledge and skills
- Develop effective teams
- Coordinate care among services and settings
- Measure performance and outcomes
Six Aims of High-Quality Health Care

1. **Safe.** Avoiding injuries to patients from the care that is intended to help them.
2. **Effective.** Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit.
3. **Patient-centered.** Providing care that is respectful and response to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions
4. **Timely.** Reducing waits and sometimes harmful delays for both those who receive and those who give care.
5. **Efficient.** Avoiding waste, including waste of equipment, supplies, ideas, and energy.
6. **Equitable.** Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status.

Ten Rules to Guide the Redesign of Health Care

1. Care based upon continuous healing relationships.
2. Customization based on patient needs and values.
3. The patient as the source of control.
4. Shared knowledge and the free flow of information.
5. Evidence-based decision making. Patients should receive care based on the best available scientific knowledge.
6. Safety as a system property.
7. The need for transparency.
8. Anticipation of needs.
10. Cooperation among clinicians.

start here for WHO data


- [http://www.who.int/gho/en/](http://www.who.int/gho/en/) Global Health Observatory is WHO's portal for data and analyses for monitoring the global health situation. Includes data repository, statistical reports, and more. Many of the items below are linked here too.

- [http://gamapserver.who.int/mapLibrary/app/searchResults.aspx](http://gamapserver.who.int/mapLibrary/app/searchResults.aspx) Map gallery.


Some more data sources

- http://www.globalhealth.org/view_top.php3?id=621
- http://globalhealth.kff.org/
- http://www.gapminder.org/
- http://www.worldmapper.org/textindex/text_index.html
- http://www.measuredhs.com/
see you Thursday
for our first case!
15.S07 GlobalHealth Lab
Spring 2013

For information about citing these materials or our Terms of Use, visit: http://ocw.mit.edu/terms.