"When it comes to global health, there is no 'them'... only 'us.'"
~Global Health Council
Learning Objectives

• Define the terms health, public health, & global health

• Describe some principles & examples of global health efforts

• Identify countries based on World Bank classification

• Describe the Millennium Development Goals and their relation to global health
Why Study Global Health?

- Life expectancy has improved due to public health measures (US #s)
- YET worldwide:
  - 10,000 babies die every day before 4 wks old
  - 529,000 women die every year in childbirth
  - >750,000 children die every year of measles
  - 1.6 million people die every year of TB
- Most of these deaths are preventable!
- Geographic boundaries are obsolete = no more “us” vs. “them”
- Every life is important – health disparities affect us all

Nearly one billion people lack access to safe water and 2.5 billion do not have improved sanitation. The health and economic impacts are staggering.
Definitions

• Health
State of complete physical, mental, & social well-being and not merely the absence of disease or infirmity

• Public Health
Science & art of preventing disease; prolonging life; & promoting physical & mental health through organized community efforts toward a sanitary environment, control of community infections, education in hygiene & development of social machinery in community to maintain health

• Global Health
Health problems, issues, & concerns that transcend national boundaries and may best be addressed by cooperative actions
### TABLE 1-2 Approaches of Public Health and Medicine

<table>
<thead>
<tr>
<th>Differentiating factors</th>
<th>Public Health</th>
<th>Medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus</td>
<td>Population</td>
<td>Individual</td>
</tr>
<tr>
<td>Ethical Basis</td>
<td>Public service</td>
<td>Personal service</td>
</tr>
<tr>
<td>Emphasis</td>
<td>Disease prevention and health promotion for</td>
<td>Disease diagnosis, treatment, and care for</td>
</tr>
<tr>
<td></td>
<td>communities</td>
<td>individuals</td>
</tr>
<tr>
<td>Interventions</td>
<td>Broad spectrum that may target the environment,</td>
<td>Emphasis on medical care</td>
</tr>
<tr>
<td></td>
<td>human behavior, lifestyle, and medical care</td>
<td></td>
</tr>
</tbody>
</table>

# Public Health Examples

<table>
<thead>
<tr>
<th>TABLE 1-1 Selected Examples of Public Health Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>- The promotion of hand washing</td>
</tr>
<tr>
<td>- The promotion of bicycle and motorcycle helmets</td>
</tr>
<tr>
<td>- The promotion of knowledge about HIV/AIDS</td>
</tr>
<tr>
<td>- Large scale screening for diabetes and hypertension</td>
</tr>
<tr>
<td>- Large scale screening for the eyesight of school children</td>
</tr>
<tr>
<td>- Mass dosing of children against worms</td>
</tr>
<tr>
<td>- The operation of a supplementary feeding program for poorly nourished young children</td>
</tr>
</tbody>
</table>

Source: The Author.
Global Health Principles & Issues

- Programs focus on:
  - Prevention
  - Control
  - Education
  - Assistance
- Maternal & child health
- Social & behavioral health
- Health policy, infrastructure, delivery of services
- Disaster management

TABLE 1-3 Selected Examples of Global Health Issues

- The number of low birthweight babies being born
- The high rates of death of babies in the first month of life
- Measles in young children
- Diarrhea and pneumonia in young children
- The health of HIV/AIDS orphans
- Sexually-transmitted infections in young women
- Violence against women
- TB
- Malaria
- HIV/AIDS
- Parasitic infections, such as hookworm
- The rapid increase in diabetes and heart disease
Since prehistoric times, people have migrated to new territories to improve livelihood (additional food sources, trade, economics).

Columbus started the modern “trend” in 1492—when the Old World suddenly came into contact with the New.

- European colonial expansion major influence on international health
- Spread of venereal disease, smallpox, even with limitations due to malaria
Globalization on Health

- Impact of the industrial revolution
- Public health measures implemented
- Modern medicine (1840 to 1900)
  - Humours of the body (miasma) to biomedical science
  - Microscope, staining techniques
  - Physiology & nutrition
- Technology advances both global health & world community
  - One year to travel around the world (1850)
  - Now, rapid travel (24-48 hours) possible
  - Spread of infectious diseases, but quick delivery of aid
- Rapid communication of information advances health practice
  - Human genome project
Equal Area Projection Map

The Hobo-Dyer Equal Area Projection

This map belongs to the family of Cylindrical Equal Area projections in which the latitude and longitude lines form a rectangular grid. Other projections in this family include the Lambert, Cylindrical Equal Area, and Peters projections. In the present case, the "cylinder" is assumed to wrap around the globe and cut it at 37° north and south, in order to preserve the equal area property the shapes of the landmasses become progressively flattened towards the poles, but shapes between 45° north and south are well preserved.

The Hobo-Dyer Equal Area projection (above) shows each country's area at true proportion. This makes it fair to all countries. Other ways of seeing the world include:
(1) Buckminster Fuller's Dymaxion Map,
(2) the Eckert II projection,
(3) Leonardo da Vinci's mappamundi, and
(4) a population cartogram.

For more information on these images visit www.odt.org/hdp
World Divisions

• After World War II: “Western bloc” & “Eastern Bloc”
  – NATO & Warsaw Pact countries
• But, many countries did not fit this classification
  – In 1952, Alfred Sauvy (French demographer) distinguished these nations as the “Third World”
    – Africa, South America, Asia
• NATO countries then referred to as “First World”
  – Western Europe, US, Canada, Japan, Australia, New Zealand
• Soviet Bloc referred to as “Second World”
  – Soviet Union, Eastern Europe
  – Also used for other communist countries, such as China, Albania
By end of World War II, Europe suffered substantial losses

On Dec 27, 1945, the international community established the World Bank

Organization committed to reducing poverty & improving living standards
  – 186 member countries
  – Largest provider of international development assistance
  – $20 billion in new loans each year

http://www.worldbank.org/
Headquarters in Washington DC
World Bank Classification by Income

- High Income = Developed
- Middle Income = Developing
- Low Income = Developing

Only 20% of global population lives in high income countries!
Health Disparities

• Resources are not distributed uniformly
  – Adequate food, potable water, housing, income, employment, education, and safety for all
  – Access to health care & medicines
  – Different health care systems
  – Burden of poverty

• Chronic diseases vs. infectious diseases
  – **High income countries** have increased #s of chronic disease
    • Cardiovascular disease, diabetes, obesity
  – **Low income countries** extremely burdened with infectious disease
    • Malaria, HIV, TB, Dengue
In September 2000, 147 heads of State and Government, and 189 nations in total, came together and adopted the Millennium Declaration. This declaration is a call for “freedom from want,” “freedom from fear” and “sustaining our future.”

“The stakes are high: If the Millennium Development Goals are met, an estimated 500 million people will escape poverty by 2015, 250 million will be spared from hunger; and 30 million children, who would not have lived past their fifth birthday, will survive.” –UNICEF
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

8 goals
# Health in the Millennium Development Goals

**Health Targets**

**GOAL 1: ERADICATE EXTREME POVERTY AND HUNGER**

Target 1: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day

Target 2: Halve, between 1990 and 2015, the proportion of people who suffer from hunger

**GOAL 2: ACHIEVE UNIVERSAL PRIMARY EDUCATION**

Target 3: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

**GOAL 3: PROMOTE GENDER EQUALITY AND EMPOWER WOMEN**

Target 4: Eliminate gender disparity in primary and secondary education, preferably by 2005, and at all levels of education no later than 2015

**GOAL 4: REDUCE CHILD MORTALITY**

Target 5: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate

**Health Indicators**

4. Prevalence of underweight children under five years of age
5. Proportion of population below minimum level of dietary energy consumption
13. Under-five mortality rate
14. Infant mortality rate
15. Proportion of one-year-old children immunized against measles
## Progress to Goals

### GOAL 1 | Eradicate extreme poverty and hunger

<table>
<thead>
<tr>
<th>Goals and Targets</th>
<th>Africa</th>
<th>Asia</th>
<th>Oceania</th>
<th>Latin America &amp; Caribbean</th>
<th>Commonwealth of Independent States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce extreme poverty by half</td>
<td>low poverty</td>
<td>very high poverty</td>
<td>high poverty</td>
<td>high poverty</td>
<td>very high poverty</td>
</tr>
<tr>
<td>Productive and decent employment</td>
<td>very large deficit in decent work</td>
<td>very large deficit in decent work</td>
<td>large deficit</td>
<td>very large deficit in decent work</td>
<td>very large deficit in decent work</td>
</tr>
<tr>
<td>Reduce hunger by half</td>
<td>low hunger</td>
<td>very high hunger</td>
<td>moderate hunger</td>
<td>moderate hunger</td>
<td>high hunger</td>
</tr>
</tbody>
</table>

### GOAL 2 | Achieve universal primary education

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<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Universal primary schooling</td>
<td>high enrolment</td>
<td>moderate enrolment</td>
<td>high enrolment</td>
<td>high enrolment</td>
<td>moderate enrolment</td>
</tr>
</tbody>
</table>

### GOAL 3 | Promote gender equality and empower women

<table>
<thead>
<tr>
<th>Goals and Targets</th>
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<th>Commonwealth of Independent States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal girls' enrolment in primary school</td>
<td>close to parity</td>
<td>close to parity</td>
<td>parity</td>
<td>parity</td>
<td>parity</td>
</tr>
<tr>
<td>Women's share of paid employment</td>
<td>low share</td>
<td>medium share</td>
<td>high share</td>
<td>medium share</td>
<td>low share</td>
</tr>
<tr>
<td>Women's equal representation in national parliaments</td>
<td>very low representation</td>
<td>low representation</td>
<td>moderate representation</td>
<td>moderate representation</td>
<td>low representation</td>
</tr>
</tbody>
</table>

### GOAL 4 | Reduce child mortality

<table>
<thead>
<tr>
<th>Goals and Targets</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Reduce mortality of under-five-year-olds by two thirds</td>
<td>low mortality</td>
<td>very high mortality</td>
<td>low mortality</td>
<td>moderate mortality</td>
<td>high mortality</td>
</tr>
</tbody>
</table>
**GOAL 5: IMPROVE MATERNAL HEALTH**

<table>
<thead>
<tr>
<th>Target 6</th>
<th>Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target 16</td>
<td>Maternal mortality ratio</td>
</tr>
<tr>
<td></td>
<td>Proportion of births attended by skilled health personnel</td>
</tr>
</tbody>
</table>

**GOAL 6: COMBAT HIV/AIDS, MALARIA AND OTHER DISEASES**

<table>
<thead>
<tr>
<th>Target 7</th>
<th>Have halted by 2015 and begun to reverse the spread of HIV/AIDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target 18</td>
<td>HIV prevalence among pregnant women aged 15-24 years</td>
</tr>
<tr>
<td></td>
<td>Condom use rate of the contraceptive prevalence rate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Target 8</th>
<th>Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prevalence and death rates associated with malaria</td>
</tr>
<tr>
<td></td>
<td>Proportion of population in malaria-risk areas using effective malaria prevention and treatment measures</td>
</tr>
<tr>
<td></td>
<td>Prevalence and death rates associated with tuberculosis</td>
</tr>
<tr>
<td></td>
<td>Proportion of tuberculosis cases detected and cured under DOTS (Directly Observed Treatment Short-course)</td>
</tr>
</tbody>
</table>

### Goals and Targets

<table>
<thead>
<tr>
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<th>Commonwealth of Independent States</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Northern</td>
<td>Sub-Saharan</td>
<td>Eastern</td>
<td>South-Eastern</td>
<td>Southern</td>
</tr>
<tr>
<td>Reduce maternal mortality by three-quarters*</td>
<td>moderate mortality</td>
<td>very high mortality</td>
<td>low mortality</td>
<td>high mortality</td>
<td>high mortality</td>
</tr>
<tr>
<td>Access to reproductive health</td>
<td>moderate access</td>
<td>low access</td>
<td>high access</td>
<td>moderate access</td>
<td>moderate access</td>
</tr>
</tbody>
</table>

### GOAL 5 | Improve maternal health

- Reduce maternal mortality by three-quarters
- Access to reproductive health

### GOAL 6 | Combat HIV/AIDS, malaria and other diseases

- Halt and reverse spread of HIV/AIDS
- Halt and reverse spread of tuberculosis

| Halt and reverse spread of HIV/AIDS | low prevalence | high prevalence | low prevalence | low prevalence | low prevalence | low prevalence | low prevalence | moderate prevalence | moderate prevalence | moderate prevalence | low prevalence |
| Halt and reverse spread of tuberculosis | low mortality | high mortality | moderate mortality | high mortality | moderate mortality | low mortality | moderate mortality | low mortality | moderate mortality | low mortality |

*moderate mortality, very high mortality, low mortality, high mortality, moderate mortality
### GOAL 7: ENSURE ENVIRONMENTAL SUSTAINABILITY

<table>
<thead>
<tr>
<th>Target</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources</td>
</tr>
<tr>
<td>10</td>
<td>Halve by 2015 the proportion of people without sustainable access to safe drinking-water and sanitation</td>
</tr>
<tr>
<td>11</td>
<td>By 2020 to have achieved a significant improvement in the lives of at least 100 million slum dwellers</td>
</tr>
</tbody>
</table>

| 29. | Proportion of population using solid fuels |
| 30. | Proportion of population with sustainable access to an improved water source, urban and rural |
| 31. | Proportion of population with access to improved sanitation, urban and rural |

### GOAL 8: DEVELOP A GLOBAL PARTNERSHIP FOR DEVELOPMENT

<table>
<thead>
<tr>
<th>Target</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Develop further an open, rule-based, predictable, non-discriminatory trading and financial system</td>
</tr>
<tr>
<td>13</td>
<td>Address the special needs of the least developed countries</td>
</tr>
<tr>
<td>14</td>
<td>Address the special needs of landlocked countries and small island developing states</td>
</tr>
<tr>
<td>15</td>
<td>Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term</td>
</tr>
<tr>
<td>16</td>
<td>In cooperation with developing countries, develop and implement strategies for decent and productive work for youth</td>
</tr>
<tr>
<td>17</td>
<td>In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries</td>
</tr>
<tr>
<td>46.</td>
<td>Proportion of population with access to affordable essential drugs on a sustainable basis</td>
</tr>
<tr>
<td>18</td>
<td>In cooperation with the private sector, make available the benefits of new technologies, especially information and communications</td>
</tr>
</tbody>
</table>
## Progress to Goals

<table>
<thead>
<tr>
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<th>Africa</th>
<th>Asia</th>
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<th>Commonwealth of Independent States</th>
<th>Europe</th>
<th>Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Northern</td>
<td>Sub-Saharan</td>
<td>Eastern</td>
<td>South-Eastern</td>
<td>Southern</td>
<td>Western</td>
<td></td>
</tr>
<tr>
<td>Reverse loss of forests</td>
<td>low forest cover</td>
<td>medium forest area</td>
<td>medium forest area</td>
<td>high forest cover</td>
<td>medium forest area</td>
<td>low forest cover</td>
<td>high forest cover</td>
</tr>
<tr>
<td>Halve proportion without improved drinking water</td>
<td>high coverage</td>
<td>low coverage</td>
<td>moderate coverage</td>
<td>moderate coverage</td>
<td>moderate coverage</td>
<td>high coverage</td>
<td>low coverage</td>
</tr>
<tr>
<td>Halve proportion without sanitation</td>
<td>moderate coverage</td>
<td>very low coverage</td>
<td>low coverage</td>
<td>very low coverage</td>
<td>moderate coverage</td>
<td>low coverage</td>
<td>moderate coverage</td>
</tr>
<tr>
<td>Improve the lives of slum-dwellers</td>
<td>moderate proportion of slum-dwellers</td>
<td>very high proportion of slum-dwellers</td>
<td>moderate proportion of slum-dwellers</td>
<td>high proportion of slum-dwellers</td>
<td>high proportion of slum-dwellers</td>
<td>moderate proportion of slum-dwellers</td>
<td>moderate proportion of slum-dwellers</td>
</tr>
</tbody>
</table>

## GOAL 7 | Ensure environmental sustainability

## GOAL 8 | Develop a global partnership for development

| Internet users | high usage | low usage | high usage | moderate usage | low usage | high usage | low usage | high usage | high usage | moderate usage |
|----------------|------------|-----------|------------|----------------|-----------|------------|-----------|------------|------------|----------------|----------------|


Goal 7: Revised Target Dates

- **Sustainable access to water source (blue bar)**
  - Already achieved in South Asia & Latin America
  - Meet target in 2040 in Sub-Saharan Africa & Arab States

- **Access to improved sanitation (red bar)**
  - Only 2 regions expected to meet 2015 deadline
  - Sub-Saharan Africa lags far behind other nations

Encouraging Field Results

Millennium Villages register enormous early success in the first year of operations, including more than a doubling of average food production across sites and distribution of more than 330,000 bed nets.
Study Questions

• Define health, public health & global health.

• Name 4 public health activities.

• Name 5 global health issues.

• Detail the 8 Millennium Development Goals.

• What factors limit progress to meeting the MDG targets?
In Summary...

- Health, human development, labor productivity and economic development are linked
- Great progress in health in the last 50 years, but progress has been uneven and large gaps remain
- There are enormous disparities in health
- Countries can achieve high levels of health, even without high levels of income
- Cooperation is needed to solve some global health problems
- Millennium Development Goals are reversing development disparities & improving health
- An important part of health status depends on individuals, families, and communities
- The health of each of us is linked to the health of all of us