Health-Related Millennium Development Goals

Progress and Challenges

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Annual Global Health Lecture
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Topics

- Cycle of health and development
- Status of the health-related MDGs
- Barriers to progress and positive interventions
  - Health System
  - Social System
- Summary Comments
Millennium Development Goals

• Adopted in September 2000 by world leaders at United Nations

• New global partnership to eradicate extreme poverty

• Blueprint agreed to by 189 countries and leading development institutions

• Series of time-bound targets; with deadline of 2015

Source: un.org/millenniumgoals
“Health is the tie that binds all the MDGs together”

Ban Ki-Moon
Secretary General
United Nations
15 June, 2009
Correlation of Malaria and Poverty

Five-fold difference in average GDP between malarious and non-malarious countries (1995)

Substantial difference in average per capita GDP growth: 0.4% malarious vs. 2.3% non-malarious (1960-1990)

"HIV/AIDS has now become the single most important obstacle to social and economic progress in many countries in Africa" (Raashied Galant, Africa News Service, 18 Oct. 1999)

“…the impact of AIDS on the gross domestic product (GDP) of the worst affected countries is a loss of around 1.5% per year; this means that after 25 years the economy would be 31% smaller than it would otherwise have been”

Millennium Development Goals
Health Related MDGs

1. Eradicate Extreme Poverty and Hunger
2. Achieve Universal Primary Education
3. Promote Gender Equality
4. Reduce Child Mortality
5. Improve Maternal Health
6. Combat HIV/AIDS, Malaria, Other Diseases
7. Ensure Environmental Sustainability
8. Develop Global Partnership for Development

Source: www.undp.org/mdg/basics
Health Related MDGs
Goal 4: Reduce Child Mortality

Reduce by two-thirds, between 1990 and 2015, the under five mortality rate

Facts
- Approximately 8.8 million under five child deaths in 2008
- Child mortality 13x higher in developing vs. industrialized countries
- Sub-Saharan Africa: 20% of under five population, 50% of deaths
- Mostly from preventable causes--Pneumonia, Diarrhea, Malaria, Measles, Tetanus

Progress
- 30% decline in child deaths since 1990, 65% reduction since 1960
- Measles deaths down 68% since 2001, from 757,000 to 242,000. In Africa, measles deaths down 91%
- India has lowest immunization rates, highest <5 mortality after Africa
- Funds committed to distribute 100 million anti-malaria bed nets (of 250 million needed)

Sources: NY Times September 9, 2009, UN Department of Public Information - DPI/2517 - September 2008, UN Meeting on MDGs – July 2008, unicefusa.org
Health Related MDGs
Goal 4: Reduce Child Mortality

Expanded Programme on Immunization (EPI)

Insecticide Treated Bed Net (ITN) Distribution
Health Related MDGs
Goal 5: Improve Maternal Health

Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio

Facts

- A woman dies every minute from maternal complications (500k yr)
- 99% are in developing countries
- Risk of dying from preventable/treatable complications:
  - Ireland: 1 in 47,000
  - Sweden: 1 in 17,400
  - Developed Countries: 1 in 7,300
  - Sub-Saharan Africa: 1 in 22
  - Niger: 1 in 7
- Results in 1 million new orphans per year

Progress

- Area of least progress in all MDGs
- Negligible progress in Sub-Saharan Africa between 1990 and 2005
- Northern Africa, Latin America, Caribbean and South East Asia reduced mortality by one-third
- Coverage by skilled health personnel remains low; 47% in Sub-Saharan Africa, 40% in Southern Asia
- Girls under 15 are 5x more likely to die in childbirth as woman ages 20+

Source: UN Department of Public Information - DPI/2517 - September 2008
Health Related MDGs
Goal 6: Combat HIV/AIDS, Malaria, Other Diseases

Have halted by 2015 and begun to reverse the spread of HIV/AIDS

Facts

• Each day, 7500 people are infected with HIV/AIDS and 5,500 people die

• Over 33 million PLWA, vast majority in Sub-Saharan Africa, over 22 million deaths from HIV/AIDS

• Among adolescents, 75% of infected population are girls

• TB the leading cause of death for PLWA, rising incidence of MDR/XDR

• In 2004, 9.5% of ~1.5 million HIV+ pregnant women in low-middle income countries received PMTCT

Progress

• AIDS deaths slowly declining: 2.2 million in ’05, 2.0 million in ’07/’08

• New infections also declining; 3.2 million in ’01, 2.7 million in ‘08

• 3 million people receiving ARVs, approximately 30% of those in need

• Still 3 to 4 new infections for every person put on treatment, indicating need for new prevention methods

• In 2008, 45% of ~1.4 million HIV+ pregnant women received PMTCT

Sources: www.until.org, UN Department of Public Information - DPI/2517 - September 2008, UNAIDS, WHO; UNICEF January 2010
Health Related MDGs
Barriers to Progress

• Health System Barriers
  – Financing
  – Access to Care
  – Clinician Shortages
  – Working Conditions

• Social System Barriers
Health System Barriers
Financing

**Public Sector Spending for Health (Per Capita 2003)**

<table>
<thead>
<tr>
<th>Country</th>
<th>Spending</th>
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<tbody>
<tr>
<td>Malawi</td>
<td>$5</td>
</tr>
<tr>
<td>Kenya</td>
<td>$8</td>
</tr>
<tr>
<td>Mali</td>
<td>$9</td>
</tr>
<tr>
<td>Thailand</td>
<td>$17</td>
</tr>
<tr>
<td>Brazil</td>
<td>$96</td>
</tr>
<tr>
<td>Mexico</td>
<td>$172</td>
</tr>
<tr>
<td>Canada</td>
<td>$1,866</td>
</tr>
<tr>
<td>USA</td>
<td>$2,548</td>
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</tbody>
</table>

**Sources of Health Services Spending**

- **Lowest Income Countries**
  - Other Private Spending: 23%
  - External Assistance: 21%
  - Government Spending: 59%

- **Highest Income Countries**
  - Other Private Spending: 48%
  - External Assistance: 21%
  - Government Spending: 16%

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"We are still $21 billion behind in investments for the health MDGs"
Professor Jeffrey Sachs, June 2009

Sources: Earth Institute, Jeffrey D. Sachs, April 22, 2009; National Health Accounts Database, WHO, 2003
Health System Barriers
Access to Care

- Most health systems in Sub-Saharan Africa are replicas inherited from colonial era
- Much lower access in rural vs. urban settings, and among higher vs. lower income classes
- Health ministry funding for district and rural health facilities may only cover salaries, and not any other costs
- Poor roads and transportation, and economic hardship make it very difficult for residents in rural areas to access care
- In South Africa, poorest people must travel an average of two hours to seek medical care, vs. 34 minutes for richest people
- Some programs are specifically increasing access in villages (e.g. Millennium Villages Project), these need to be expanded

Sources: Health Care in Africa, Dan Kaseje MD, November 2006; World Economic Forum Global Health Initiative
Health System Barriers
Clinician Shortages

Medical Doctor Workforce
Physicians Per 100,000 People

Global Health Workforce
Health Workers Per 1000 People

Sub-Saharan Africa
- 70% of Global HIV/AIDS Burden
- 24% of Global Disease Burden
- 11% of Global Population
- 3% of Global Health Workforce
- 1% of Global Health Expenditures

57 countries, 36 in Sub-Saharan Africa, have such critical staffing shortages that basic healthcare cannot be provided

Africa needs 1 million more health workers; requires $5 billion additional funding

Sources: Earth Institute, Jeffrey D. Sachs, April 22, 2009; World Economic Forum Global Health Initiative, UN MDG Meeting – July 2009
Health System Barriers
Working Conditions

- Compounding clinician shortages, high disease prevalence countries typically have dangerous work environments.
- HIV, HBV, HCV can be transmitted from patient to clinician through blood and bodily fluid exposures.
- Sharps injury (needles, scalpel blades, broken glass) and blood splashes are common forms of exposure.
- First documented HIV transmissions to clinicians from sharps injury occurred in Africa in 1984; in the US in 1987.
- Interventions since then to protect health workers in the US: universal precautions, mandatory HBV vaccine, post-exposure prophylaxis.
- National US sharps safety law passed in 2000 requiring protected needles; laws enacted later in Canada, Germany, Spain, and Brazil.

Health System Barriers
Working Conditions

- Clinicians in developing countries face highest risk, yet there are virtually no legislative, regulatory or clinical policy interventions
- Caregivers typically work in unprotected conditions – limited or no gloves, personal protective equipment (PPE) or protected needles
- Results in high risk of patient-to-caregiver disease transmission
- Rates of occupational transmission remain undocumented in most developing countries
- Death from AIDS is largest cause of health workforce attrition in Lesotho and Malawi
- Study in Zambia (one region) found 40% of midwives were HIV+
- These conditions contribute to caregiver migration to the West; a ‘push’ factor in addition to the ‘pull’ factor of higher wages

Health System Barriers
Working Conditions

% of Global HIV Infected Population

- North America/Western Europe: 26%
- Sub-Saharan Africa: 70%
- Other: 4%

% of Documented HIV Transmissions to Health Workers

- North America/Western Europe: 5%
- Sub-Saharan Africa: 4%
- Other: 91%

Health System Barriers
Working Conditions
Health System Barriers
Positive Interventions

• Five years ago, very few international organizations and leaders were emphasizing health system strengthening

• Situation has substantially changed

• Today, health system strengthening is a major priority of the:
  – United Nations Secretary General
  – United Nations Children’s Fund (UNICEF)
  – Global Fund to Fight AIDS, TB and Malaria
  – US President’s Emergency Plan for AIDS Relief (PEPFAR) and Executive Branch (Obama Administration)
  – Many NGOs and private sector organizations

“The challenge is to raise funds vertically and allocate them horizontally”
Michel Sidibe, Executive Director UNAIDS
Health System Barriers
Positive Interventions

Millennium Villages Project

- Established by Earth Institute at Columbia University, Millennium Promise and the UN Millennium Project
- Applies expertise in agriculture, nutrition, health, economics, energy, water, environment and IT
- Demonstrates how MDGs can be reached; community approach using local institutions and governance, with scientific, evidence-based, practical investments
- Presently operating 78 villages at 12 sites in 10 countries in sub-Saharan Africa
- BD supporting global HIV interventions, and strengthening of national TB diagnostic testing capabilities in Mali
Clinical Practice Training and Research

- Accordia Global Health Foundation funds the Infectious Disease Institute (IDI) in Uganda
- Leading center for research, MD training and HIV/AIDS treatment in sub-Saharan Africa
- Unique partnership between top US-based HIV MD/academicians and their African counterparts
- Particular focus on local researchers; 88 published research articles and 110 research abstracts presented
- Currently 36 research studies underway at IDI
- 1622 medical doctors and 3191 other health workers from 27 African countries have been trained at the IDI
- IDI also served as launch site for BD/PEPFAR laboratory system strengthening collaboration

Photo Credits: Nancy Farese Photography, Richard Lord, Charles Steinber
Health System Barriers
Positive Interventions

Laboratory Strengthening

- Effective diagnosis and monitoring essential for treatment of infectious diseases such as HIV, TB
- Most developing countries lack adequate laboratory staffing and quality controls
- In 2007 BD and PEPFAR entered into a new partnership for laboratory system strengthening
- Five year public private partnership with $18 million funding commitment
- Focuses on training, quality systems, strengthening TB reference sites, supporting national laboratory strategies
- Presently in 10 countries, overall BD GLP program operating in 60 countries, 4700 technicians trained
Wellness Centres for Health Workers

- Concept originated by the International Council of Nurses (ICN), based in Geneva
- BD joined as funding and training partner in 2007
- Provides comprehensive services to health workers and their families
- Services include HIV and TB testing, counseling, treatment; antenatal; post-exposure prophylaxis; professional training including personal protection
- Centres being established in five countries: Swaziland, Lesotho, Zambia, Malawi, Uganda
- Partners include Stephen Lewis Foundation, nursing societies of Denmark, Norway and Sweden, PEPFAR
Impacts from the Private Sector

- Increased, sustainable access to needed therapies, diagnostic tests and commodities
- New technologies specifically designed for developing world needs and requirements
- Technical training and capacity building
- Establishment of service infrastructure
- Volunteer deployment
- Advocacy for policy change and funding
- Manifested primarily through cross sector agreements - Public Private Partnerships (PPPs)
- Philanthropy; cash and in-kind donations
Health System Barriers
Positive Interventions

Entities BD Collaborates With for Health System Strengthening

[Logos of various organizations related to health system strengthening]
**Social System Barriers**

**Definition**

*Underlying causal factors in broader society, including social norms, behaviors and legal frameworks, that contribute to disease spread and inhibit economic and social development*

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**Example:** Evolution of Systemic Global Response to HIV/AIDS

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Barriers</th>
<th>Causes</th>
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<tbody>
<tr>
<td>Increased ARV Access</td>
<td>Health System Strengthening</td>
<td>Social System Strengthening</td>
</tr>
<tr>
<td>Primary Focus 2000-2006</td>
<td>Emerging Focus 2006-2012</td>
<td>New Focus 2012 Onward?</td>
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</tbody>
</table>
Social System Barriers
Gender Inequality

- Lack of investment in women’s health a reflection of gender inequality
- Manifests in absence of progress on maternal mortality and fast HIV growth among females
- Ample evidence demonstrates investment in women and girls helps to drive development:
  - 10%↑girls in school adds 3% economic growth
  - Educated girls return 90% of earned income to family, compared with 35% from boys
  - Limited opportunities for women in Africa reduce annual per capita growth by 0.8%
- Opportunity to accelerate attainment of the MDGs
- Requires new approaches and interventions – Social System Strengthening

Social System Barriers
Gender Inequality

Social System Strengthening

• Women’s Health (ex: antenatal and emergency care)
• Access to Education (ex: sanitary facilities for girls)
• Legal Frameworks (ex: property ownership)
• Investment in Women and Girls (ex: micro-financing)
• Changes in Societal Norms (ex: women as leaders)

• Protection from Vulnerability (ex: sexual violence)
Sexual Violence Against Girls
Facts and Data

- Approximately 150 million girls experienced some form of sexual violence with physical contact; a problem everywhere in the world.
- In a multi-country study, 20% - 50% of females indicated that their first sexual experience was forced.
- Nearly 50% of all sexual assaults are committed against girls 15 years old or younger.
- Extensive survey in Swaziland showed 1/3 of females experienced some form of sexual violence as a child (based on WHO definition).
- Approximately 3/4 of perpetrators were men or boys from the victims' neighborhood; relatives or friends.
- Most severe circumstances involve use of sexual violence as a tool of war in conflict zones (Rwanda, Serbia, DRC, Zimbabwe).
- Perpetrators of sexual violence often face no consequences, while victims suffer devastating effects.

Sexual Violence Against Girls
Societal Impacts

• A substantial human rights problem with serious health impacts
• Associated with an increased risk of acquiring sexually transmitted diseases such as HIV, both as an outcome of abuse and engaging in higher risk behaviors after being sexually abused
• Female youth in sub-Saharan Africa 3x more likely to be infected with HIV compared to males their age
• Sexual violence linked to unwanted pregnancies, maternal mortality, infertility, depression, substance abuse, chronic disease
• Sexual violence increases likelihood of girls dropping out of school
• Poor, uneducated girls are more vulnerable to abuse, and become a vector for continued HIV spread and giving birth to children who are more likely to be orphaned, creating a vicious cycle of vulnerability
Sexual Violence Against Girls
Societal Choice

- Increased spread of HIV and related treatment costs
- Higher rates of maternal mortality
- Larger number of orphans
- Ongoing vicious cycle of vulnerability
- Better educated female population
- Higher income contribution to families and society
- Reduced spread of infectious disease
- Faster economic development
Sexual Violence Against Girls
Positive Interventions

At the Clinton Global Initiative Annual Meeting in September 2009, an impressive group of partners announced a new initiative to address sexual violence against girls.
Sexual Violence Against Girls
Positive Interventions

Three Primary Intervention Strategies

- Expand surveillance of sexual violence against girls in developing and emerging countries
- Develop technical package of interventions for implementation at a country level to reduce the incidence of sexual violence against girls
- Launch major media campaign to elevate awareness of this problem and motivate social and behavioral change
Sexual Violence Against Girls
Positive Interventions

First Countries for Implementation
• Swaziland
• Mozambique
• Tanzania
• South Africa

Anticipated Expansion to Additional Countries
• Kenya
• Zimbabwe
• Papua New Guinea
• Latin America, Mid East

Protection, education and empowerment of girls is a key enabler for social and economic development

A Lynchpin Issue and Opportunity
Millennium Development Goals
Summary Commentary

• While progress has been made, the world is still behind the goal of achieving the health-related MDGs by 2015

• Most of the progress has been with vertical interventions, particularly for childhood immunization and HIV/AIDS

• Lack of sufficient health systems is a fundamental barrier to further progress, both for infectious and chronic disease

• Most fundamental health system gap is the shortage of clinicians, impacted by both ‘pull’ and ‘push’ factors

• Governments and global agencies are now responding to the need for investment in Health System Strengthening
• Health System Strengthening will help address barriers to further progress with the health-related MDGs

• The private sector has resources, technologies and skills that can help support MDG attainment

• Behavioral and societal interventions are also needed – Social System Strengthening

• Example: gender inequities and sexual violence contribute to disease spread and impair economic development

• Opportunity to strengthen training and deployment in the behavioral and social sciences related to global health
Millennium Development Goals
The Essential Role of Nursing

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

Health System Strengthening
Economic Development
Social System Strengthening
Community Leadership

Healthy and Productive Health Workforce
Thank You

Q&A

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